NORTH CAROLINA
Turnpike Authority

Operations Statistics Report

Triangle Expressway

2017 Third Quarter Report

July - September

1 S. Wilmington Street
Raleigh, NC 27601

Last Updated:
October 31, 2017

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INTRODUCTION

Purpose

The North Carolina Turnpike Authority (NCTA) presents the operations statistics for the Triangle Expressway during the third quarter (July – September) of 2017. The report includes data related to traffic volumes, customer service center operations, roadway operations, and maintenance. The statistics will allow for future analysis to identify quarterly and annual trends over time, providing a quantifiable method to track performance.

Project

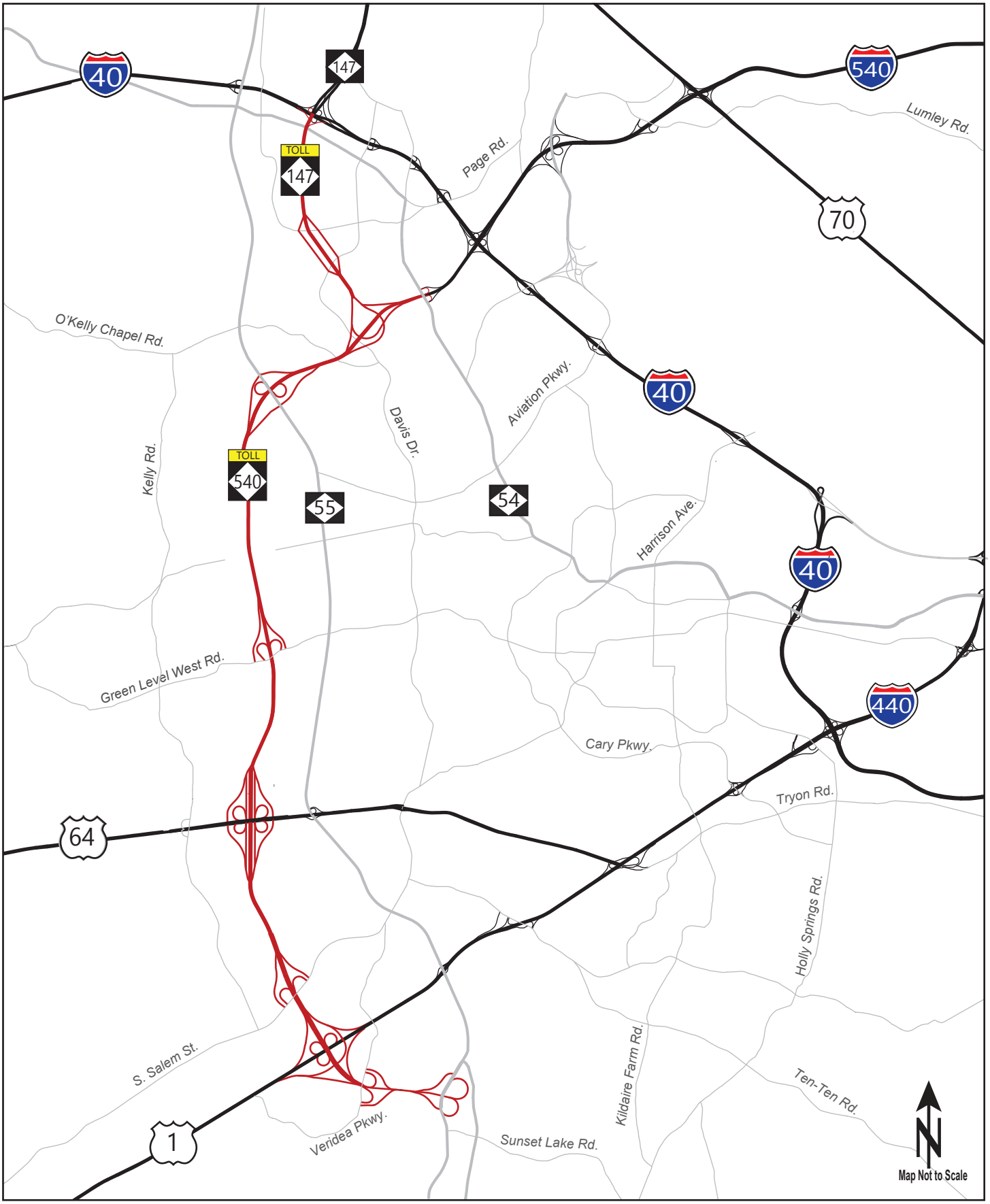
The Triangle Expressway is an 18.8-mile toll road that extends the partially completed "Outer Loop" around the greater Raleigh, North Carolina area from I-40 to NC-55 Bypass. The six-lane, controlled-access toll facility relieves congestion on NC-55 while improving access to the Research Triangle Park by reducing travel times for commuters residing to the south and east. The Triangle Expressway is currently comprised of two sections: NC-147 and NC-540.

NC-147 includes 3.4 miles of toll road between I-40 and NC-540. This section of the Triangle Expressway includes interchanges at Hopson Road, Davis Drive, and NC-540. It opened to toll-free traffic on December 8, 2011; tolling on this section began on January 3, 2012.

NC-540 includes 15.4 miles of toll road between NC-54 in western Cary and the NC-55 Bypass near the Town of Holly Springs. The section from NC-54 to US-64 opened to general traffic (toll-free) on August 1, 2012, and toll collection started on August 2, 2012. This section includes interchanges at NC-54, NC-55, Green Level West Road, and US-64. The section from US-64 to NC-55 Bypass opened to general traffic (toll-free) on December 20, 2012, and toll collection started on January 2, 2013. This section includes interchanges at S. Salem Street, US-1, and NC-55 Bypass. On April 3, 2017, a new interchange at Veridea Parkway was opened in this last section of NC-540.

The Triangle Expressway utilizes an all-electronic, non-stop tolling system where there are no toll plazas at which drivers stop and pay cash tolls. Instead, free-flow toll zones are employed where vehicles are detected while traveling at highway speeds. Payments are accepted through an Electronic Toll Collection (ETC) program called NC Quick Pass® or a video billing program called Bill by Mail.

NCTA toll zones are located along the Triangle Expressway at mainline and interchange ramp locations. An illustration of the Triangle Expressway can be seen in *Figure 1*.



Triangle Expressway System Map

Figure 1

Traffic Statistics

TRAFFIC STATISTICS

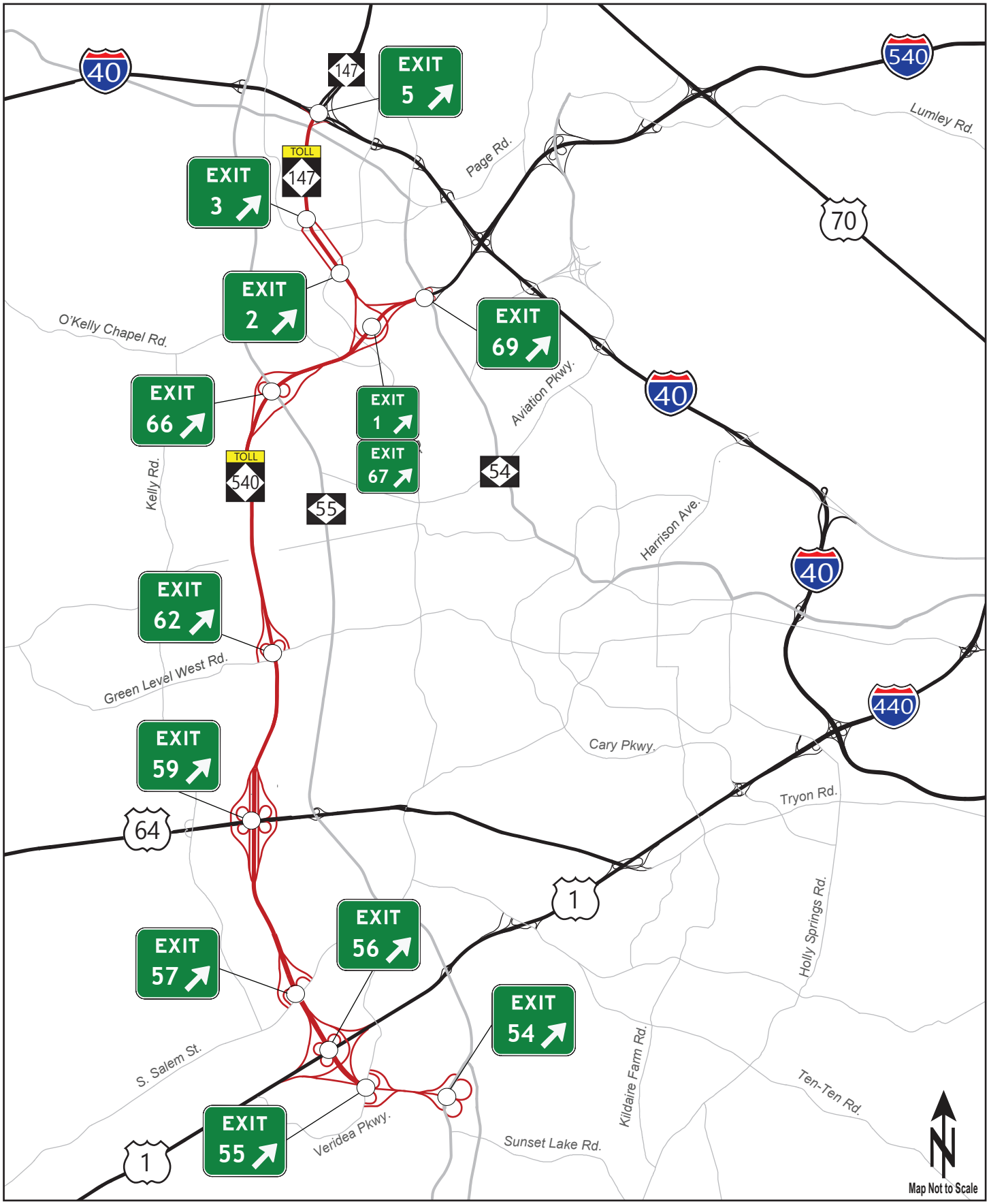
Current and historical traffic data is collected and stored through the use of roadside microwave vehicle detectors (MVDs) installed throughout the Triangle Expressway. The data provides an overview of the roadway's current utilization. The data can also be analyzed to identify trends that could more accurately predict future utilization.

It should be noted that the Triangle Expressway continues to experience a traffic pattern known as "ramp-up." During a ramp-up period, the traffic volumes on a new facility increase at a faster rate than typical growth on existing facilities. Traffic volumes increase significantly as the customers become more familiar with the facility. The ramp-up period for the Triangle Expressway is expected to continue through 2017.

Average Weekday Traffic (AWT)

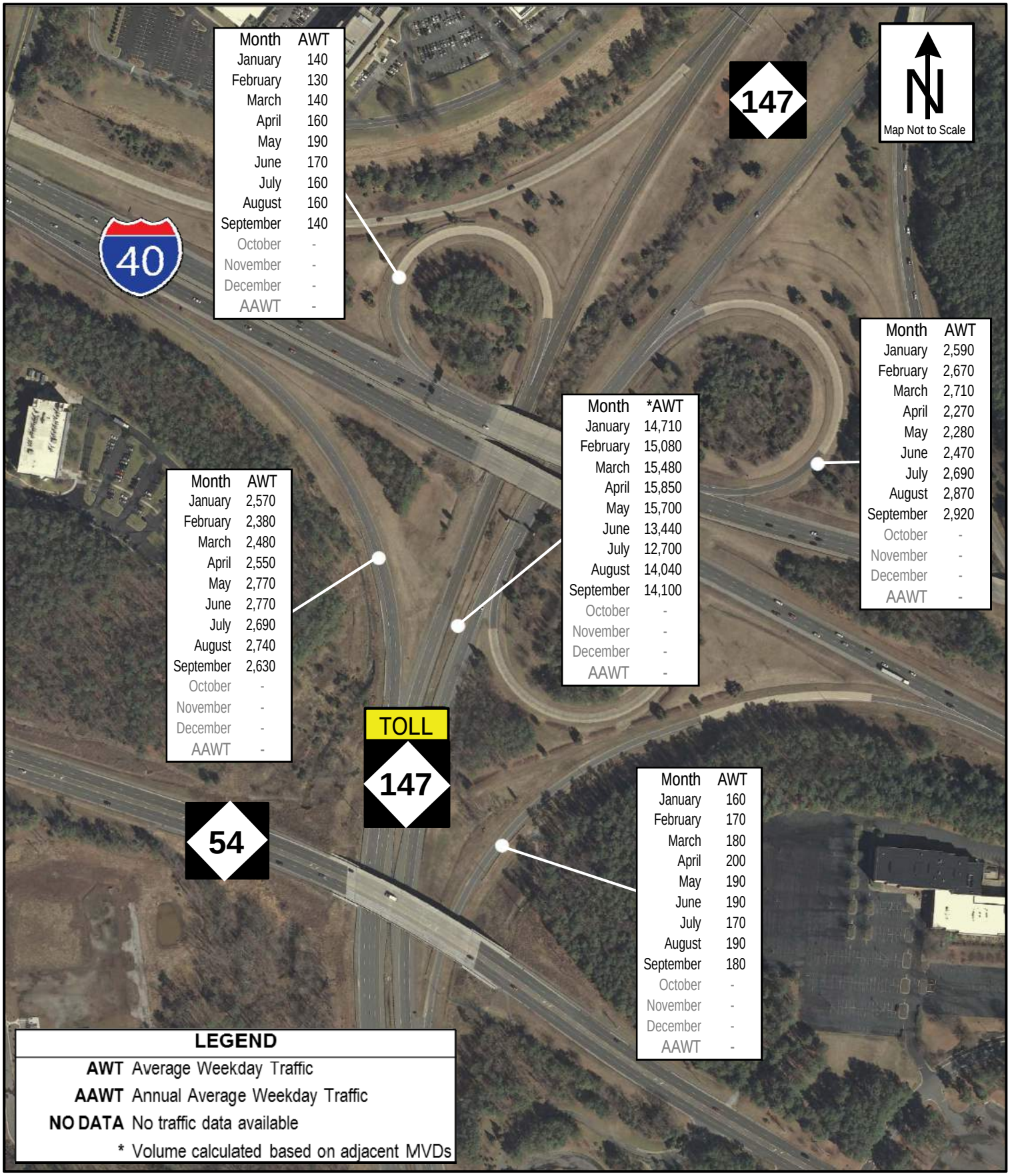
Traffic volume data is collected at all ramps and mainline segments between interchanges. The location of interchanges along the Triangle Expressway can be seen in *Figure 2*. Typically, there is a large difference between peak and off-peak volumes, as well as between weekday and weekend volumes. This gap becomes significantly larger for a tolled facility because it tends to have a much higher percentage of traffic on weekdays during peak hours than non-toll facilities, as there is less of a benefit for toll users during off-peak hours. For this reason, Average Weekday Traffic (AWT) is reported instead of Average Daily Traffic (ADT). AWT is a measure of the average daily traffic collected on a typical Monday through Friday over a designated time period.

Figures 3 to *14* contain visual representations of AWT along the facility which are representative of NCTA's MVD data. It should be noted that if an MVD fails to provide reliable data (meeting the established threshold) for at least five days in a month then "NO DATA" is reported for that MVD.



Triangle Expressway Interchange Map

Figure 2



Month	AWT
January	140
February	130
March	140
April	160
May	190
June	170
July	160
August	160
September	140
October	-
November	-
December	-
AAWT	-

Month	AWT
January	2,590
February	2,670
March	2,710
April	2,270
May	2,280
June	2,470
July	2,690
August	2,870
September	2,920
October	-
November	-
December	-
AAWT	-

Month	*AWT
January	14,710
February	15,080
March	15,480
April	15,850
May	15,700
June	13,440
July	12,700
August	14,040
September	14,100
October	-
November	-
December	-
AAWT	-

Month	AWT
January	2,570
February	2,380
March	2,480
April	2,550
May	2,770
June	2,770
July	2,690
August	2,740
September	2,630
October	-
November	-
December	-
AAWT	-

Month	AWT
January	160
February	170
March	180
April	200
May	190
June	190
July	170
August	190
September	180
October	-
November	-
December	-
AAWT	-

LEGEND

AWT Average Weekday Traffic

AAWT Annual Average Weekday Traffic

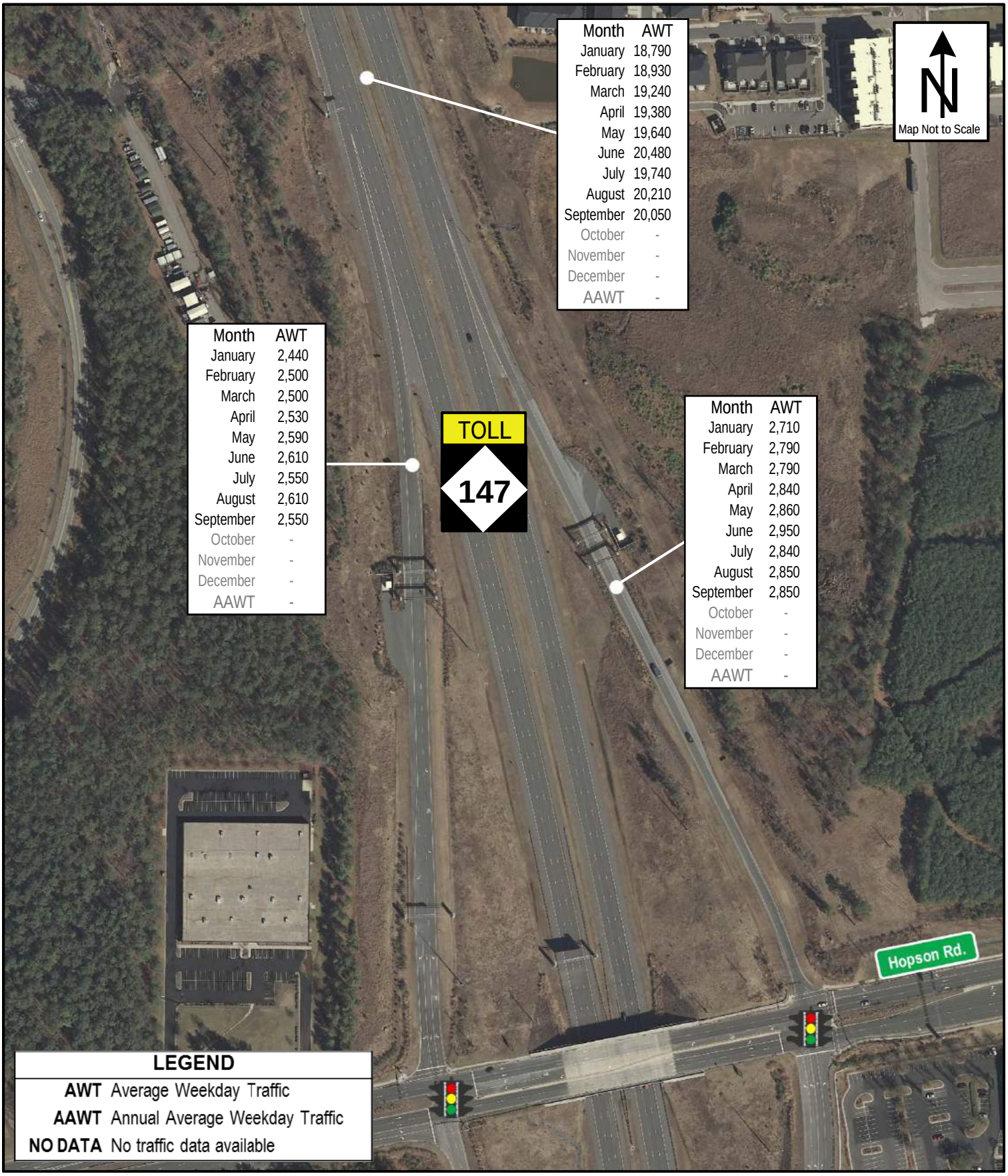
NO DATA No traffic data available

* Volume calculated based on adjacent MVDs

NC-147 at I-40 Interchange

2017 Average Weekday Traffic

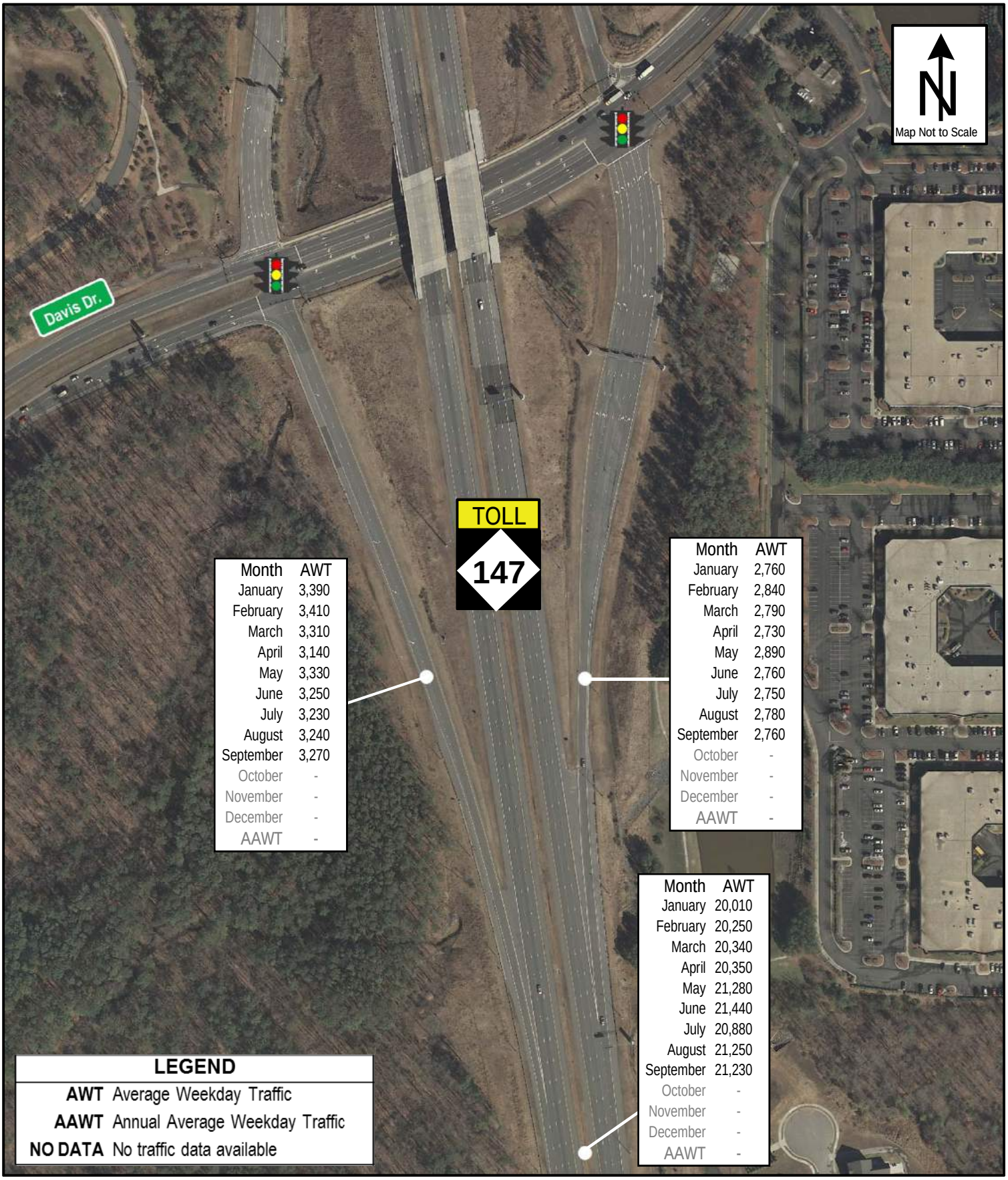
Figure 3



NC-147 at Hopson Rd. Interchange

2017 Average Weekday Traffic

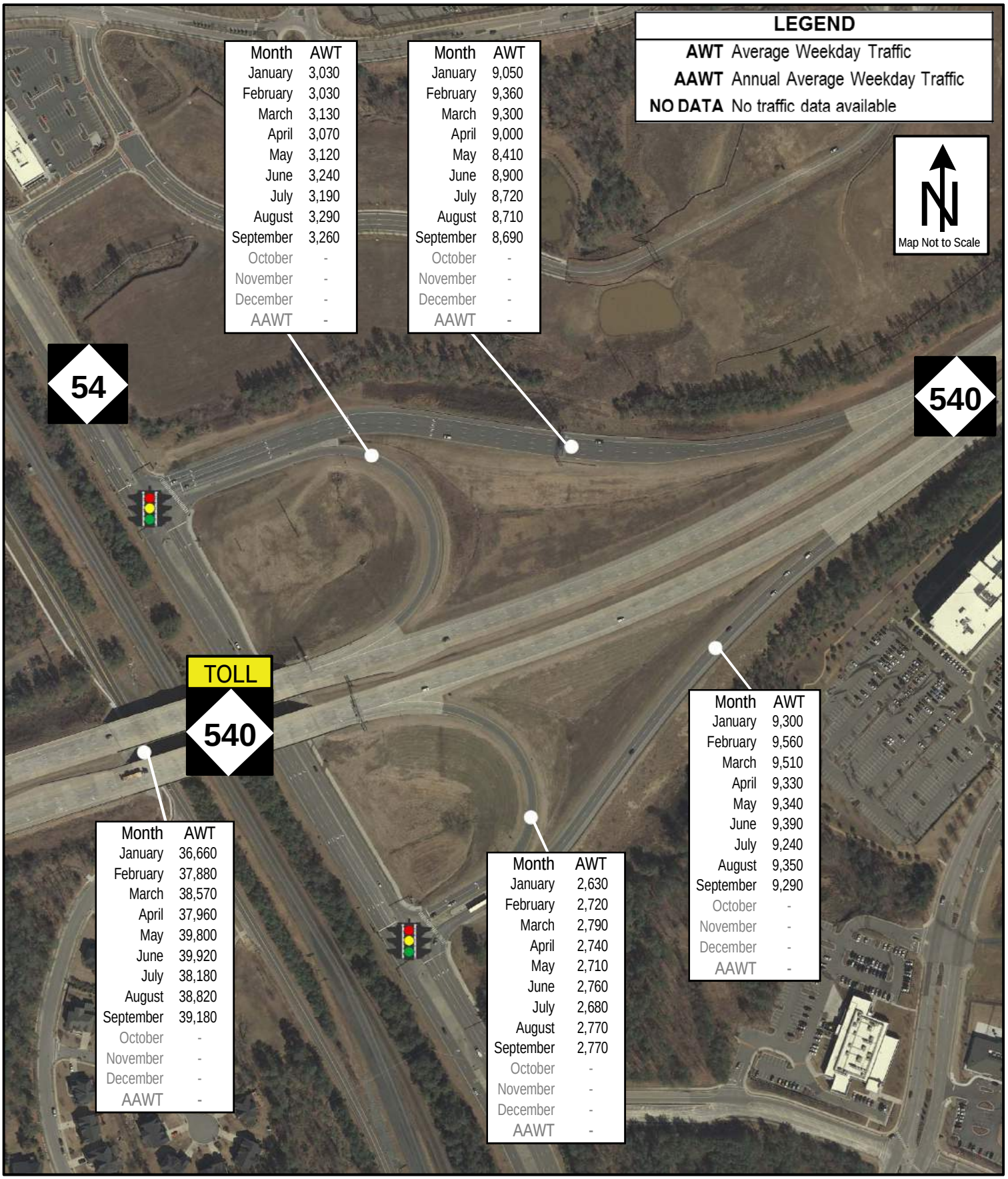
Figure 4



NC-147 at Davis Dr. Interchange

2017 Average Weekday Traffic

Figure 5



Month	AWT
January	3,030
February	3,030
March	3,130
April	3,070
May	3,120
June	3,240
July	3,190
August	3,290
September	3,260
October	-
November	-
December	-
AAWT	-

Month	AWT
January	9,050
February	9,360
March	9,300
April	9,000
May	8,410
June	8,900
July	8,720
August	8,710
September	8,690
October	-
November	-
December	-
AAWT	-

Month	AWT
January	9,300
February	9,560
March	9,510
April	9,330
May	9,340
June	9,390
July	9,240
August	9,350
September	9,290
October	-
November	-
December	-
AAWT	-

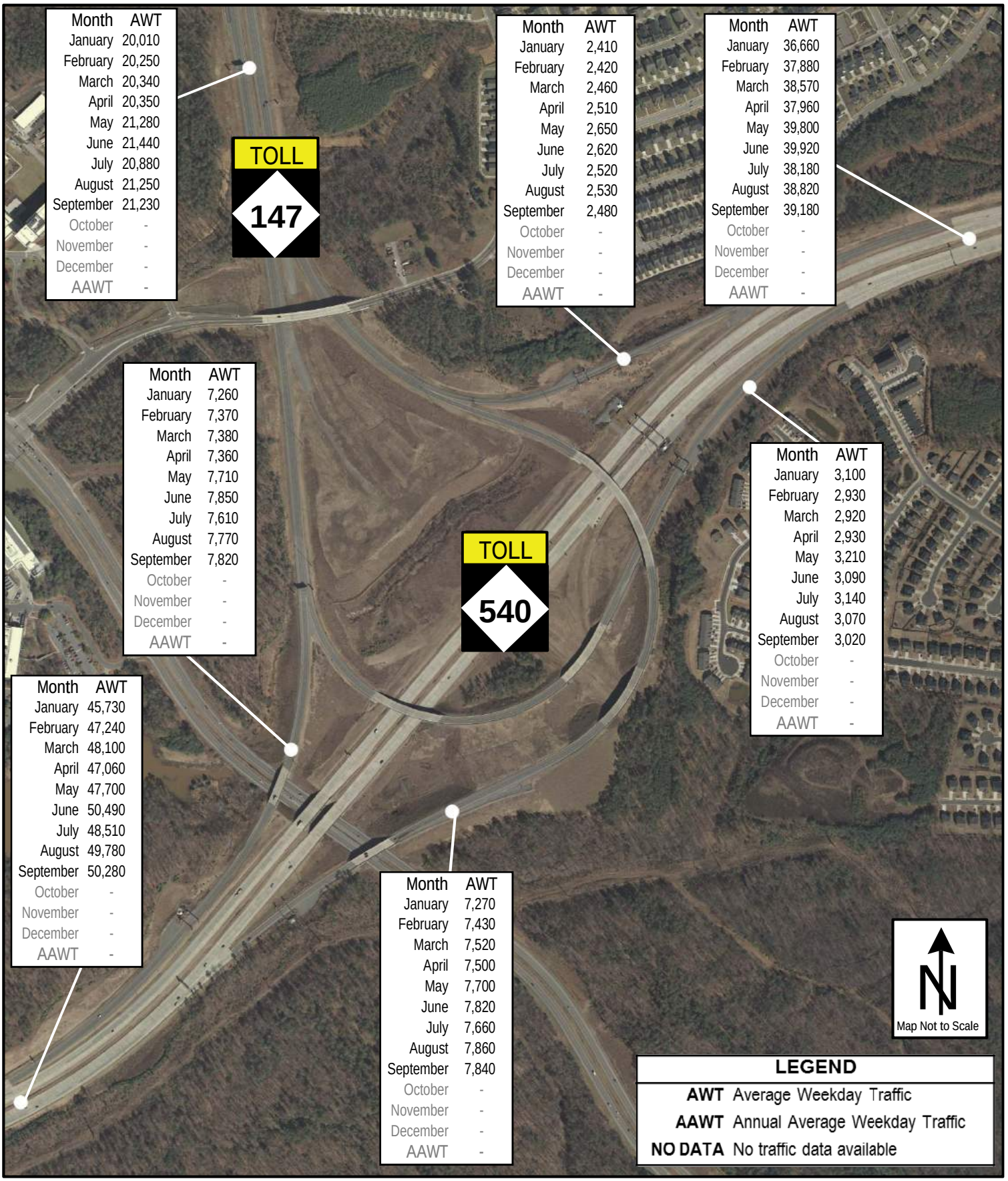
Month	AWT
January	36,660
February	37,880
March	38,570
April	37,960
May	39,800
June	39,920
July	38,180
August	38,820
September	39,180
October	-
November	-
December	-
AAWT	-

Month	AWT
January	2,630
February	2,720
March	2,790
April	2,740
May	2,710
June	2,760
July	2,680
August	2,770
September	2,770
October	-
November	-
December	-
AAWT	-

NC-540 at NC-54 Interchange

2017 Average Weekday Traffic

Figure 6



Month	AWT
January	20,010
February	20,250
March	20,340
April	20,350
May	21,280
June	21,440
July	20,880
August	21,250
September	21,230
October	-
November	-
December	-
AAWT	-

Month	AWT
January	2,410
February	2,420
March	2,460
April	2,510
May	2,650
June	2,620
July	2,520
August	2,530
September	2,480
October	-
November	-
December	-
AAWT	-

Month	AWT
January	36,660
February	37,880
March	38,570
April	37,960
May	39,800
June	39,920
July	38,180
August	38,820
September	39,180
October	-
November	-
December	-
AAWT	-

Month	AWT
January	7,260
February	7,370
March	7,380
April	7,360
May	7,710
June	7,850
July	7,610
August	7,770
September	7,820
October	-
November	-
December	-
AAWT	-

Month	AWT
January	3,100
February	2,930
March	2,920
April	2,930
May	3,210
June	3,090
July	3,140
August	3,070
September	3,020
October	-
November	-
December	-
AAWT	-

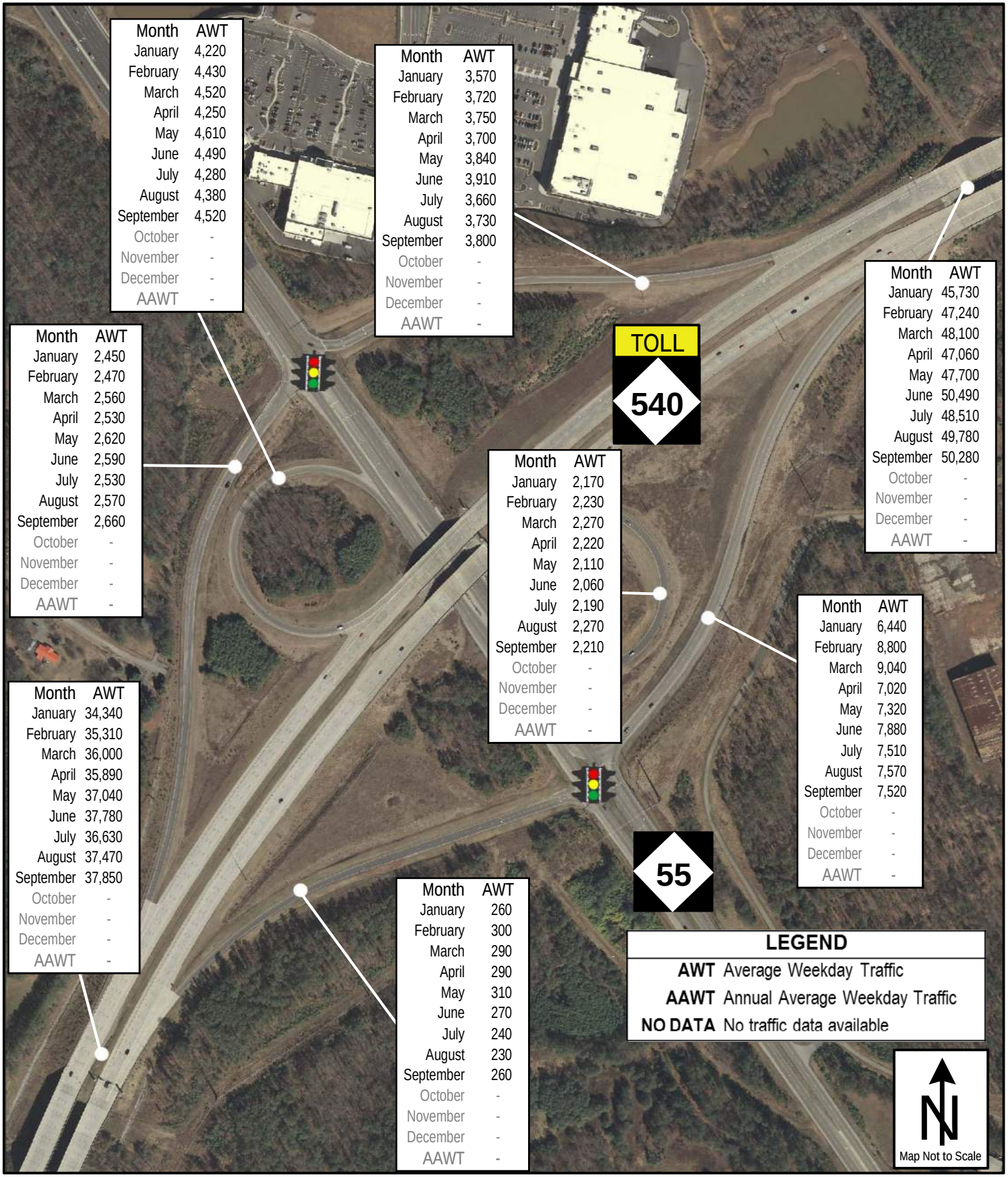
Month	AWT
January	45,730
February	47,240
March	48,100
April	47,060
May	47,700
June	50,490
July	48,510
August	49,780
September	50,280
October	-
November	-
December	-
AAWT	-

Month	AWT
January	7,270
February	7,430
March	7,520
April	7,500
May	7,700
June	7,820
July	7,660
August	7,860
September	7,840
October	-
November	-
December	-
AAWT	-

NC-540 at NC-147 Interchange

2017 Average Weekday Traffic

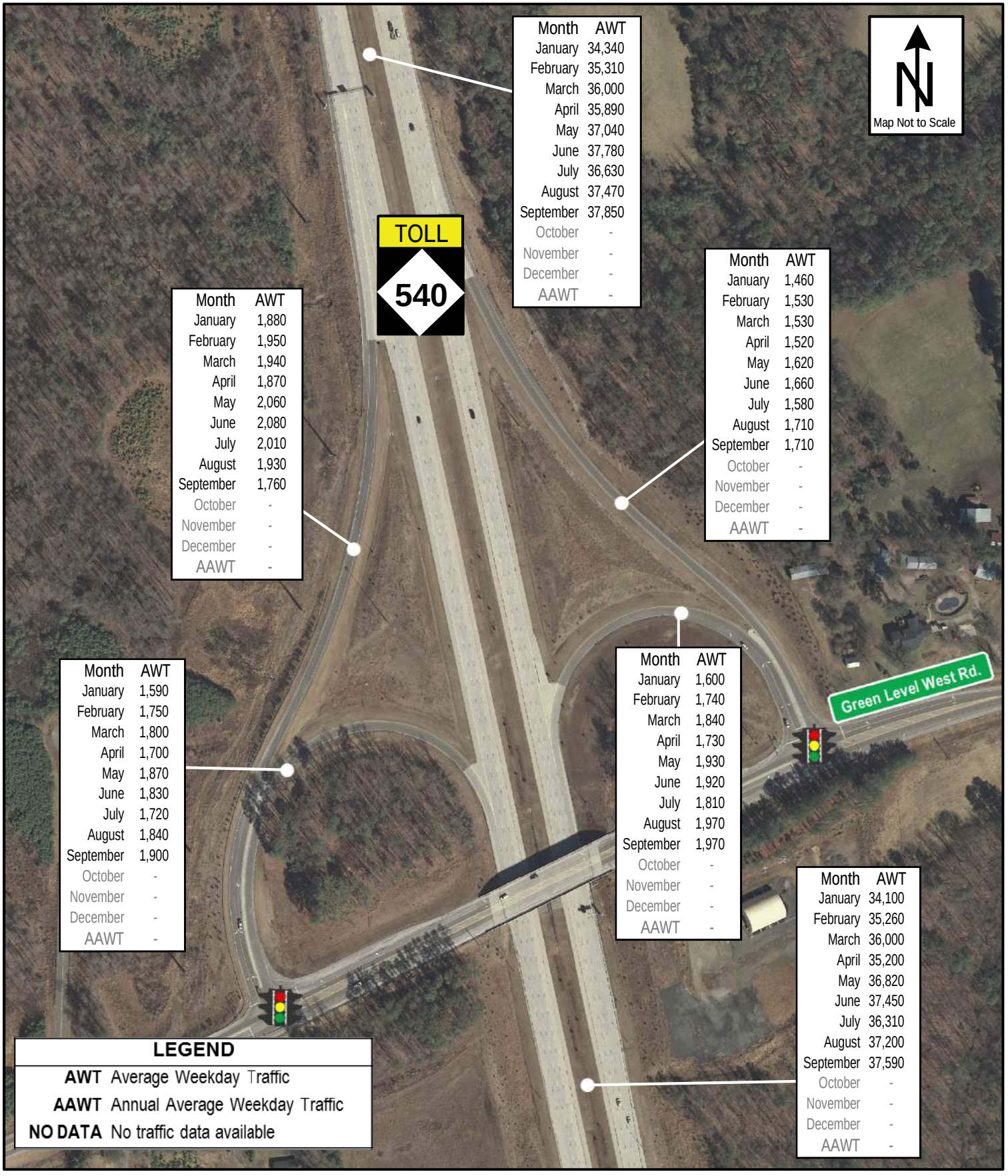
Figure 7



NC-540 at NC-55 Interchange

2017 Average Weekday Traffic

Figure 8



Month	AWT
January	34,340
February	35,310
March	36,000
April	35,890
May	37,040
June	37,780
July	36,630
August	37,470
September	37,850
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,880
February	1,950
March	1,940
April	1,870
May	2,060
June	2,080
July	2,010
August	1,930
September	1,760
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,460
February	1,530
March	1,530
April	1,520
May	1,620
June	1,660
July	1,580
August	1,710
September	1,710
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,590
February	1,750
March	1,800
April	1,700
May	1,870
June	1,830
July	1,720
August	1,840
September	1,900
October	-
November	-
December	-
AAWT	-

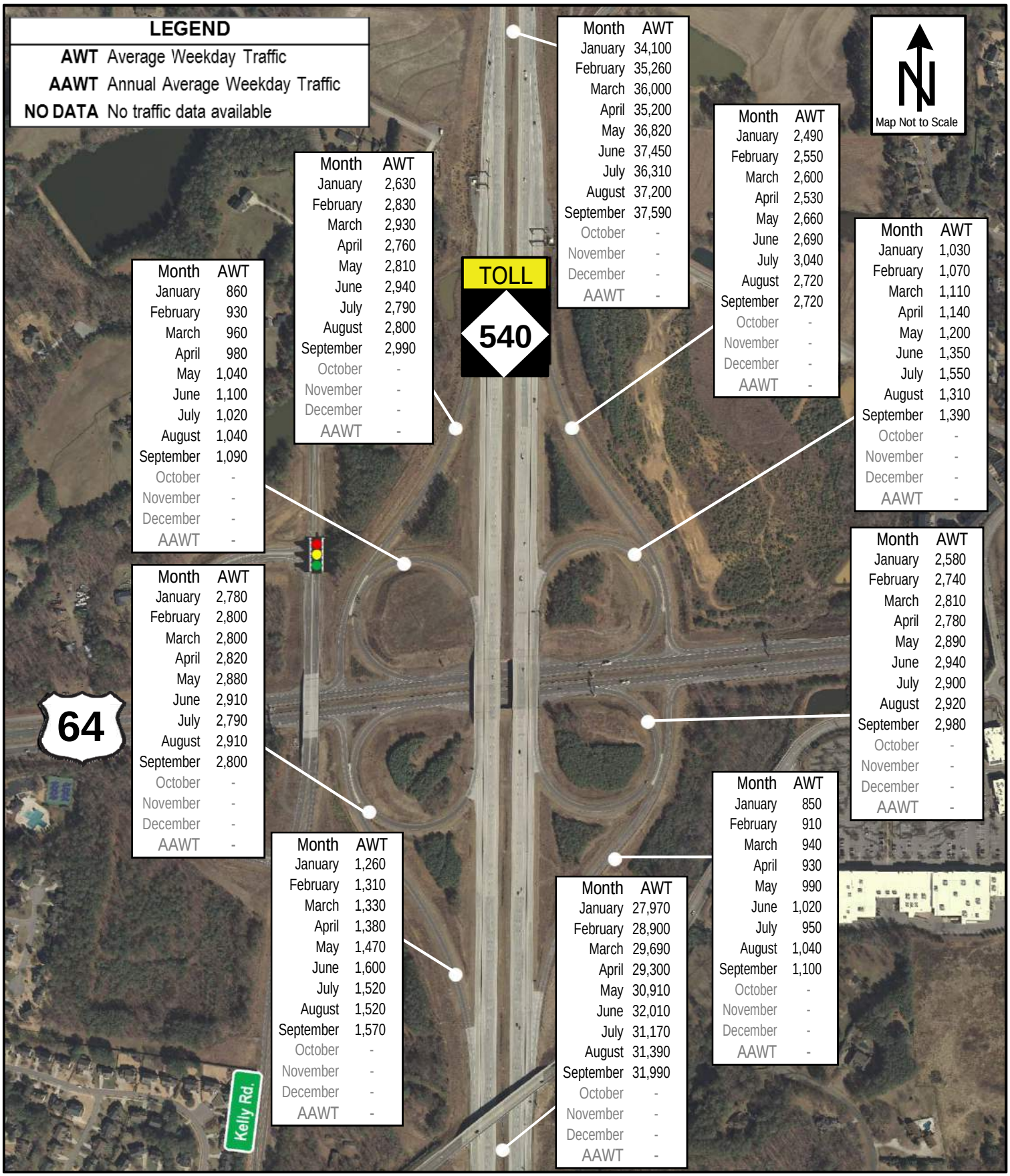
Month	AWT
January	1,600
February	1,740
March	1,840
April	1,730
May	1,930
June	1,920
July	1,810
August	1,970
September	1,970
October	-
November	-
December	-
AAWT	-

Month	AWT
January	34,100
February	35,260
March	36,000
April	35,200
May	36,820
June	37,450
July	36,310
August	37,200
September	37,590
October	-
November	-
December	-
AAWT	-

NC-540 at Green Level West Rd. Interchange

2017 Average Weekday Traffic

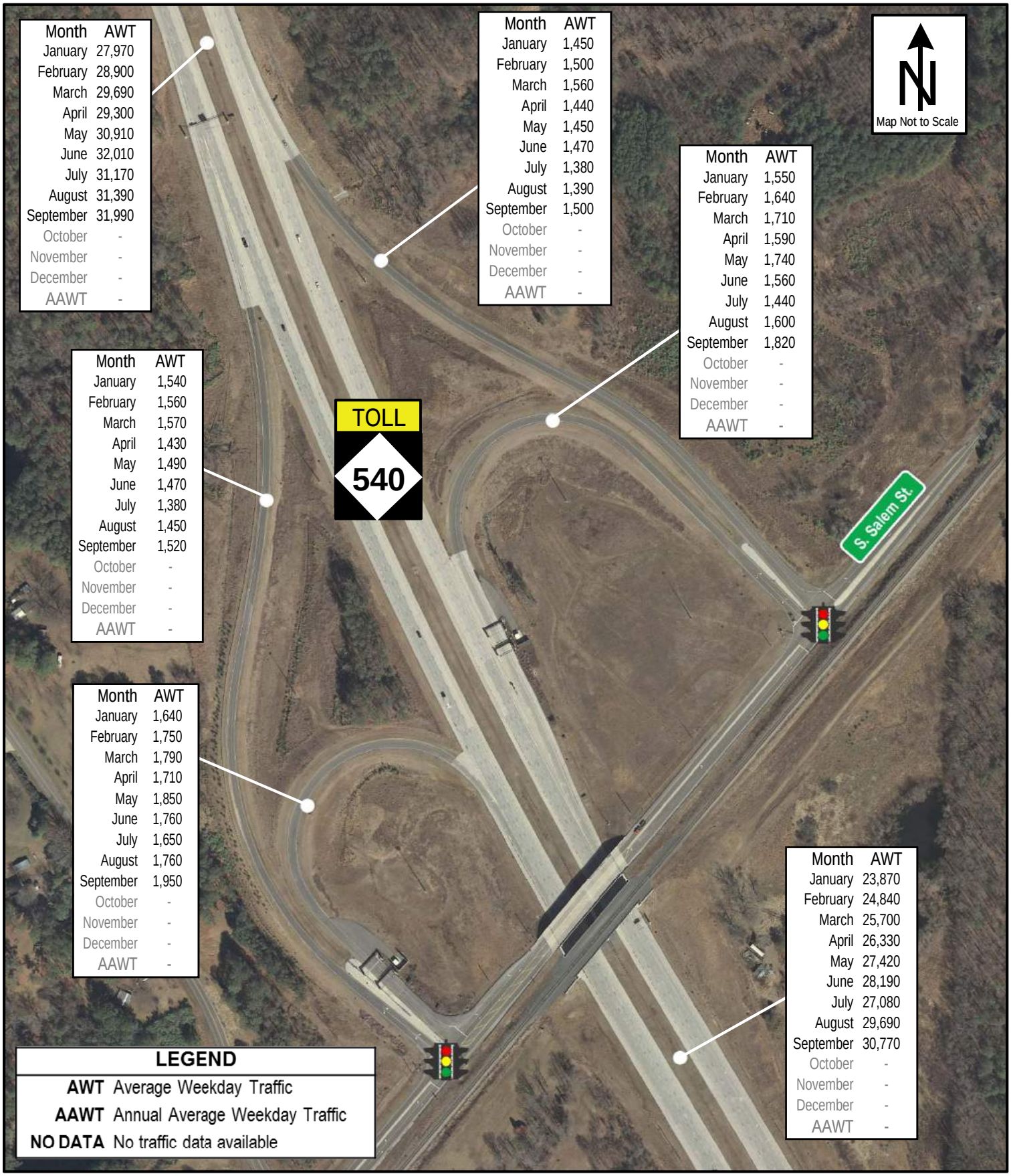
Figure 9



NC-540 at US-64 Interchange

2017 Average Weekday Traffic

Figure 10



Month	AWT
January	27,970
February	28,900
March	29,690
April	29,300
May	30,910
June	32,010
July	31,170
August	31,390
September	31,990
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,450
February	1,500
March	1,560
April	1,440
May	1,450
June	1,470
July	1,380
August	1,390
September	1,500
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,550
February	1,640
March	1,710
April	1,590
May	1,740
June	1,560
July	1,440
August	1,600
September	1,820
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,540
February	1,560
March	1,570
April	1,430
May	1,490
June	1,470
July	1,380
August	1,450
September	1,520
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,640
February	1,750
March	1,790
April	1,710
May	1,850
June	1,760
July	1,650
August	1,760
September	1,950
October	-
November	-
December	-
AAWT	-

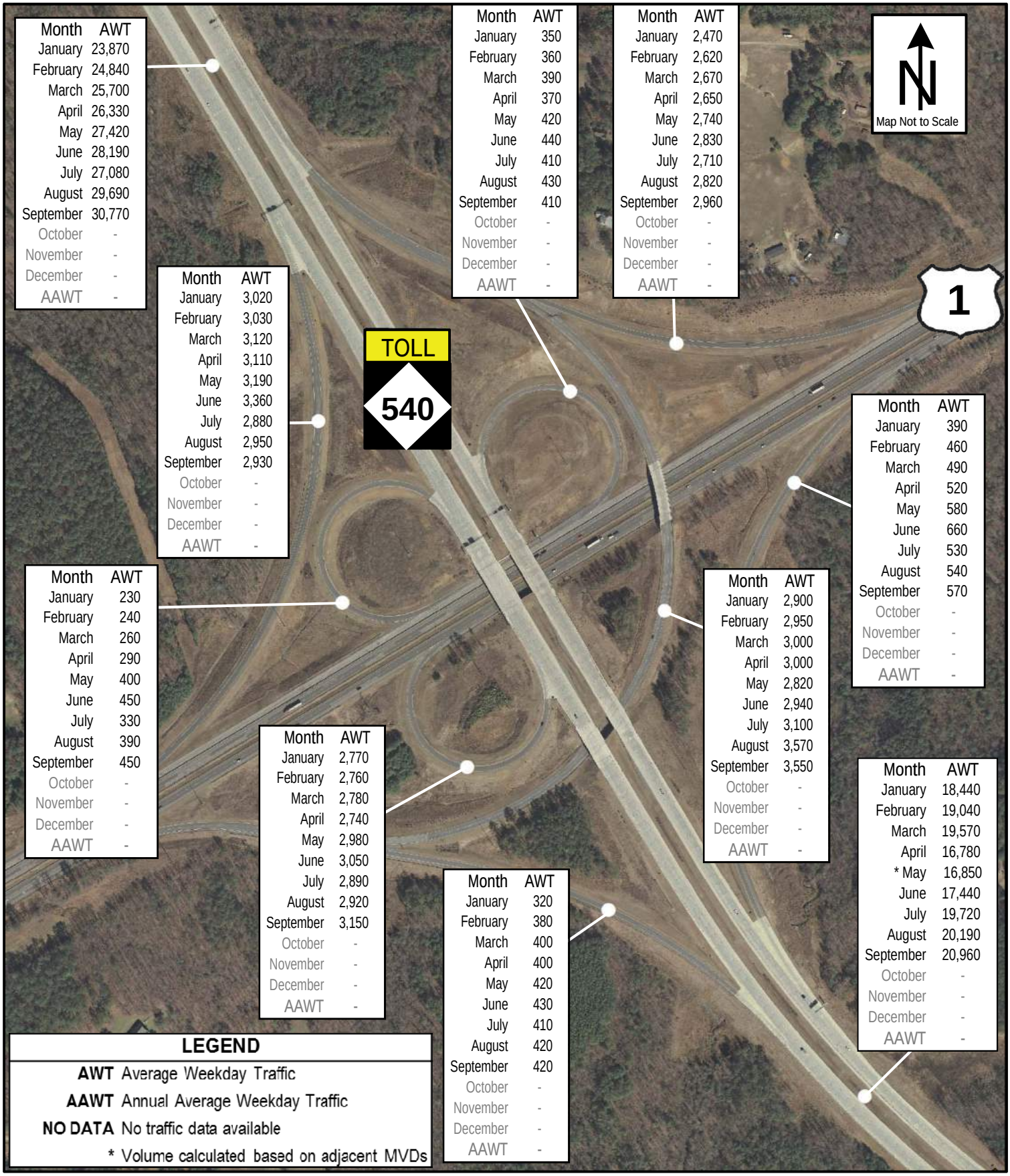
Month	AWT
January	23,870
February	24,840
March	25,700
April	26,330
May	27,420
June	28,190
July	27,080
August	29,690
September	30,770
October	-
November	-
December	-
AAWT	-

LEGEND	
AWT	Average Weekday Traffic
AAWT	Annual Average Weekday Traffic
NO DATA	No traffic data available

NC-540 at S. Salem St. Interchange

2017 Average Weekday Traffic

Figure 11



Month	AWT
January	23,870
February	24,840
March	25,700
April	26,330
May	27,420
June	28,190
July	27,080
August	29,690
September	30,770
October	-
November	-
December	-
AAWT	-

Month	AWT
January	350
February	360
March	390
April	370
May	420
June	440
July	410
August	430
September	410
October	-
November	-
December	-
AAWT	-

Month	AWT
January	2,470
February	2,620
March	2,670
April	2,650
May	2,740
June	2,830
July	2,710
August	2,820
September	2,960
October	-
November	-
December	-
AAWT	-

Month	AWT
January	3,020
February	3,030
March	3,120
April	3,110
May	3,190
June	3,360
July	2,880
August	2,950
September	2,930
October	-
November	-
December	-
AAWT	-

Month	AWT
January	390
February	460
March	490
April	520
May	580
June	660
July	530
August	540
September	570
October	-
November	-
December	-
AAWT	-

Month	AWT
January	230
February	240
March	260
April	290
May	400
June	450
July	330
August	390
September	450
October	-
November	-
December	-
AAWT	-

Month	AWT
January	2,900
February	2,950
March	3,000
April	3,000
May	2,820
June	2,940
July	3,100
August	3,570
September	3,550
October	-
November	-
December	-
AAWT	-

Month	AWT
January	2,770
February	2,760
March	2,780
April	2,740
May	2,980
June	3,050
July	2,890
August	2,920
September	3,150
October	-
November	-
December	-
AAWT	-

Month	AWT
January	320
February	380
March	400
April	400
May	420
June	430
July	410
August	420
September	420
October	-
November	-
December	-
AAWT	-

Month	AWT
January	18,440
February	19,040
March	19,570
April	16,780
* May	16,850
June	17,440
July	19,720
August	20,190
September	20,960
October	-
November	-
December	-
AAWT	-

LEGEND

AWT Average Weekday Traffic

AAWT Annual Average Weekday Traffic

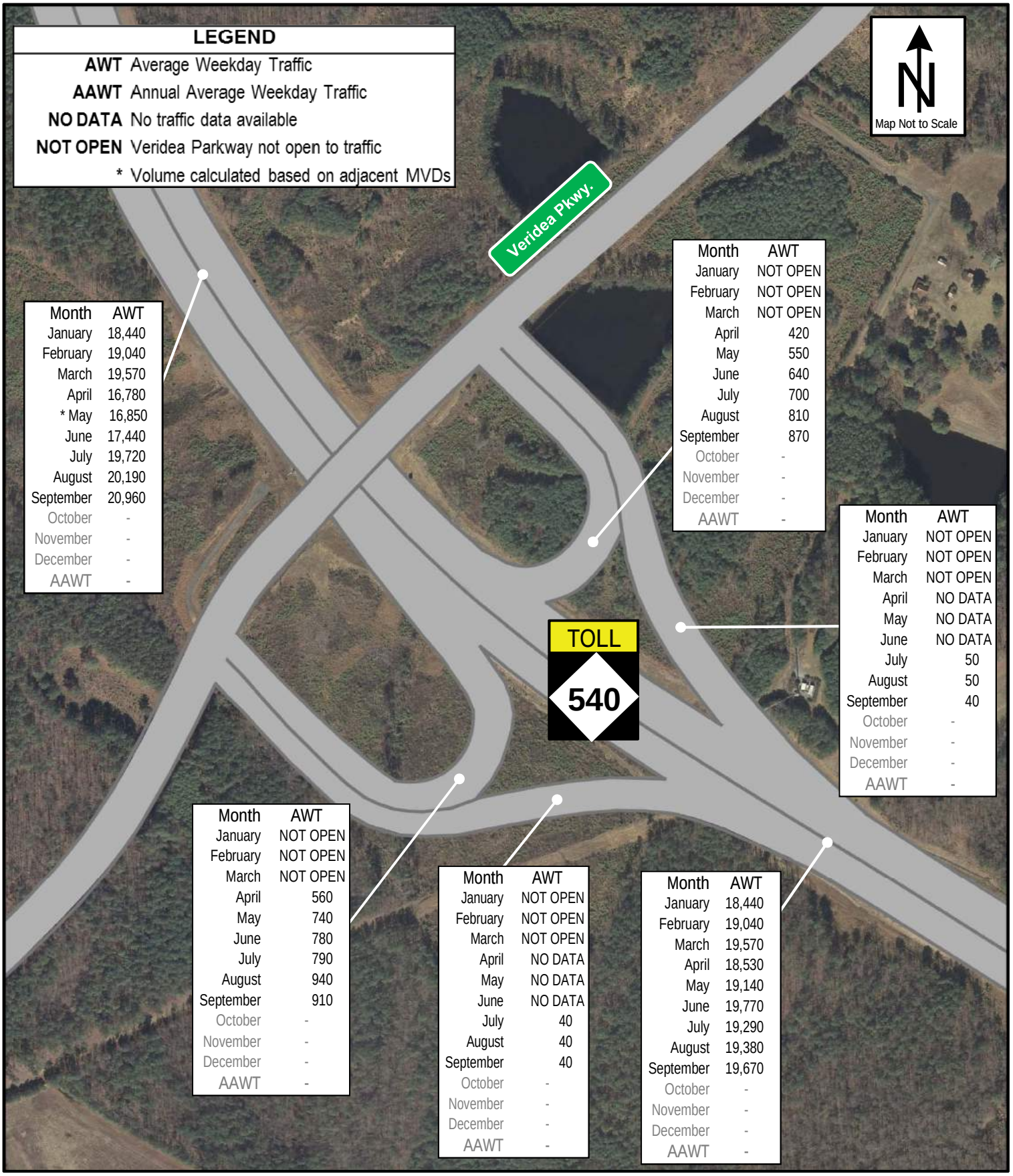
NO DATA No traffic data available

* Volume calculated based on adjacent MVDs

NC-540 at US-1 Interchange

2017 Average Weekday Traffic

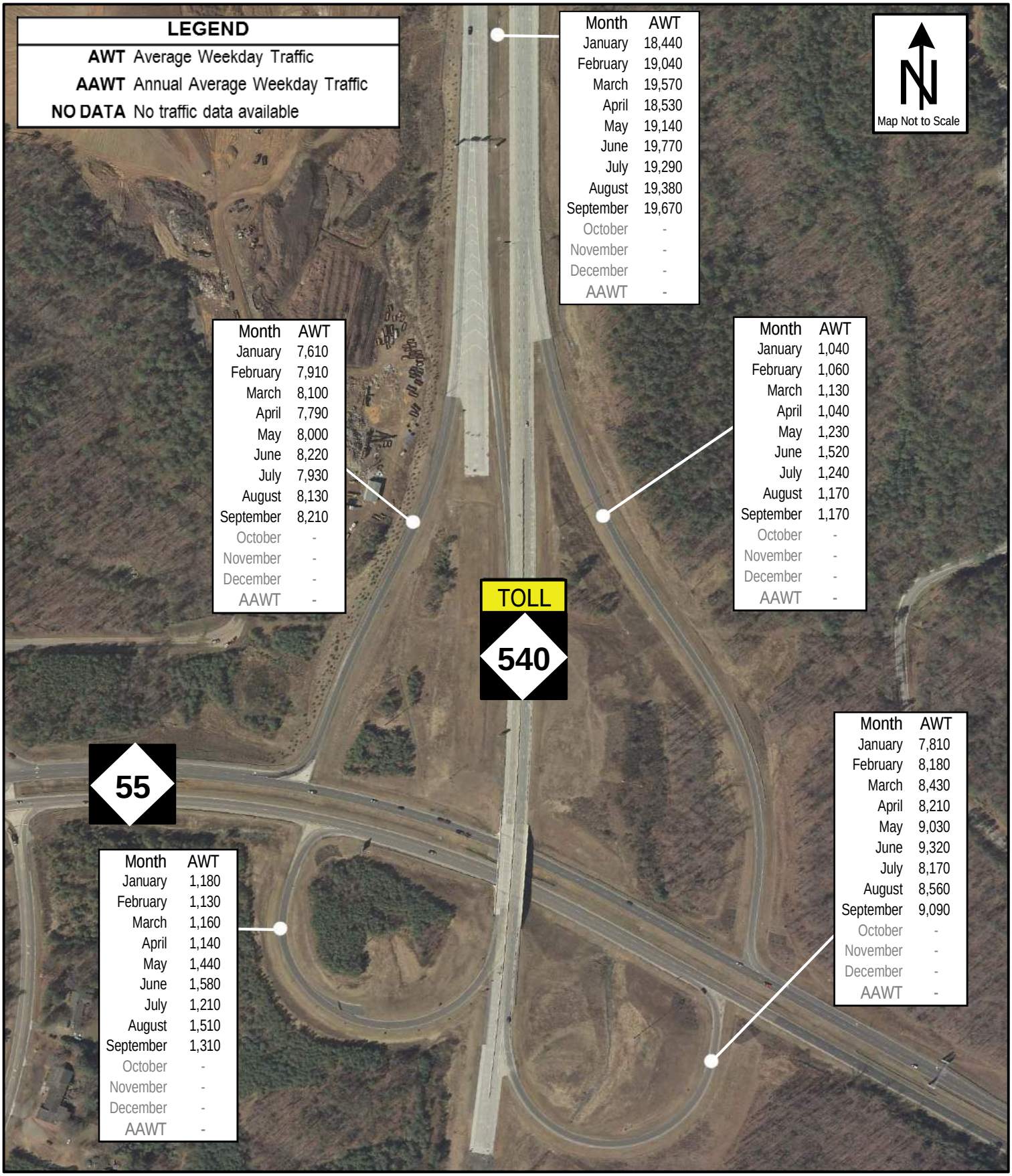
Figure 12



NC-540 at Veridea Pkwy. Interchange

2017 Average Weekday Traffic

Figure 13



Month	AWT
January	18,440
February	19,040
March	19,570
April	18,530
May	19,140
June	19,770
July	19,290
August	19,380
September	19,670
October	-
November	-
December	-
AAWT	-

Month	AWT
January	7,610
February	7,910
March	8,100
April	7,790
May	8,000
June	8,220
July	7,930
August	8,130
September	8,210
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,040
February	1,060
March	1,130
April	1,040
May	1,230
June	1,520
July	1,240
August	1,170
September	1,170
October	-
November	-
December	-
AAWT	-

Month	AWT
January	1,180
February	1,130
March	1,160
April	1,140
May	1,440
June	1,580
July	1,210
August	1,510
September	1,310
October	-
November	-
December	-
AAWT	-

Month	AWT
January	7,810
February	8,180
March	8,430
April	8,210
May	9,030
June	9,320
July	8,170
August	8,560
September	9,090
October	-
November	-
December	-
AAWT	-

NC-540 at NC-55 Bypass Interchange

2017 Average Weekday Traffic

Figure 14

Customer Service Center Operations Statistics

CUSTOMER SERVICE CENTER OPERATIONS STATISTICS

The function of the Customer Service Center (CSC) is to provide customer-facing activities such as account management services, customer calls, and walk-in services. The CSC also provides support services such as a mail room, transponder inventory management and fulfillment, financial/banking, accounting and reconciliation, Bill by Mail document quality control (QC), video image review and processing services, and interoperability/reciprocity management with E-ZPass®, SunPass®, and PeachPass®.

Current and historical Triangle Expressway customer service statistics are collected and reported through the NC Quick Pass® CSC, located in Morrisville, NC. These statistics provide an overview of the current toll operations on the facility and identifies any utilization trends. It also allows for comparison of historical and projected data. Transaction data is collected from the toll zones throughout the facility using all-electronic tolling (AET); toll gantries and the roadside toll vaults house the AET equipment.

Weekly, Monthly, and Year-to-Date (YTD) Statistics

The statistics provided in the following section are representative of the entire Triangle Expressway facility. Weekly, monthly, and/or year-to-date (YTD) statistics are presented in the following datasets:

- Customer Calls by Reason
- Payments Processed
- Walk-in Customers
- Transactions
- Classification
- Accounts
- Transponders

It should be noted that the percentages of the total provided in this section might not sum to 100% due to rounding. In addition, weekly statistics are based on weeks starting Monday and ending Sunday.

Customer Calls by Reason

This section presents the number of calls handled by customer service representatives (CSRs) from the NC Quick Pass® CSC. The number of calls presented in this section are broken down by pre-determined calling reason categories including Bill by Mail Payment, Bill by Mail Inquiry, NC Quick Pass® Inquiry, Registration Hold Inquiry, Registration Hold Removal, Vehicle/Account Information Update, and License Plate Mismatch Dispute. The "Other" category encompasses calling reasons other than the pre-determined categories.

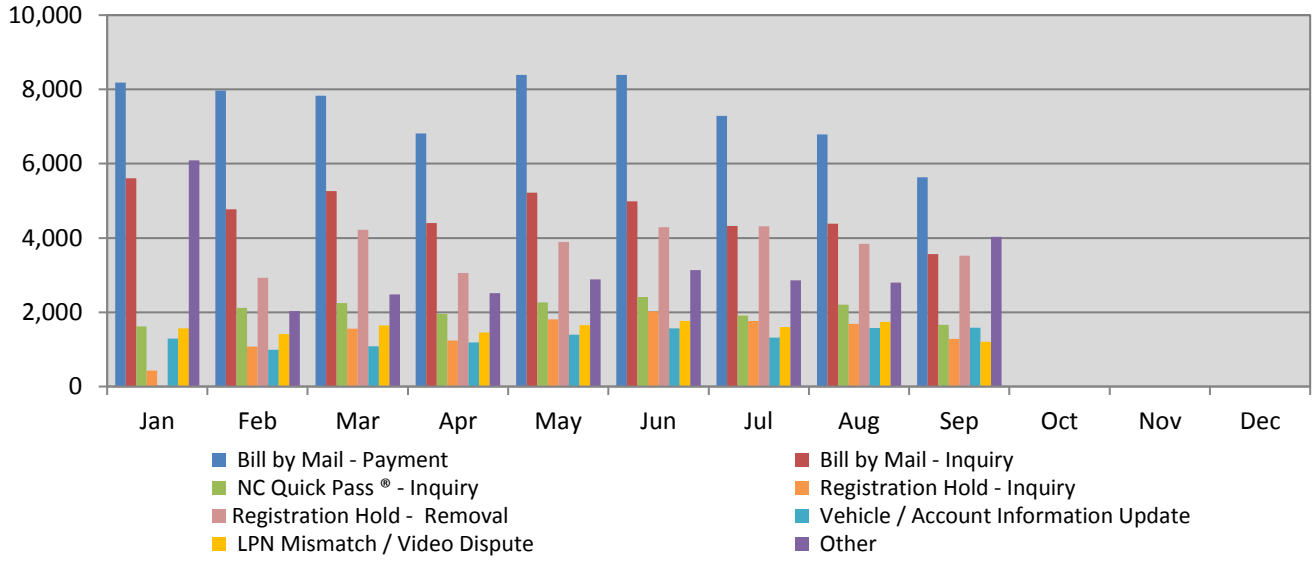
Table 1 presents a summary of the total monthly number of customer calls handled by CSRs, by reason.

Table 1: NC Quick Pass® CSC Calls by Reason, Third Quarter by Month

Month	July	August	September
Bill by Mail - Payment	7,287	6,788	5,633
Bill by Mail - Inquiry	4,324	4,384	3,563
NC Quick Pass® - Inquiry	1,907	2,204	1,663
Registration Hold - Inquiry	1,762	1,690	1,281
Registration Hold - Removal	4,312	3,839	3,522
Vehicle / Account Information Update	1,315	1,576	1,583
License Plate Mismatch Dispute	1,601	1,735	1,202
Other	2,856	2,796	4,029
Total	**25,364**	**25,012**	**22,476**

Figure 15 presents the total monthly number of customer calls handled by CSRs during 2017, by reason.

Figure 15: 2017 NC Quick Pass® CSC Calls by Reason, YTD



Payments Processed

This section presents the volume of payments processed by the NC Quick Pass® CSC by payment channel. Payment channels considered in this section include the Web, Call Center, Mail, Interactive Voice Response (IVR), and Walk-in. The Back Office System (BOS) records payment volume based on the number of different revenue types and invoices paid during a given period. For example, if a Bill by Mail invoice including two tolls and one Processing Fee is paid the BOS counts that as two payments, one for tolls and one for Processing Fee, even though only a single payment was received and processed.

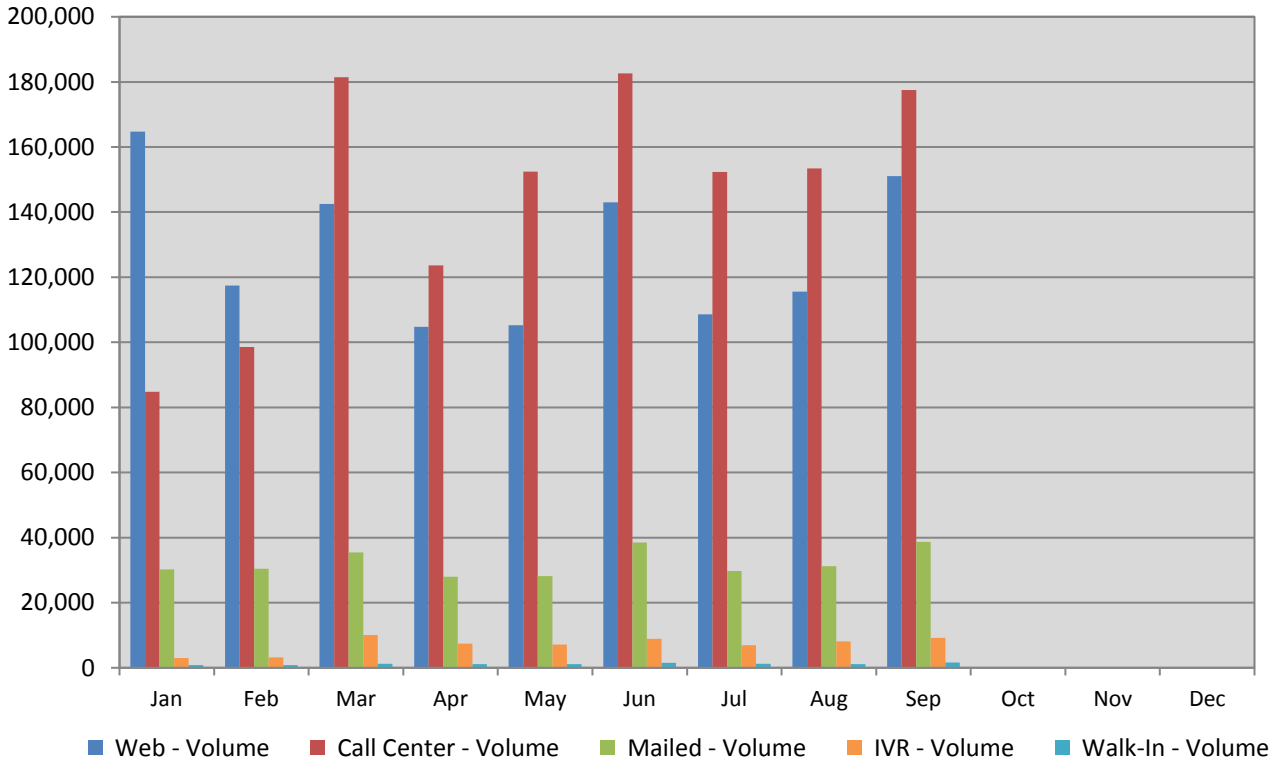
Table 2 presents a summary of the total monthly payments processed by the NC Quick Pass® CSC, by payment channel.

Table 2: NC Quick Pass® CSC Payments Processed, Third Quarter by Month

Month	Web Volume	Call Center Volume	Mailed Volume	IVR Volume	Walk-In Volume	Total
July	108,583	152,332	29,776	6,982	1,218	**298,891**
August	115,576	153,435	31,232	8,151	1,171	**309,565**
September	151,035	177,524	38,726	9,202	1,633	**378,120**

Figure 16 presents the total monthly payments processed by the NC Quick Pass® CSC during 2017, by payment channel.

Figure 16: 2017 NC Quick Pass® CSC Payments Processed by Channel, YTD



Walk-in Customers

This section presents the number of customers who visited the NC Quick Pass® CSC Walk-In Center.

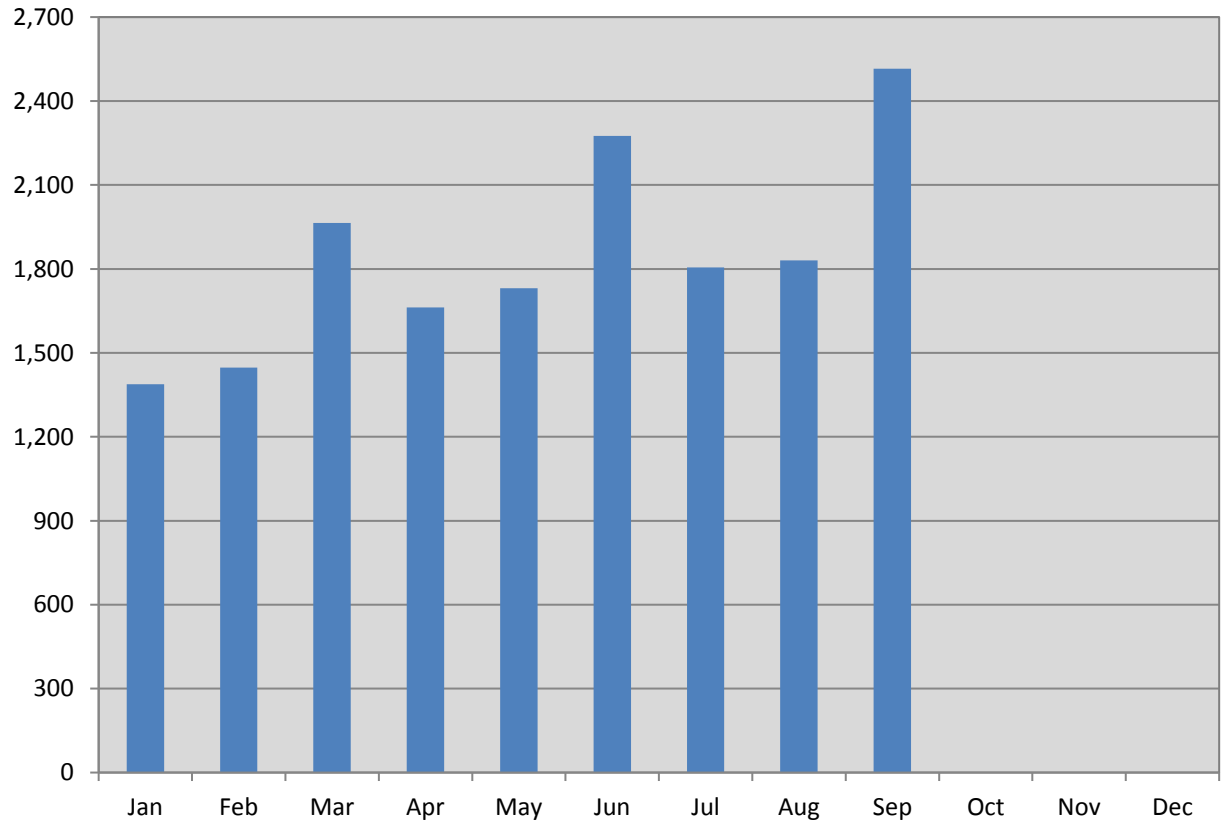
Table 3 presents a summary of the total monthly number of walk-in customers serviced in the NC Quick Pass® CSC Walk-In Center.

Table 3: NC Quick Pass® CSC Walk-In Customers, Third Quarter by Month

Month	Number of Walk-In Customers
July	1,805
August	1,831
September	2,516

Figure 17 depicts the number of walk-in customers that were serviced in the NC Quick Pass® CSC Walk-In Center during 2017.

Figure 17: 2017 NC Quick Pass® CSC Walk-in Customers, YTD



Transactions

This section presents the volume and percentage of North Carolina Quick Pass® (NCQP) users compared to Bill by Mail users. NCQP users have established accounts that are identified using the vehicle's onboard transponder, whereas Bill by Mail users do not have established accounts and are identified using vehicle recognition software.

Table 4 presents a summary of the total weekly transactions for NC Quick Pass® and Bill by Mail users.

Table 4: Transactions, Third Quarter by Week

Week Ending	Transponder (NC Quick Pass®)		Video (Bill by Mail)		Total
	Transactions	% of Total	Transactions	% of Total	
7/2/2017[1]	72,105	50.1%	71,798	49.9%	**143,903**
7/9/2017[2]	436,757	57.2%	327,413	42.8%	**764,170**
7/16/2017	574,902	59.1%	398,678	40.9%	**973,580**
7/23/2017	571,486	58.9%	398,483	41.1%	**969,969**
7/30/2017	576,670	59.0%	400,758	41.0%	**977,428**
8/6/2017	572,214	59.0%	398,078	41.0%	**970,292**
8/13/2017	574,177	59.2%	395,868	40.8%	**970,045**
8/20/2017	589,281	59.1%	407,907	40.9%	**997,188**
8/27/2017	567,734	57.4%	420,928	42.6%	**988,662**
9/3/2017[3]	544,624	57.0%	411,623	43.0%	**956,247**
9/10/2017	507,304	56.2%	395,589	43.8%	**902,893**
9/17/2017	576,926	58.8%	404,631	41.2%	**981,557**
9/24/2017	586,923	57.6%	431,551	42.4%	**1,018,474**
9/30/2017[4]	555,714	58.4%	396,009	41.6%	**951,723**

[1] Week ending consists of two days of data
[2] Week ending includes Independence Day
[3] Week ending includes Labor Day
[4] Week ending consists of six days of data

Table 5 presents a summary of the total monthly transactions for NC Quick Pass® and Bill by Mail users.

Table 5: Transactions, Third Quarter by Month

Month	Transponder (NC Quick Pass®)		Video (Bill by Mail)		Total
	Transactions	% of Total	Transactions	% of Total	
July	2,328,302	58.4%	1,657,095	41.6%	**3,985,397**
August	2,594,393	58.5%	1,840,529	41.5%	**4,434,922**
September	2,384,122	57.5%	1,761,690	42.5%	**4,145,812**

Figure 18 presents the total monthly transactions and NC Quick Pass® utilization during 2017.

Figure 18: 2017 Transactions, YTD

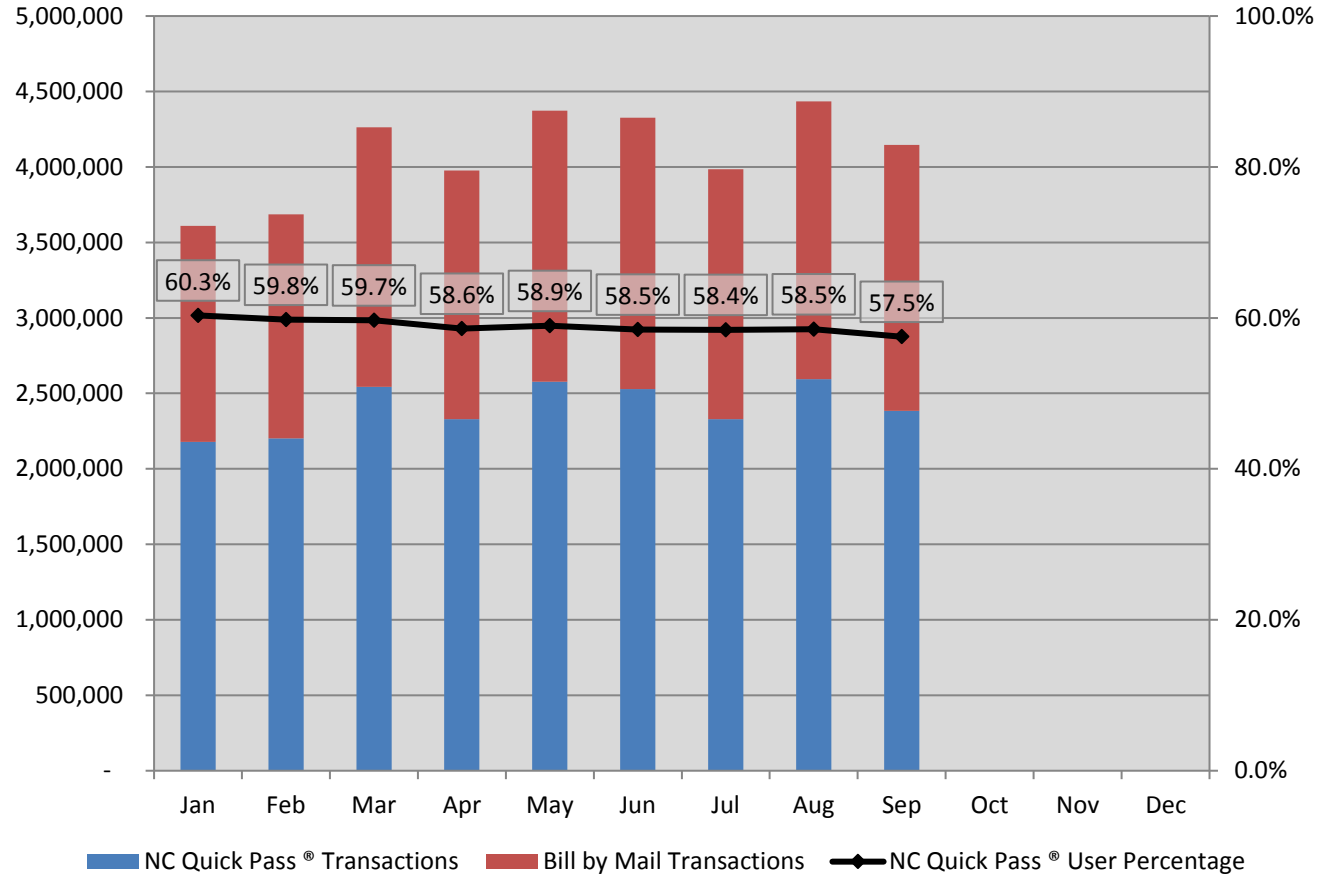


Table 6 presents a summary of the total NC Quick Pass® and Bill by Mail transactions, by year. Project to date is the total number of transactions since opening the facility to toll traffic.

Table 6: Transactions, by Year

Year	Transponder (NC Quick Pass®)		Video (Bill by Mail)		Total
	Transactions	% of Total	Transactions	% of Total	
2012	2,803,043	49.2%	2,892,496	50.8%	5,695,539
2013	13,249,972	57.5%	9,792,975	42.5%	23,042,947
2014	17,733,089	58.1%	12,802,237	41.9%	30,535,326
2015	22,083,270	57.6%	16,235,360	42.4%	38,318,630
2016	26,360,672	58.3%	18,883,195	41.7%	45,243,867
2017[1]	21,666,205	58.9%	15,133,324	41.1%	36,799,529
Project to Date	**103,896,251**	**57.8%**	**75,739,587**	**42.2%**	**179,635,838**

[1]2017 transactions reported include nine months of data (January – September).

Classification

This section presents the volume and percentage of users based on classification. The classification system used by NCTA includes three classes, determined by the vehicle's number of axles.

Table 7 presents a summary of the total weekly transactions for Class 1 (2-axle), Class 2 (3-axle), and Class 3 (4+axle) vehicles.

Table 7: Classification, Third Quarter by Week

Week Ending	Class 1 (2-axle)		Class 2 (3-axle)		Class 3 (4+axle)	
	Transactions	% of Total	Transactions	% of Total	Transactions	% of Total
7/2/2017[1]	140,957	98.0%	1,224	0.9%	1,722	1.2%
7/9/2017[2]	733,960	96.0%	10,002	1.3%	20,208	2.6%
7/16/2017	935,377	96.1%	11,980	1.2%	26,223	2.7%
7/23/2017	931,643	96.0%	12,177	1.3%	26,149	2.7%
7/30/2017	938,613	96.0%	12,653	1.3%	26,162	2.7%
8/6/2017	932,270	96.1%	12,086	1.2%	25,936	2.7%
8/13/2017	934,609	96.3%	11,254	1.2%	24,182	2.5%
8/20/2017	958,637	96.1%	12,436	1.2%	26,115	2.6%
8/27/2017	950,381	96.1%	12,467	1.3%	25,814	2.6%
9/3/2017[3]	920,803	96.3%	11,290	1.2%	24,154	2.5%
9/10/2017	868,364	96.2%	10,826	1.2%	23,703	2.6%
9/17/2017	948,501	96.6%	9,811	1.0%	23,245	2.4%
9/24/2017	978,941	96.1%	11,900	1.2%	27,633	2.7%
9/30/2017[4]	912,985	95.9%	12,584	1.3%	26,154	2.7%

[1] Week ending consists of two days of data
[2] Week ending includes Independence Day
[3] Week ending includes Labor Day
[4] Week ending consists of six days of data

Table 8 presents a summary of the total monthly transactions by classification.

Table 8: Classification, Third Quarter by Month

Month	Class 1 (2-axle)		Class 2 (3-axle)		Class 3 (4+axle)	
	Transactions	% of Total	Transactions	% of Total	Transactions	% of Total
July	3,830,283	96.1%	50,071	1.3%	105,043	2.6%
August	4,263,001	96.1%	55,058	1.2%	116,863	2.6%
September	3,992,757	96.3%	47,561	1.1%	105,494	2.5%

Figure 19 presents the total monthly percentage of transactions during 2017 for Class 1 (2-axle), Class 2 (3-axle), and Class 3 (4+axle) vehicles.

Figure 19: 2017 Classification, Percentage YTD

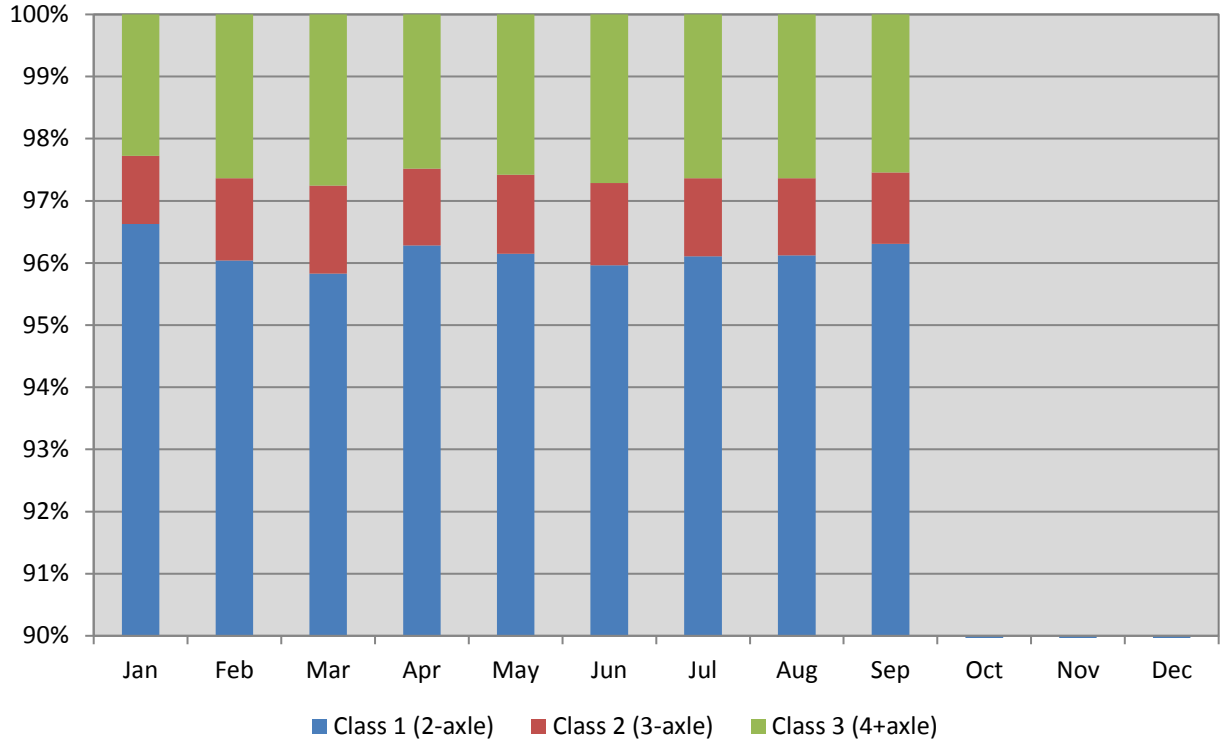


Table 9 presents a summary of the total transactions for Class 1 (2-axle), Class 2 (3-axle), and Class 3 (4+axle) vehicles, by year. Project to date is the total number of transactions since opening the facility to toll traffic.

Table 9: Classification, by Year

Year	Class 1 (2-axle)		Class 2 (3-axle)		Class 3 (4+axle)	
	Transactions	% of Total	Transactions	% of Total	Transactions	% of Total
2012	5,562,061	97.7%	46,935	0.8%	86,543	1.5%
2013	22,282,351	96.7%	267,558	1.2%	493,038	2.1%
2014	29,530,077	96.7%	355,721	1.2%	649,528	2.1%
2015	37,050,375	96.7%	426,656	1.1%	841,599	2.2%
2016	43,567,844	96.3%	566,221	1.3%	1,109,803	2.5%
2017[1]	35,383,070	96.2%	463,579	1.3%	952,880	2.6%
Project to Date	**173,375,778**	**96.5%**	**2,126,670**	**1.2%**	**4,133,391**	**2.3%**

[1]2017 transactions reported include nine months of data (January – September).

Accounts

The statistics provided in this section outline the volume of accounts established and managed by the NC Quick Pass® CSC.

Table 10 presents a summary of the monthly established accounts being managed by the NC Quick Pass® CSC. Numbers presented in parentheses represent a reduction in accounts.

Table 10: Established Accounts, Third Quarter by Month

Month	NC Quick Pass®	Bill by Mail	Registered Video	Non-Revenue	Government	Total
July	2,750	31,855	0	1	0	**34,606**
August	2,717	32,824	2	0	0	**35,543**
September	4,391	28,355	0	0	0	**32,746**

Figure 20 presents the monthly established accounts managed by the NC Quick Pass® CSC during 2017. The "Other" category includes registered video, non-revenue, and government accounts.

Figure 20: 2017 Established Accounts, YTD

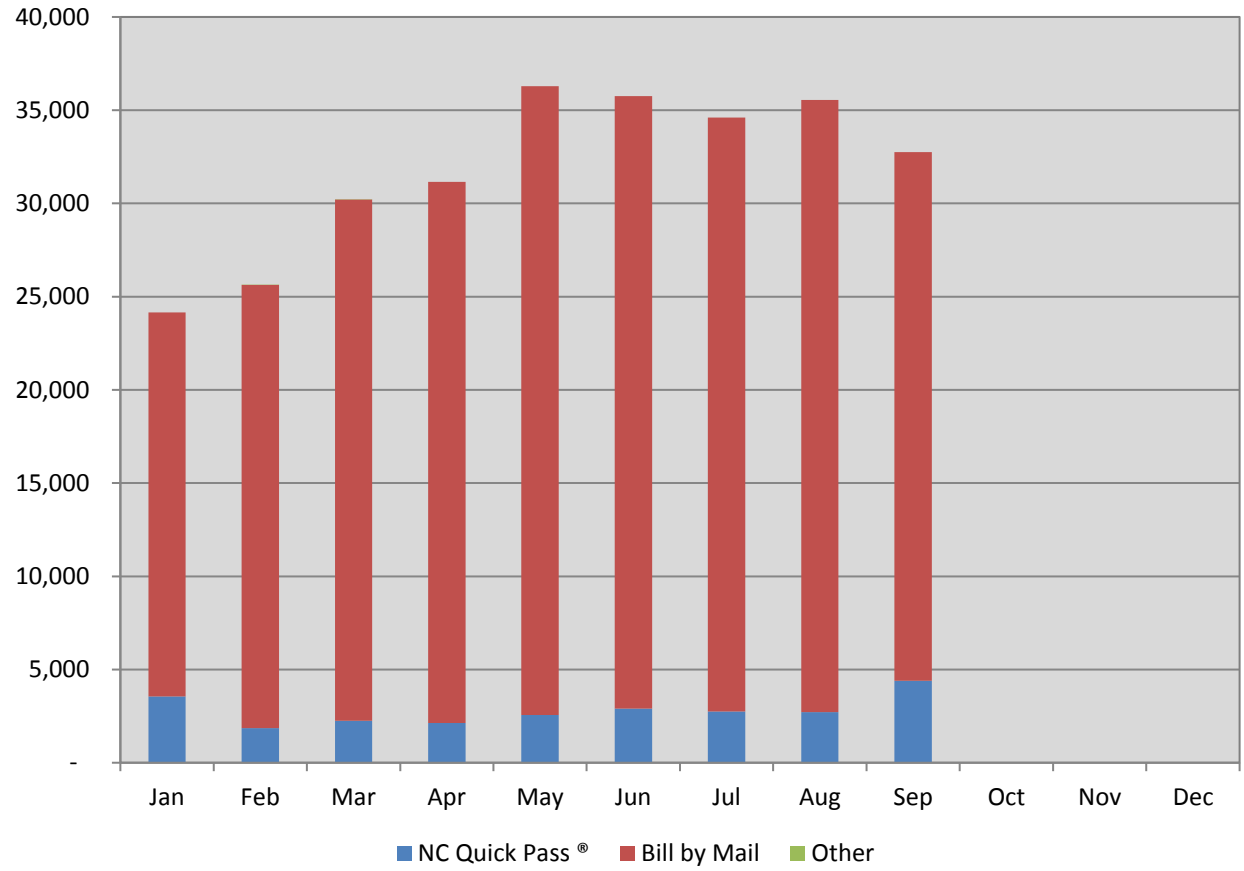


Table 11 presents a summary of the total established accounts managed by the NC Quick Pass® CSC, by year. Project to date is the total number of accounts established since project opening. Numbers presented in parentheses represent a reduction in accounts.

Table 11: Established Accounts, by Year

Year	NC Quick Pass®	Bill by Mail	Registered Video	Non-Revenue	Government	Total
2012	27,179	359,431	5	38	18	386,671
2013	24,268	306,581	(1)	19	9	330,876
2014	18,652	342,476	2	13	3	361,146
2015	24,222	380,897	0	4	0	405,123
2016	31,358	348,654	1	4	0	380,017
2017[1]	25,129	260,947	3	4	(1)	286,082
Project to Date	**150,808**	**1,998,986**	**10**	**82**	**29**	**2,149,915**

[1]2017 established accounts reported include nine months of data (January – September).

Transponders

This section presents the volume of transponders sold. It should be noted that on August 30th, 2017 transponder prices were reduced. Sticker Transponders are now free and Hard Case Transponders are now $7.40 plus tax.

Table 12 presents a summary of the total transponders sold, by month.

Table 12: Transponders Sold, Third Quarter by Month

Month	Sticker Transponder	Hard Case Transponder	Exterior Transponder	Total
July	2,561	3,251	77	**5,889**
August	2,319	2,944	68	**5,331**
September	6,083	4,500	46	**10,629**

Figure 21 presents monthly transponders sold during 2017.

Figure 21: 2017 Transponders Sold, YTD

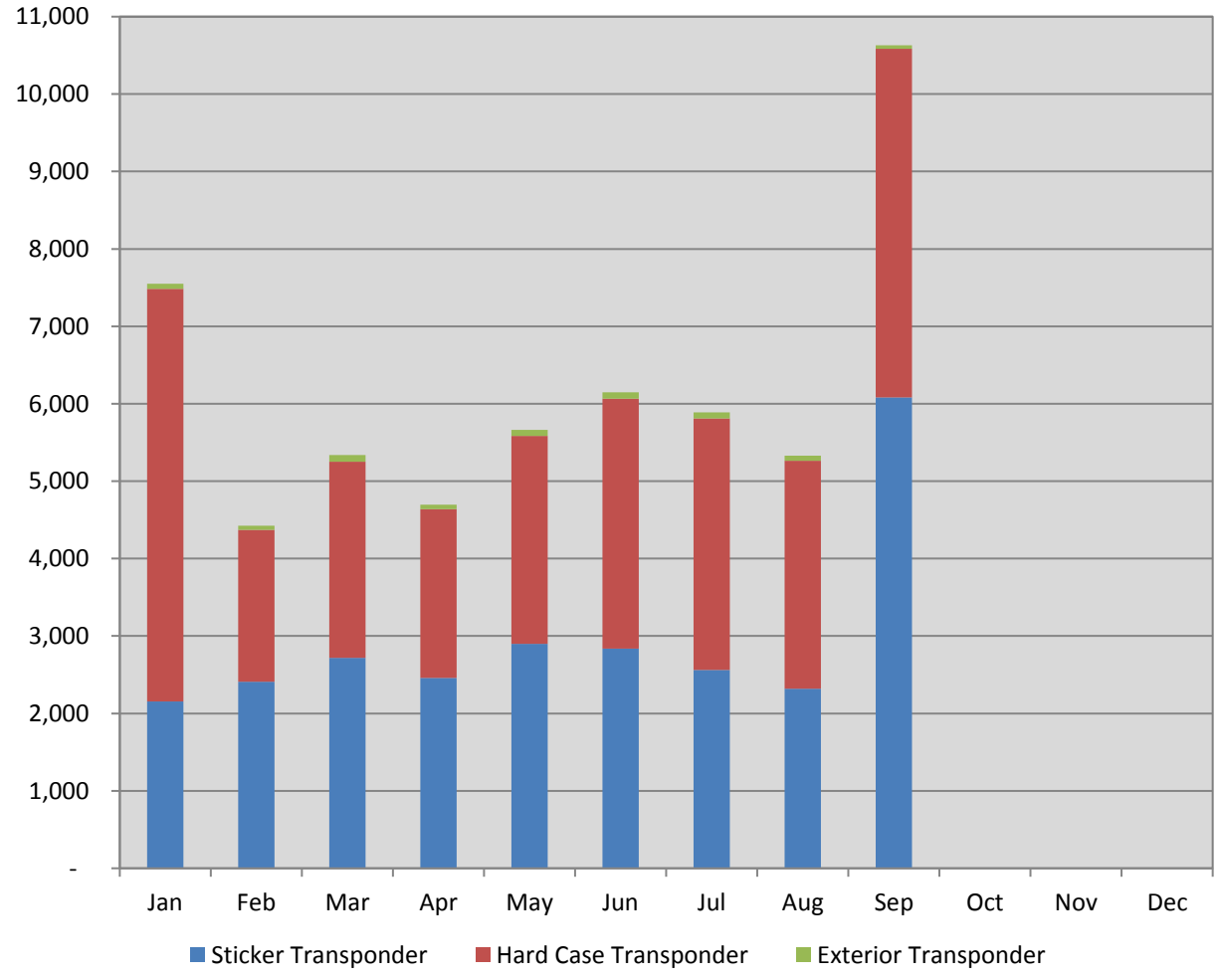


Table 13 presents a summary of the total transponders sold, by year. In October 2011, transponders went on sale prior to the opening of the roadway to provide potential motorists sufficient time to establish their accounts. Project to date is the total number of transponders sold to date.

Table 13: Transponders Sold, by Year

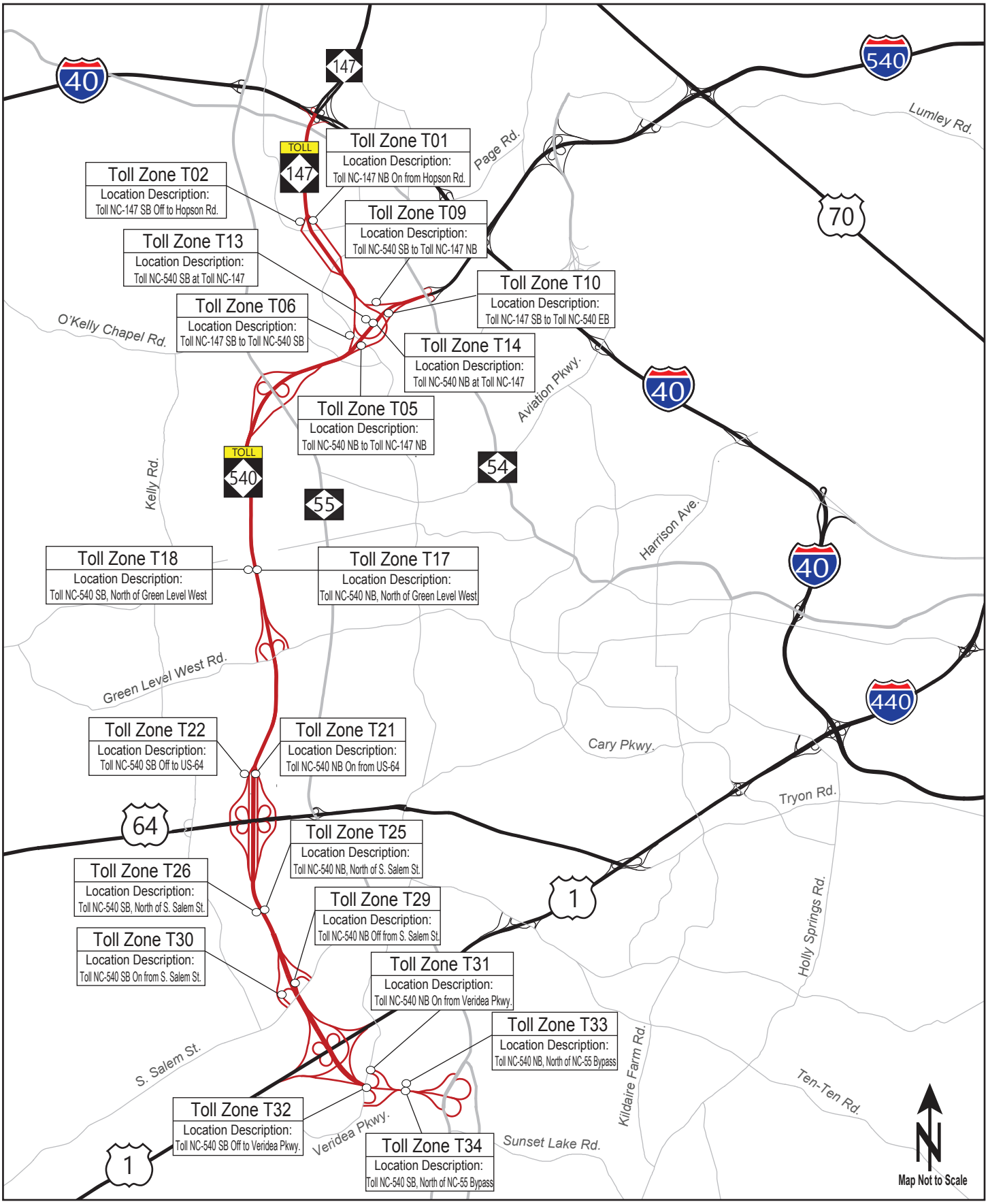
Year	Sticker Transponder	Hard Case Transponder	Exterior Transponder	Total
2011	7,315	2,806	200	10,321
2012	35,338	6,861	250	42,449
2013	34,784	13,980	257	49,021
2014	26,066	14,778	221	41,065
2015	31,866	20,047	588	52,501
2016	29,287	36,969	822	67,078
2017[1]	26,442	28,611	615	55,668
Project to Date	**191,098**	**124,052**	**2,953**	**318,103**

[1]2017 transponders sold reported include nine months of data (January – September).

Toll Zone Statistics

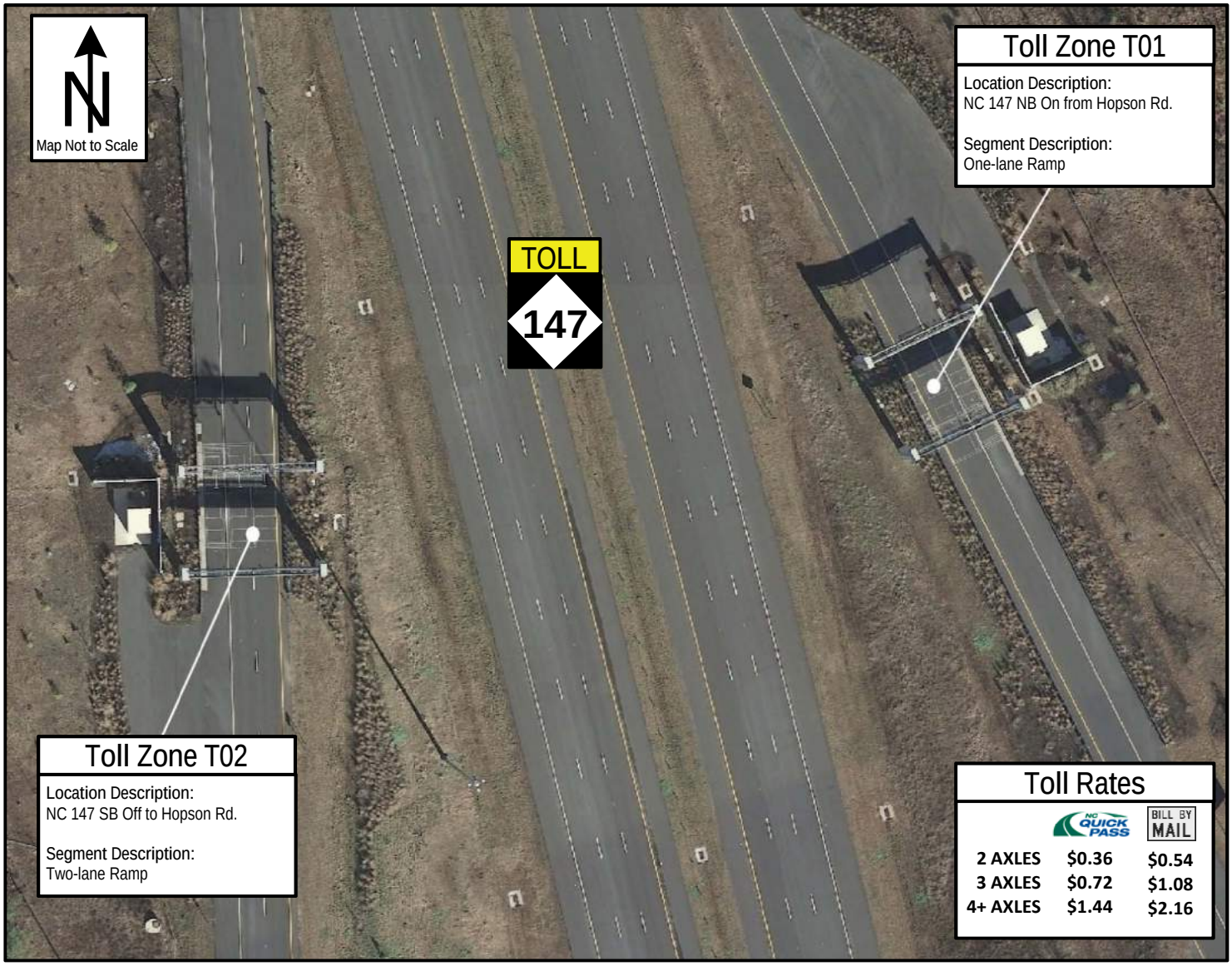
TOLL ZONE STATISTICS

The location of the toll zones along the Triangle Expressway can be seen in *Figure 22*. *Fi*gures *23 - 32* present the average weekday transactions (excludes holidays and days of inclement weather conditions) recorded at toll zones along the facility.



Triangle Expressway Toll Zone Map

Figure 22



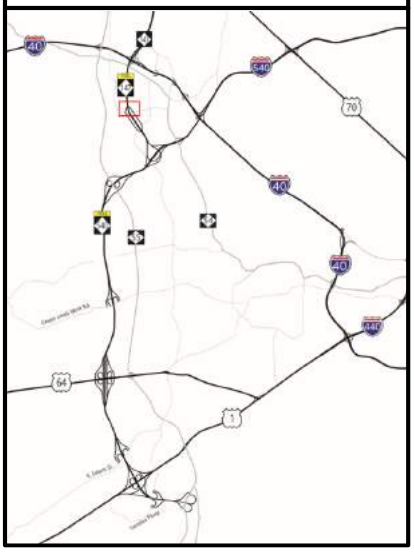
Transactions by Direction

Month	T01	T02
January	2,640	2,460
February	2,700	2,510
March	2,710	2,520
April	2,780	2,590
May	2,830	2,630
June	2,870	2,630
July	2,770	2,570
August	2,810	2,620
September	2,780	2,550
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T01	T02
January	61%	63%
February	62%	63%
March	61%	62%
April	60%	61%
May	60%	61%
June	59%	60%
July	60%	60%
August	58%	58%
September	59%	60%
October	-	-
November	-	-
December	-	-

Map Locator



Hopson Road Ramp Toll Zones

2017 Average Weekday Toll Transactions

Figure 23

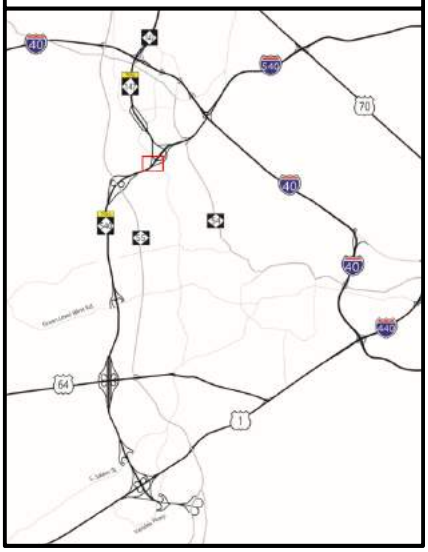
Transactions by Direction

Month	T05	T06
January	7,370	7,360
February	7,500	7,450
March	7,600	7,470
April	7,690	7,600
May	7,870	7,830
June	7,900	7,950
July	7,680	7,710
August	7,880	7,860
September	7,890	7,930
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T05	T06
January	62%	64%
February	62%	64%
March	62%	64%
April	62%	63%
May	62%	63%
June	61%	62%
July	61%	62%
August	60%	61%
September	60%	61%
October	-	-
November	-	-
December	-	-

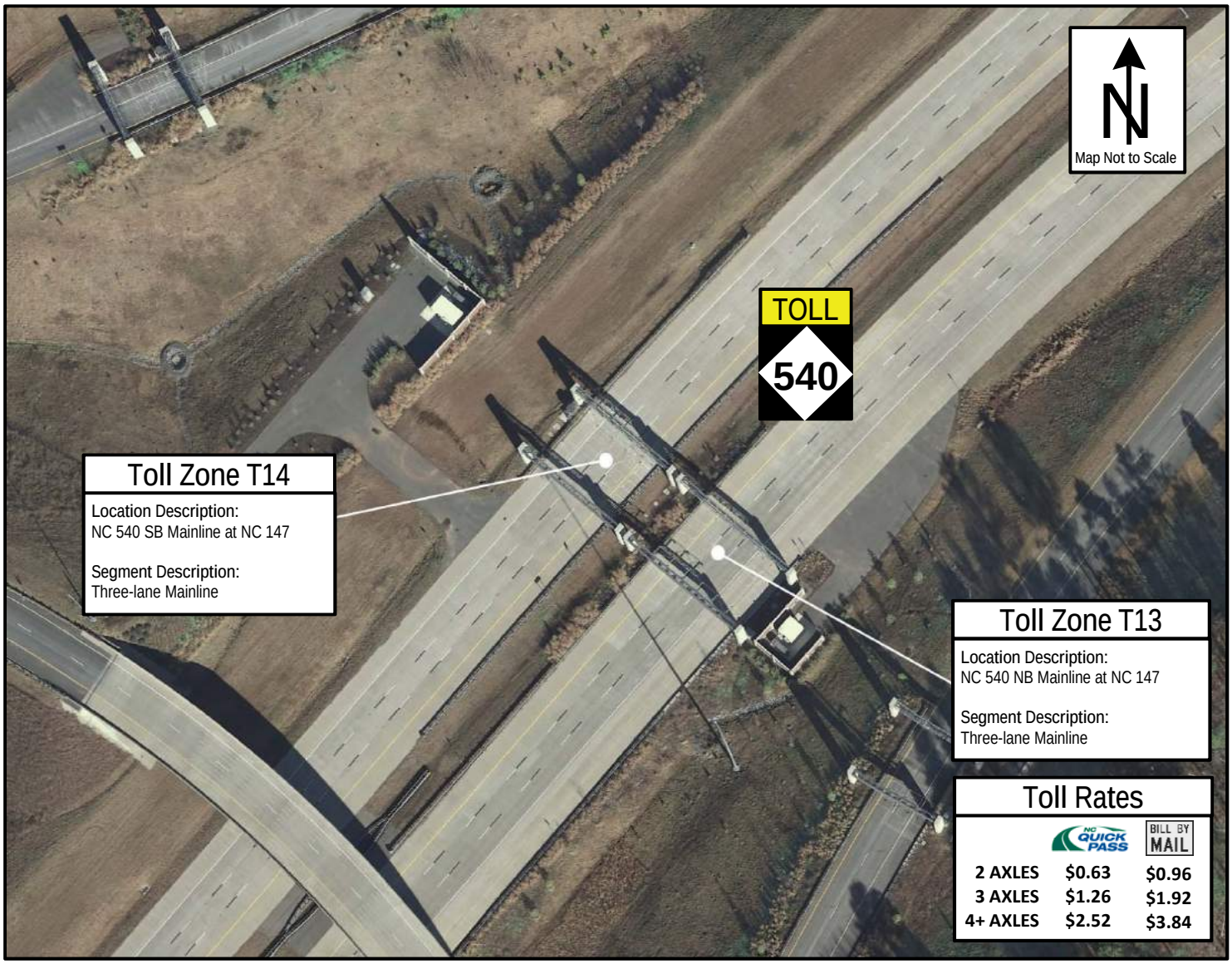
Map Locator



NC-147 South Ramp Toll Zones

2017 Average Weekday Toll Transactions

Figure 24



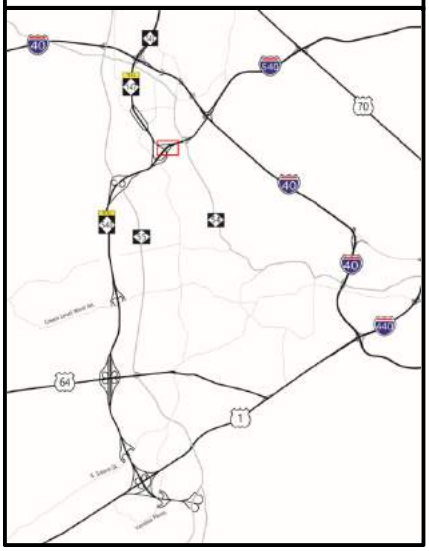
Transactions by Direction

Month	T13	T14
January	15,800	15,510
February	16,310	16,110
March	16,650	16,470
April	16,610	16,160
May	17,290	16,960
June	17,320	16,810
July	16,580	16,170
August	16,980	16,670
September	17,080	16,920
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T13	T14
January	61%	63%
February	59%	62%
March	60%	61%
April	60%	61%
May	60%	61%
June	59%	61%
July	59%	61%
August	59%	61%
September	58%	60%
October	-	-
November	-	-
December	-	-

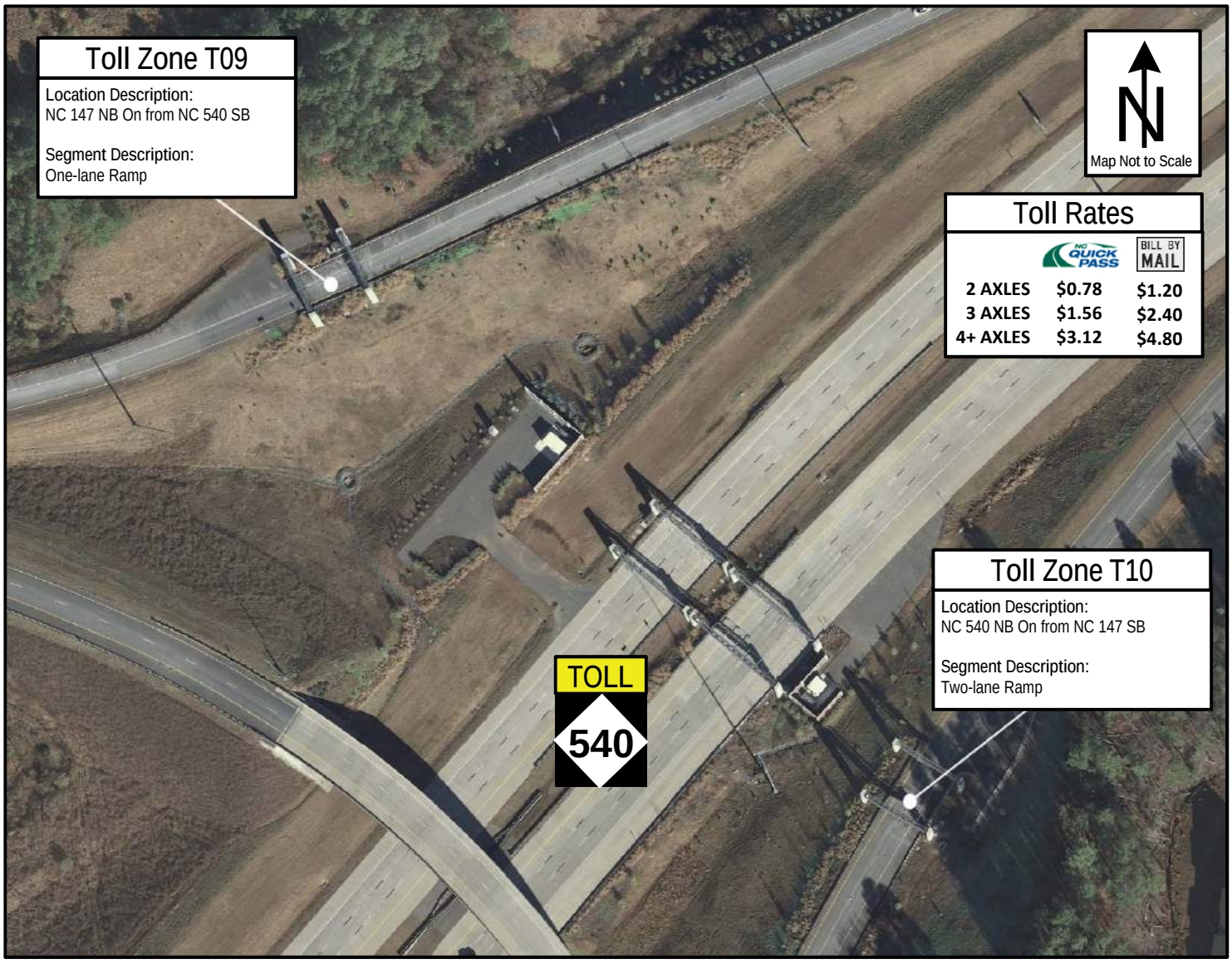
Map Locator



NC-540 Morrisville Mainline Toll Zones

2017 Average Weekday Toll Transactions

Figure 25



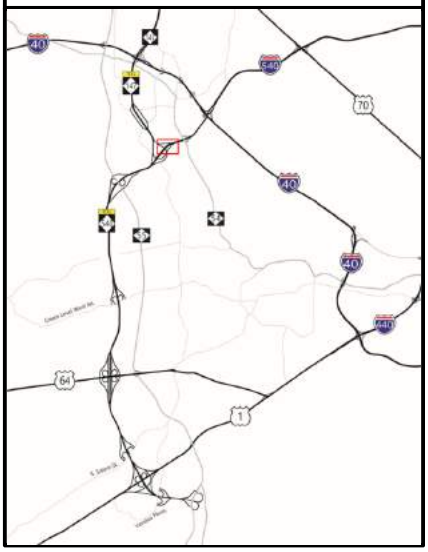
Transactions by Direction

Month	T09	T10
January	2,430	3,140
February	2,440	2,930
March	2,450	2,930
April	2,530	3,030
May	2,640	3,150
June	2,640	3,100
July	2,540	3,140
August	2,550	3,040
September	2,500	3,010
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T09	T10
January	57%	58%
February	58%	61%
March	58%	60%
April	57%	59%
May	55%	57%
June	56%	57%
July	57%	57%
August	57%	59%
September	57%	60%
October	-	-
November	-	-
December	-	-

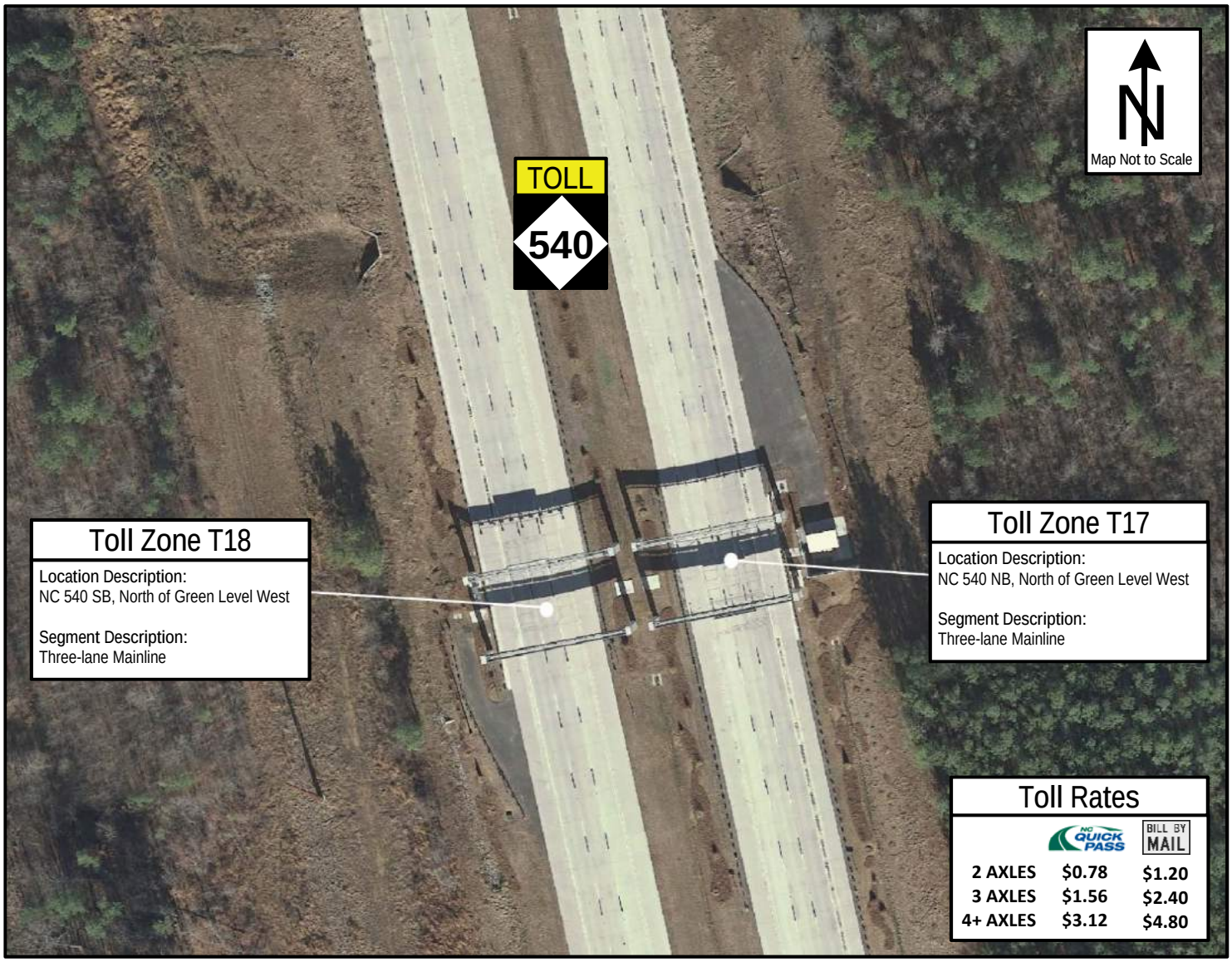
Map Locator



NC-147 North Ramp Toll Zones

2017 Average Weekday Toll Transactions

Figure 26



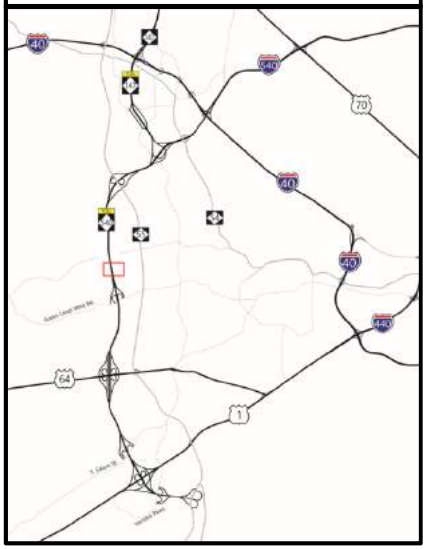
Transactions by Direction

Month	T17	T18
January	16,760	17,820
February	17,230	18,130
March	17,670	18,420
April	17,780	18,750
May	18,200	19,320
June	18,360	19,570
July	17,850	19,000
August	18,360	19,260
September	18,530	19,490
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T17	T18
January	62%	62%
February	60%	62%
March	60%	61%
April	61%	60%
May	61%	60%
June	60%	59%
July	60%	60%
August	59%	58%
September	60%	60%
October	-	-
November	-	-
December	-	-

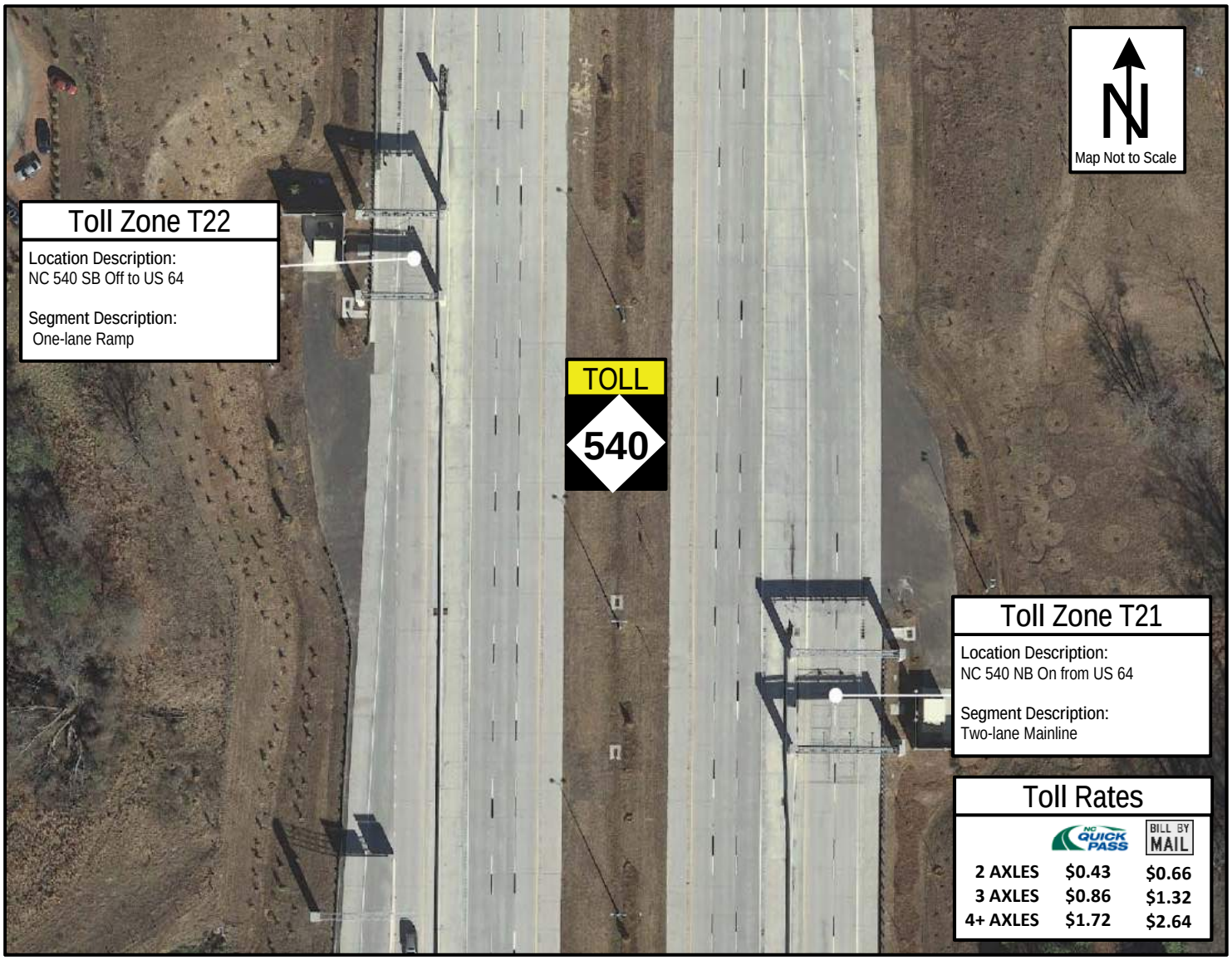
Map Locator



NC-540 Cary Mainline Toll Zones

2017 Average Weekday Toll Transactions

Figure 27



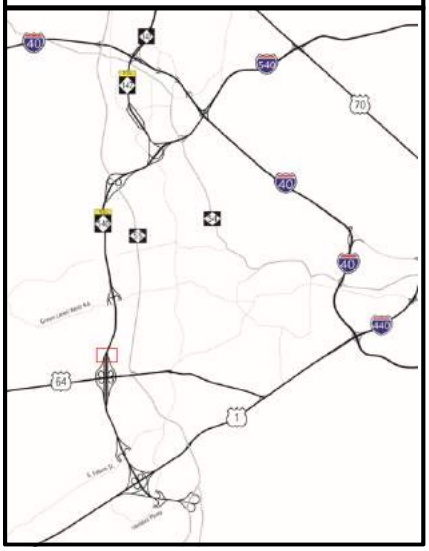
Transactions by Direction

Month	T21	T22
January	5,150	5,420
February	5,370	5,660
March	5,480	5,750
April	5,540	5,850
May	5,680	6,020
June	5,670	6,040
July	5,520	5,860
August	5,650	6,000
September	5,710	6,040
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T21	T22
January	62%	63%
February	62%	63%
March	61%	62%
April	61%	61%
May	61%	60%
June	61%	61%
July	61%	62%
August	62%	62%
September	63%	54%
October	-	-
November	-	-
December	-	-

Map Locator



US-64 Ramp Toll Zones

2017 Average Weekday Toll Transactions

Figure 28

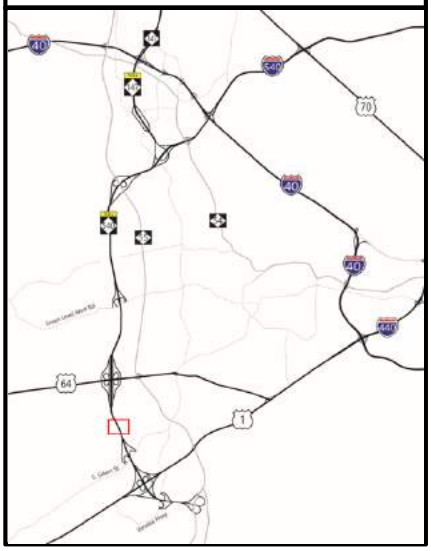
Transactions by Direction

Month	T25	T26
January	13,850	14,100
February	14,330	14,440
March	14,750	14,710
April	14,910	14,940
May	15,360	15,500
June	15,660	15,880
July	15,050	15,310
August	15,570	15,500
September	15,780	15,730
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T25	T26
January	61%	60%
February	60%	59%
March	60%	59%
April	60%	58%
May	59%	58%
June	58%	58%
July	59%	58%
August	58%	59%
September	59%	56%
October	-	-
November	-	-
December	-	-

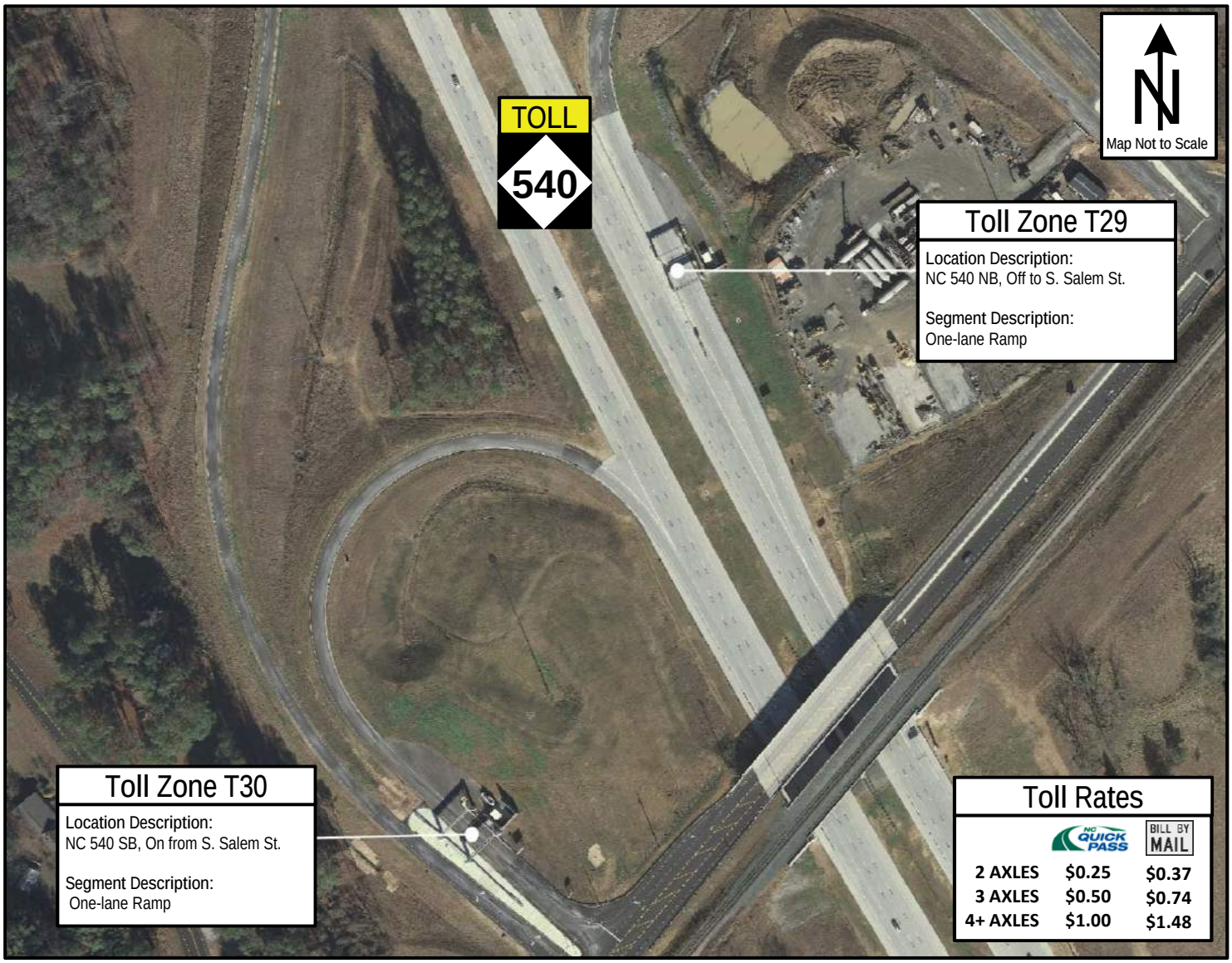
Map Locator



NC-540 Apex Mainline Toll Zones

2017 Average Weekday Toll Transactions

Figure 29



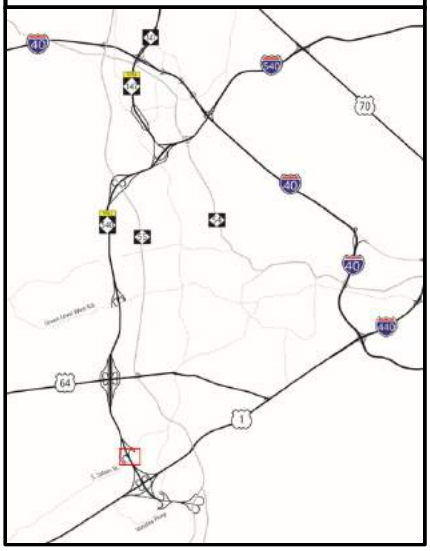
Transactions by Direction

Month	T29	T30
January	1,590	1,650
February	1,660	1,750
March	1,740	1,800
April	1,670	1,770
May	1,800	1,890
June	1,610	1,770
July	1,480	1,660
August	1,640	1,770
September	1,850	1,960
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T29	T30
January	67%	69%
February	67%	69%
March	66%	68%
April	66%	69%
May	67%	69%
June	65%	68%
July	65%	69%
August	66%	69%
September	68%	69%
October	-	-
November	-	-
December	-	-

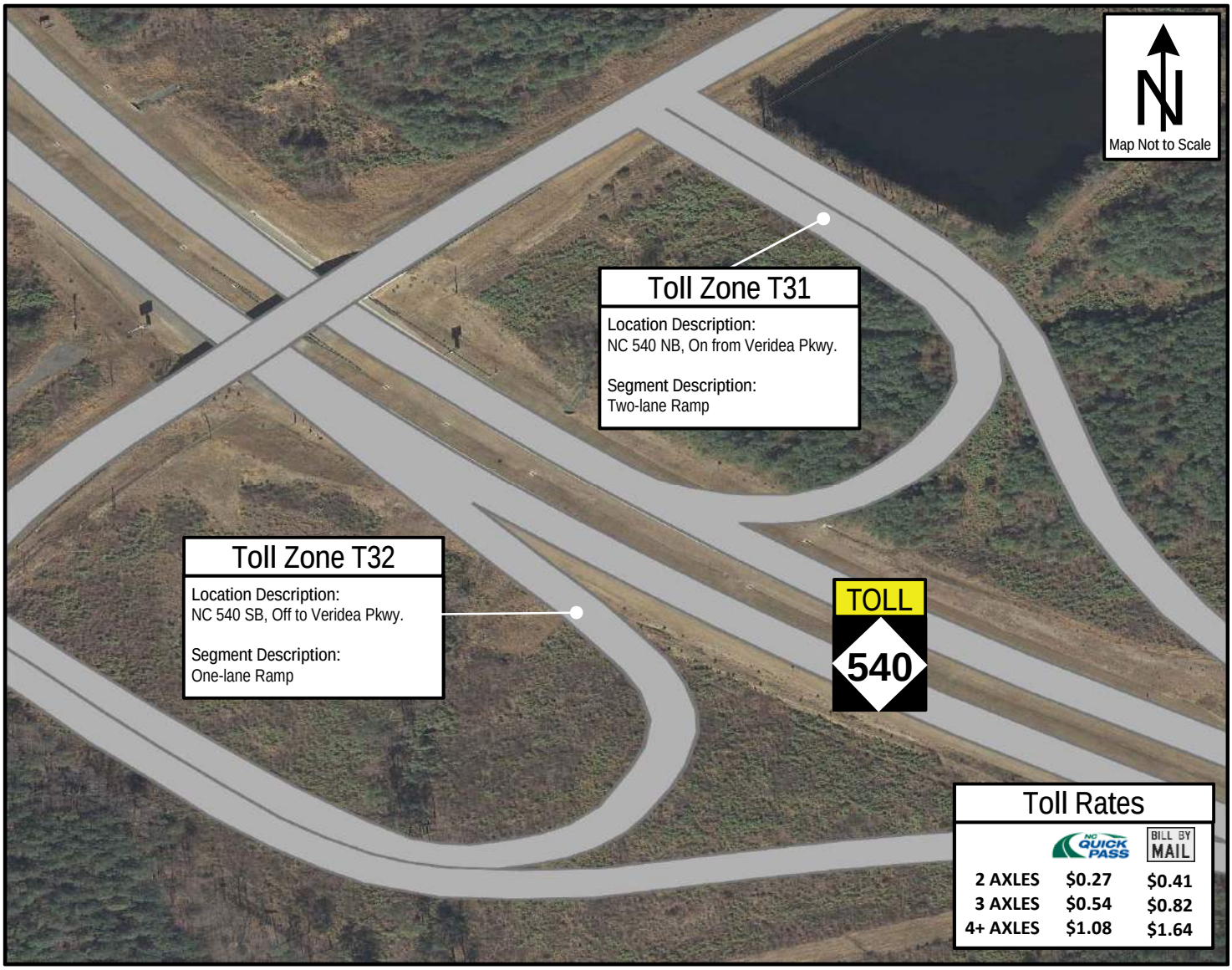
Map Locator



South Salem Street Ramp Toll Zones

2017 Average Weekday Toll Transactions

Figure 30



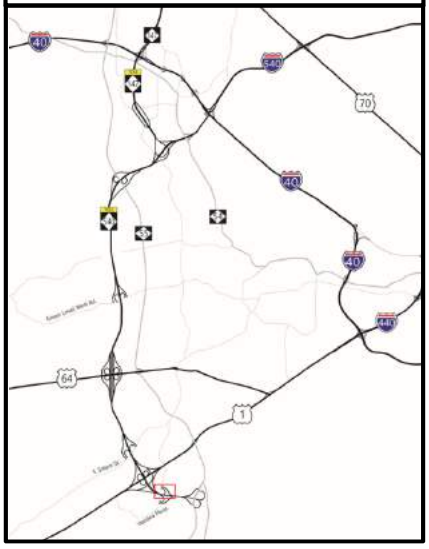
Transactions by Direction

Month	T31	T32
January	N/A	N/A
February	N/A	N/A
March	N/A	N/A
April	380	550
May	530	720
June	630	780
July	690	800
August	810	950
September	860	920
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T31	T32
January	N/A	N/A
February	N/A	N/A
March	N/A	N/A
April	53%	69%
May	40%	67%
June	43%	67%
July	67%	69%
August	68%	68%
September	71%	72%
October	-	-
November	-	-
December	-	-

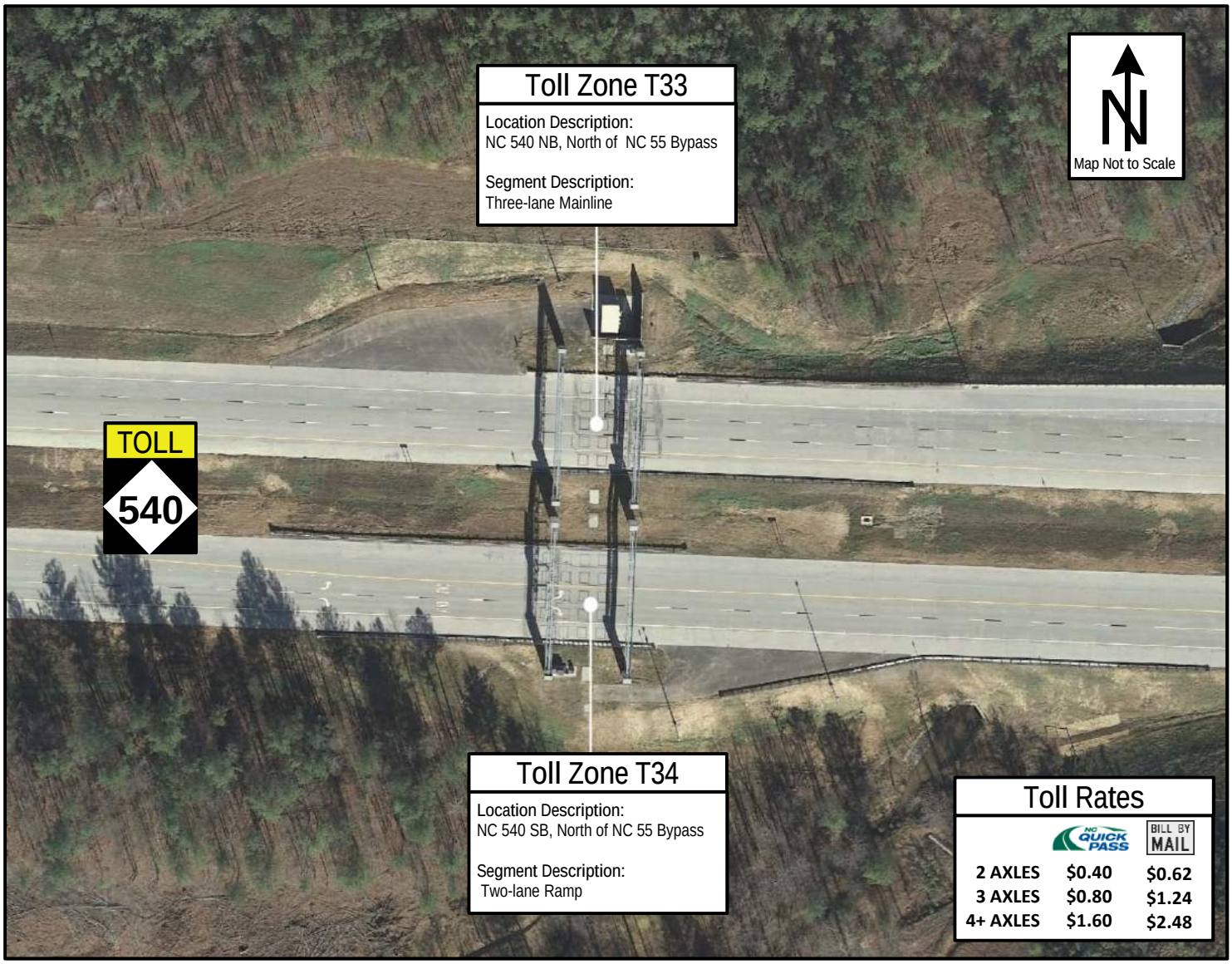
Map Locator



Toll NC 540 Ramps at Veridea Parkway

2017 Average Weekday Toll Transactions

Figure 31



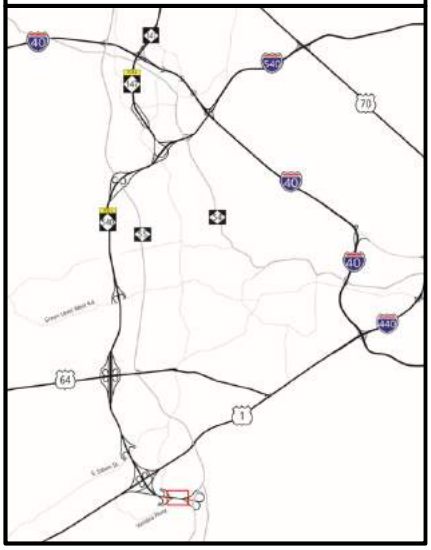
Transactions by Direction

Month	T33	T34
January	9,000	8,910
February	9,310	9,090
March	9,690	9,390
April	9,500	9,210
May	9,760	9,360
June	9,740	9,530
July	9,310	9,200
August	9,670	9,300
September	9,860	9,460
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage

Month	T33	T34
January	64%	63%
February	64%	63%
March	63%	63%
April	62%	62%
May	63%	62%
June	61%	61%
July	63%	61%
August	58%	62%
September	52%	59%
October	-	-
November	-	-
December	-	-

Map Locator



NC-540 Holly Springs Mainline Toll Zones

2017 Average Weekday Toll Transactions

Figure 32

Roadway Safety Statistics

ROADWAY SAFETY STATISTICS

Traffic crashes are often related to deficiencies in the safety and capacity characteristics of a transportation facility. In an effort to identify these deficiencies early, and therefore reduce the likelihood of crashes on the Triangle Expressway, NCTA monitors safety conditions on the facility through quarterly crash analyses. These analyses involve the use of the Traffic Engineering Accident Analysis System (TEAAS) to collect monthly crash data along the facility, separated into four (4) segments:

- NC-147, from I-40 to NC-540
- NC-540, from I-40 to NC-55
- NC-540, from NC-55 to US-64
- NC-540, from US-64 to NC-55 Bypass

The data collected includes total crashes and the number of fatal and injury crashes reported along each segment. This data is analyzed over a rolling three-year period to determine the Total Crash Rate of each of the four segments selected, as well as for the entire facility. These crash rates can then be compared to the Critical Crash Rates.

Total Crash Rates are a function of the length of roadway, average daily traffic, and number of reported crashes along a route during a specific time frame. These rates are expressed in crashes per 100 million vehicle miles traveled (MVMT). In the crash analysis conducted during the third quarter, the Total Crash Rates of the four segments selected and the entire facility were calculated based on the roadway segment length, the average annual daily traffic (AADT) and the number of crashes recorded from September 2014 through August 2017 for each segment. The AADT used for this quarter analysis was collected from the NCDOT 2015 Wake County AADT Map. The Statewide Crash Rate (97.32 crashes per 100 MVMT) used for comparison purposes in this analysis was collected from the 2013-2015 NCDOT Statewide Total Crash Rates for freeway facilities, as the Triangle Expressway operates more similar to a freeway or interstate than a state route.

Critical Crash Rates are crash rates that have been statistically adjusted with a 95% level of confidence to remove the element of chance and randomness. They are used as a reference to determine if the Total Crash Rate, at a particular location, is significantly higher than a predetermined average rate for locations with similar characteristics.

Table 14 provides a summary of the crash data collected and the results of the third quarter analysis.

Table 14: Safety Statistics, September 2014 - August 2017

Segment	Length	AADT [1]	Total Crashes	Vehicle Exposure (MVMT)	Total Crash Rate	Statewide Crash Rate [2]	Critical Crash Rate
NC 147 I 40 to NC 540	3.1	13,000	40	44.22	90.46	97.32	99.77
NC 540 I 40 to NC 55	2.8	31,500	58	96.41	60.16	97.32	98.98
NC 540 NC 55 to US 64	6.7	23,600	77	172.60	44.61	97.32	98.56
NC 540 US 64 to NC 55 Bypass	5.9	17,400	56	111.67	50.15	97.32	98.86
Triangle Expressway	**18.4**	**21,100**	**231**	**426.08**	**54.22**	**97.32**	**98.11**

[1] AADT provided from NCDOT 2015 AADT Maps, Wake County
[2] Statewide Crash Rate for Interstate Facilities Applied

Roadway Operations Statistics

ROADWAY OPERATIONS STATISTICS

Highly trained NCTA operators monitor and manage traffic operations and coordinate incident response and maintenance/construction work along the Triangle Expressway. These operators work at the Traffic Management Center (TMC) located in the North Carolina National Guard's Joint Force Headquarters in Raleigh. They are responsible for monitoring the facility 24 hours a day, 7 days a week, and 365 days a year using closed-circuit TV (CCTV) cameras, microwave vehicle detectors (MVD), toll zone security cameras, and a Roadway Weather Information System (RWIS). Additionally, they monitor roadside toll technology and toll facilities.

Operators can communicate travel conditions and emergencies to customers via 10 full-color Dynamic Message Signs (DMS), NCDOT's 511 system, and NCDOT's Traveler Information Management System (TIMS) website. They can also quickly dispatch toll technology technicians to address equipment failures via the Maintenance Online Management Software (MOMS). Additionally, in the event of incidents on the facility, they can use interoperable 800MHz radio frequency dispatch from local 911 and statewide Highway Patrol communications to dispatch State Highway Patrol (SHP) and Incident Management Assistance Patrol (IMAP).

The NCTA Toll Safety Patrol program consists of dedicated SHP and IMAP services provided on the Triangle Expressway. This program provides one SHP officer and one IMAP responder to the facility during working hours, Monday through Friday. During this time, the assigned SHP officer and IMAP driver are responsible for patrolling the facility and responding to incidents reported by operators.

This section presents operations statistics reported by SHP and IMAP during the third quarter of 2017. It includes driver violations and warnings issued by SHP and total IMAP assistance recorded, as well as average monthly IMAP response and clearance time.

Table 15 and *Table 16* present SHP operation statistics during 2017. "Chargeable Activities" are SHP activities involving fines. It should be noted that the "Other Violations" category includes chargeable activities such as load and equipment violations, driver's license violations, vehicle registration violations, and littering.

Table 15: SHP Chargeable Activities

Chargeable Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Speed Violations	50	67	60	63	91	84	70	54	50				**589**
Alcohol Violations	0	0	0	0	0	0	0	0	1				**1**
Seat Belt Violations	1	6	23	15	6	10	2	6	7				**76**
Child Restraint Violations	0	0	0	0	0	0	0	0	0				**0**
Reckless Driving	4	1	2	1	11	6	5	0	4				**34**
Drug Violations	0	0	0	1	0	0	0	0	0				**1**
Obstructed Plates	0	0	0	0	0	1	7	19	4				**31**
Other Violations	36	27	37	49	57	37	28	42	28				**341**
Total Charges	**91**	**101**	**122**	**129**	**165**	**138**	**112**	**121**	**94**				**1,073**

Table 16: SHP Non-Chargeable Activities

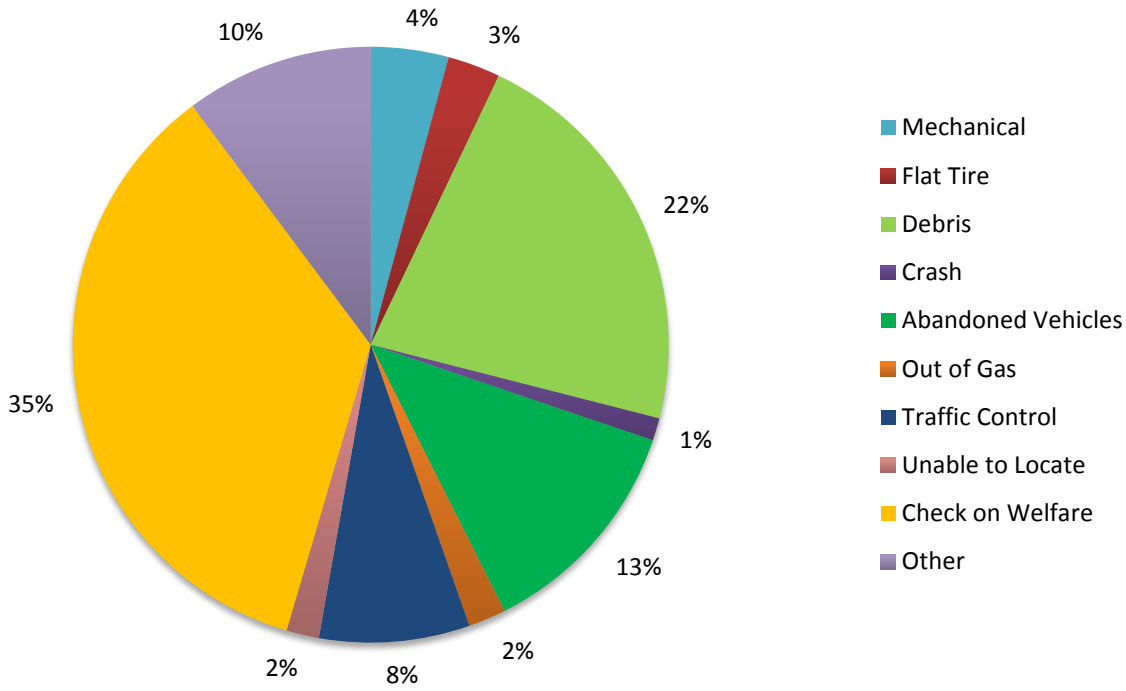
Non-Chargeable Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Warnings	52	78	48	25	48	23	84	102	74				**534**
Vehicles Towed	0	0	0	0	0	2	0	2	3				**7**
Crashes Investigated	6	8	5	4	10	5	3	4	7				**52**
Total	**58**	**86**	**53**	**29**	**58**	**30**	**87**	**108**	**84**				**593**

The IMAP assists with stranded motorists and incident clearance, thereby maintaining the flow of traffic along the roadway. *Table 17* and *Figure 33* present the monthly breakdown of IMAP assists, by type, for the Triangle Expressway during 2017. The "other" category includes the reporting categories of assist other unit, secured load, called for assistance, directions, and transported motorist.

Table 17: IMAP Assistance

Assist Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Mechanical	9	0	4	0	1	1	2	9	5				**31**
Flat Tire	1	2	0	2	0	0	3	9	4				**21**
Debris	15	14	20	15	18	18	23	22	16				**161**
Crash	1	0	0	0	0	0	2	3	3				**9**
Abandoned Vehicles	14	8	11	9	9	9	7	20	4				**91**
Out of Gas	1	0	0	2	3	3	0	3	3				**15**
Traffic Control	0	2	7	4	7	7	5	7	21				**60**
Unable to Locate	1	1	0	2	0	0	4	3	2				**13**
Check on Welfare	49	38	33	24	28	19	27	27	14				**259**
Other	9	15	14	22	7	8	0	0	0				**75**
Total Assist	**100**	**80**	**89**	**80**	**73**	**65**	**73**	**103**	**72**				**735**

Figure 33: 2017 IMAP Assistance by Type, YTD



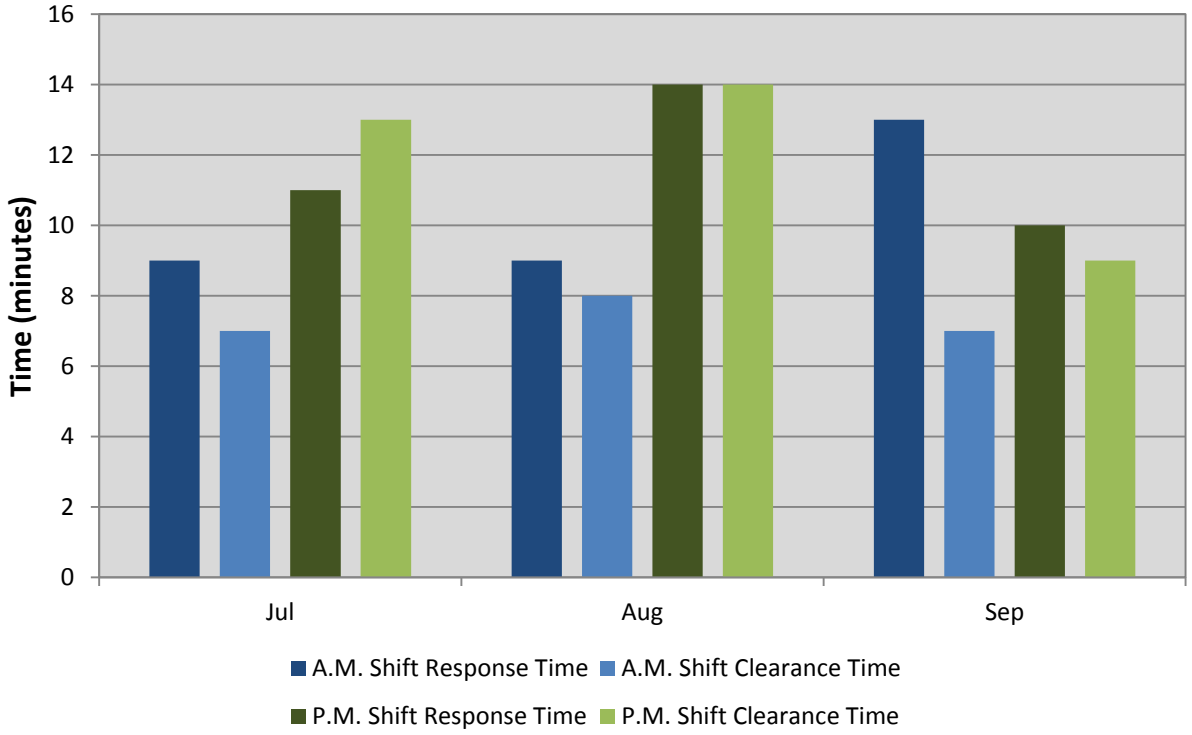
The response and clearance times for all IMAP assists are logged by IMAP and provided to the NCTA. Response time is the time from which a responder receives a call to the time they arrive on the scene. Clearance time is the time it takes the responder to clear the incident and return the roadway to normal operation. The IMAP staff's A.M. shift occurs from 6AM to 2PM, while the P.M. shift occurs from 2PM to 10PM. Shift response times may differ due to the number of drivers on duty and their coverage areas.

Table 18 and *Figure 34* present the average IMAP assistance response and clearance times, in minutes, for the Triangle Expressway.

Table 18: Average IMAP Assistance Response and Clearance Times (in Minutes)

Response Type	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	2017 Average
A.M. Shift Response	10	10	9	13	10	9	9	9	13				**10**
A.M. Shift Clearance	8	8	8	6	8	6	7	8	7				**7**
P.M. Shift Response	9	9	10	8	9	6	11	14	10				**10**
P.M. Shift Clearance	6	8	10	10	8	8	13	14	9				**10**

Figure 34: Average IMAP Assistance Response and Clearance Times (in Minutes)



Roadway Maintenance Statistics

ROADWAY MAINTENANCE STATISTICS

This section outlines the NCTA Maintenance Rating Program (MRP), which is a maintenance evaluation program for roadway features and toll facilities. MRP is a comprehensive planning, measuring, and managing process that provides a means for communicating to managers, stakeholders, and key customers the impacts of policy and budget decisions on program service delivery.

Using outcome-based performance measures and the service level scale (0 through 100), the inspection results are rated against established threshold criteria. The program analysis is accomplished through the use of sampling procedures that capture the level of service being provided for individual asset features. Over time, these ratings will then be charted to identify work needs and subsequent necessary actions. The evaluations are based on the establishment of threshold conditions that quantify the maximum defect allowed to exist for a characteristic before it is considered unacceptable. The NCTA performance standards, threshold criteria, and Maintenance Rating Program were developed through a collaborative effort by NCTA managers, NCDOT maintenance staff, and consultants.

Using field survey information, a maintenance matrix can be developed to show the ties between maintenance activities and the characteristics of various roadway features. The purpose of this evaluation is to provide information that will be used to schedule and prioritize routine maintenance activities and provide uniform maintenance conditions that meet established objectives.

Assessment Schedule

As part of the NCTA MRP, a “baseline” assessment is scheduled for each newly opened roadway section soon after opening to toll collection. The baseline assessments include a complete inventory data collection and assessment on 100% of the roadway assets. With the recent opening of the Veridea Parkway interchange, a baseline assessment of the interchange area has been scheduled to be completed by December 2017.

After the baseline assessment is completed, future assessments for that segment switch over to a statistical sampling assessment. Inspections are performed during the months of February, May, August, and November to account for dynamic seasonal changes to assets. These inspections are accomplished through the use of statistically valid, random sampling procedures that capture the level of service for individual assets with a 95% confidence level in sampling.

Assessment Results

Table 19 presents the 2017 quarterly and annual MRP Assessment rating. It is important to note that the Quarterly Ratings are only representative of the samples inspected during each quarter. Therefore, they are not a statistically valid representation of the assets' conditions; only the annual rating will provide a 95% confidence level in statistical sampling.

Table 19: MRP Assessment Results

Element	Q1 2017 Rating	Q2 2017 Rating	Q3 2017 Rating	Q4 2017 Rating	2017 Annual Rating
Road Surface	97.8	100.0	98.1	N/A	N/A
Unpaved Shoulders and Ditches	95.6	95.5	100.0	N/A	N/A
Drainage	86.7	92.3	83.2	N/A	N/A
Roadside	90.3	87.4	90.4	N/A	N/A
Traffic Control Devices	91.4	88.5	85.2	N/A	N/A
Overall MRP Performance Rating	**92.7**	**92.7**	**90.9**	**N/A**	**N/A**

N/A (Not Applicable) – MRP Assessment has not been conducted yet.