NORTH CAROLINA
Turnpike Authority

Operations Statistics Report

Triangle Expressway

2016 Fourth Quarter Report

October - December

1 S. Wilmington Street
Raleigh, NC 27601

Last Updated:
January 27, 2017

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INTRODUCTION

Purpose

The North Carolina Turnpike Authority (NCTA) presents the operations statistics for the Triangle Expressway during the year 2016. 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

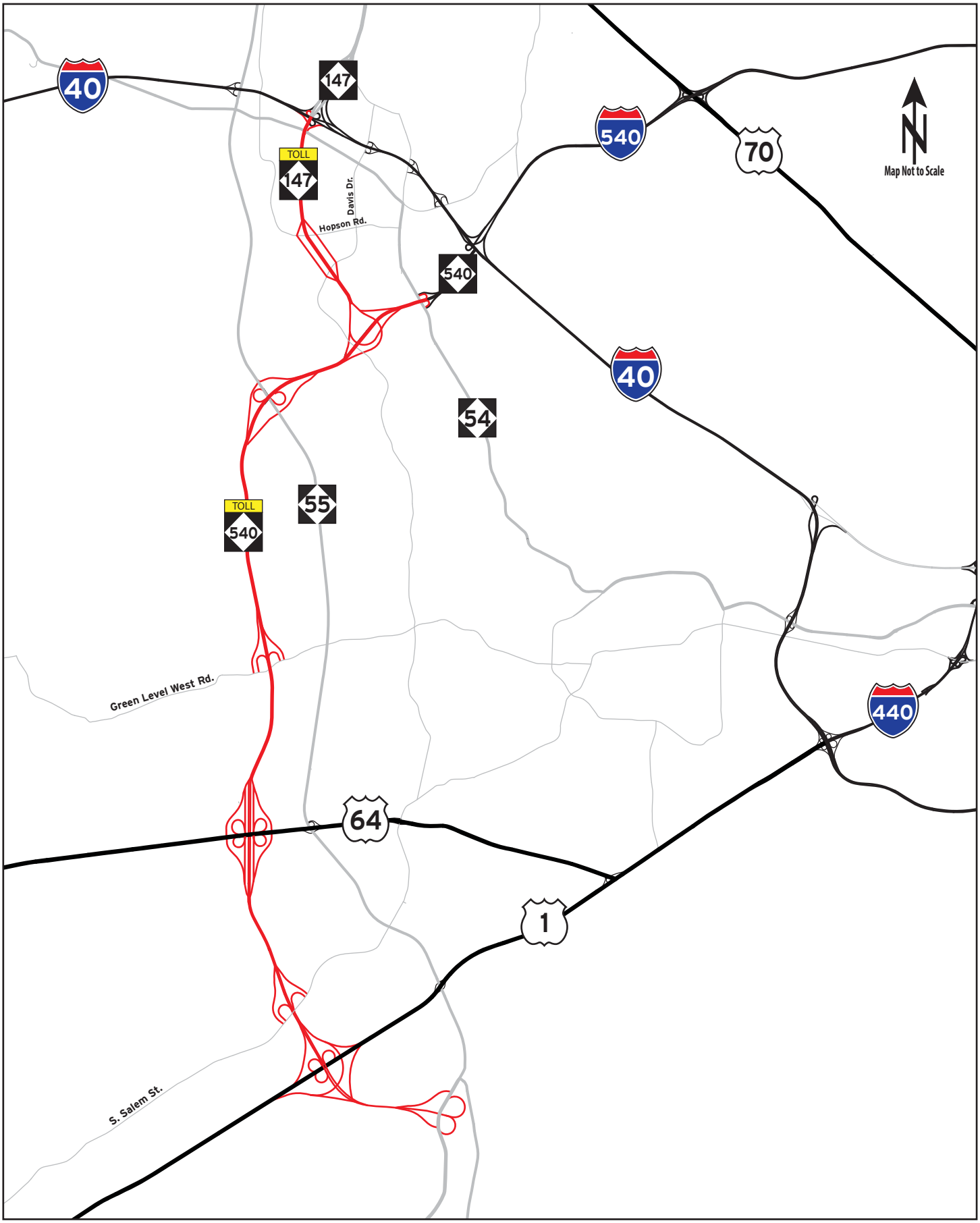
The Triangle Expressway is an 18.8-mile toll road that extends the partially complete "Outer Loop" around the greater Raleigh, North Carolina area from I-40 to NC-55 Bypass. The six-lane, controlled-access toll facility relieves congestion on NC-55, while improving access to the Research Triangle Park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

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

Toll 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 includes interchanges at NC-54, NC-55, Green Level West Road, and US-64 and opened to toll-free traffic on August 1, 2012. Tolling on this section began on August 2, 2012. The section from US-64 to NC-55 Bypass includes interchanges at S. Salem St., US-1, and NC-55 Bypass and opened to toll-free traffic on December 20, 2012. Tolling on this section began on January 2, 2013.

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 (MVD's) 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.

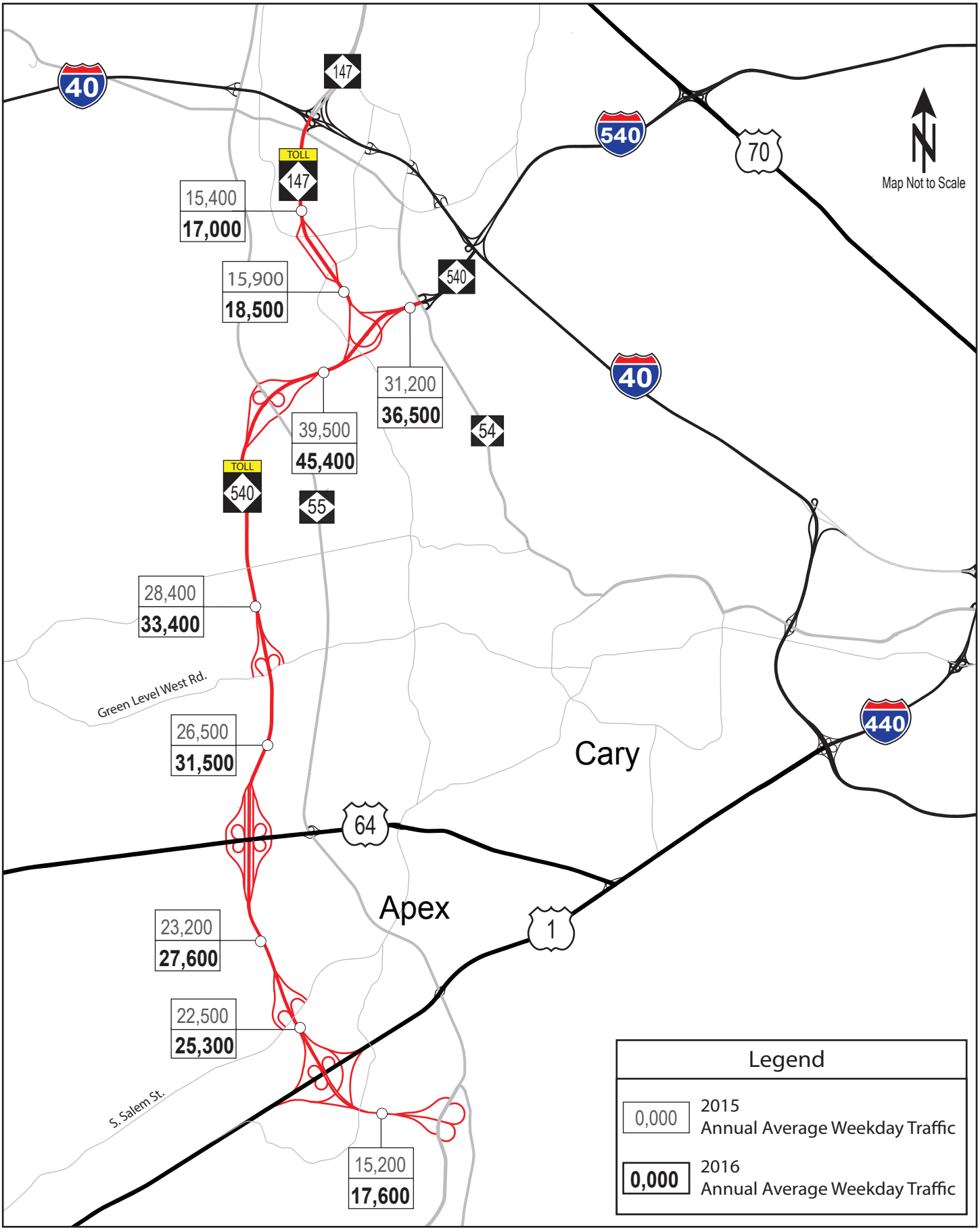
Average Weekday Traffic (AWT)

Traffic volume data is collected on 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.

Annual Average Weekday Traffic (AAWT)

AAWT is a measure of the average daily volumes collected on a typical Monday through Friday over an entire year. Adjustment factors for raw AWT data were calculated monthly, based on the ratio of weekday to weekend traffic, and applied to the monthly averages to calculate the annual average weekday traffic. It is necessary to normalize the variations in monthly traffic to allow for a valid comparison between counts taken at different times of the year. This allows the normalized monthly values to be combined together to form a single AAWT for each location.

Figure 2 contains a visual representation of AAWT recorded during the years 2015 and 2016 at all mainline segments along the Triangle Expressway.

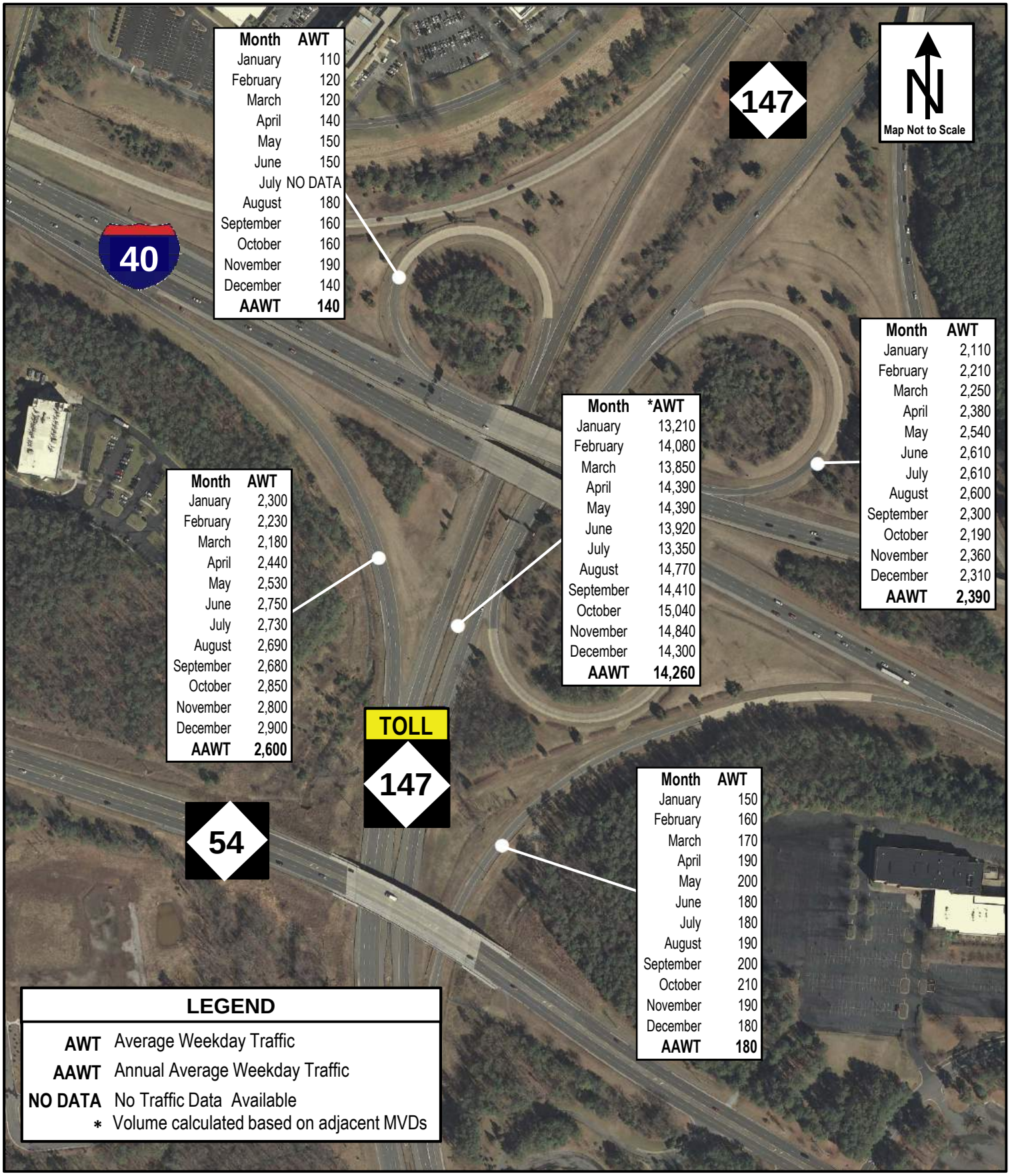


Triangle Expressway AAWT Map

Figure 2

Interchange Statistics

Figures 3 to *13* contain visual representations of AWT and AAWT along the facility which are representative of NCTA's 2016 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.



Month	AWT
January	110
February	120
March	120
April	140
May	150
June	150
July	NO DATA
August	180
September	160
October	160
November	190
December	140
AAWT	**140**

Month	AWT
January	2,110
February	2,210
March	2,250
April	2,380
May	2,540
June	2,610
July	2,610
August	2,600
September	2,300
October	2,190
November	2,360
December	2,310
AAWT	**2,390**

Month	*AWT
January	13,210
February	14,080
March	13,850
April	14,390
May	14,390
June	13,920
July	13,350
August	14,770
September	14,410
October	15,040
November	14,840
December	14,300
AAWT	**14,260**

Month	AWT
January	2,300
February	2,230
March	2,180
April	2,440
May	2,530
June	2,750
July	2,730
August	2,690
September	2,680
October	2,850
November	2,800
December	2,900
AAWT	**2,600**

Month	AWT
January	150
February	160
March	170
April	190
May	200
June	180
July	180
August	190
September	200
October	210
November	190
December	180
AAWT	**180**

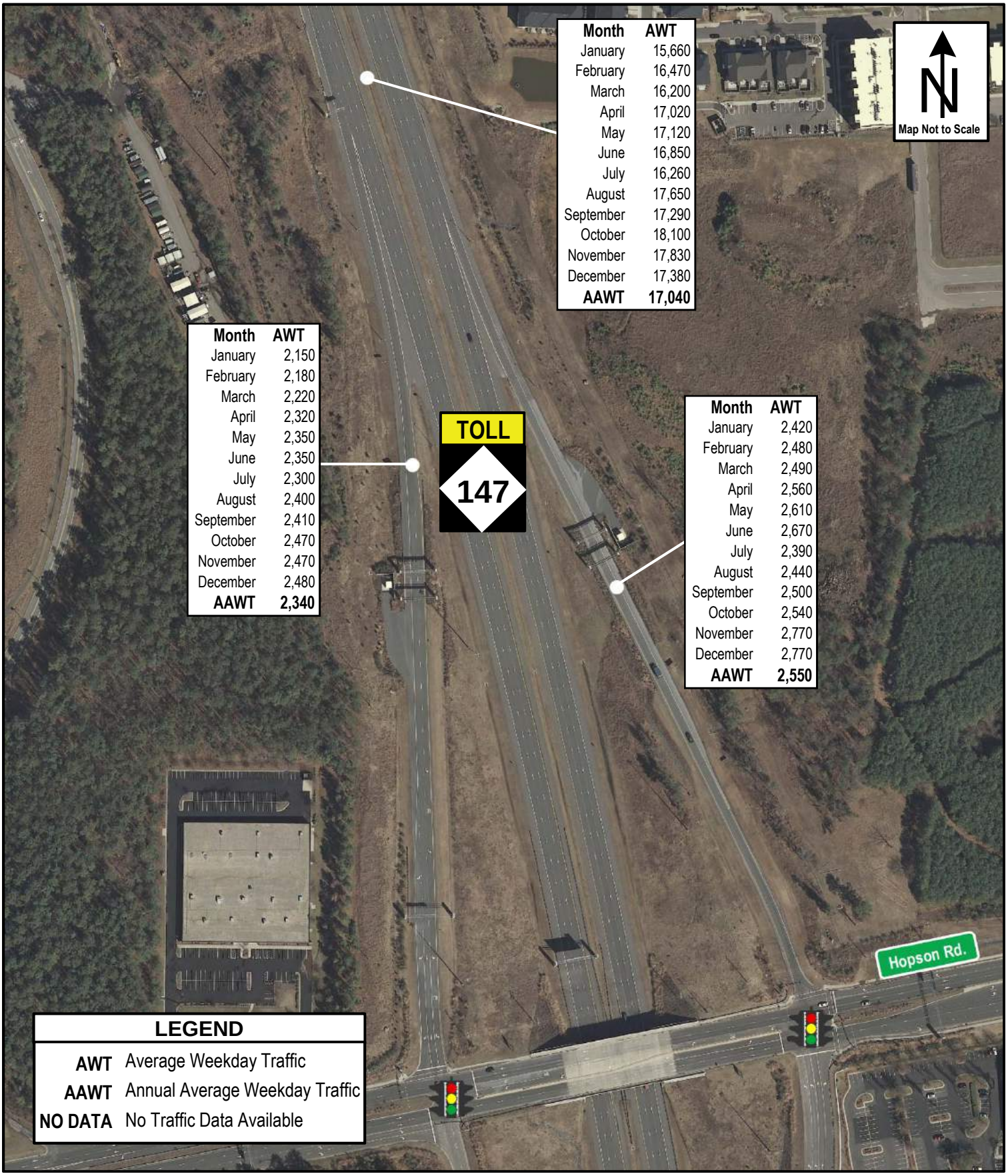
LEGEND

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

2016 Annual Average Weekday Traffic

Figure 3



Month	AWT
January	15,660
February	16,470
March	16,200
April	17,020
May	17,120
June	16,850
July	16,260
August	17,650
September	17,290
October	18,100
November	17,830
December	17,380
AAWT	**17,040**

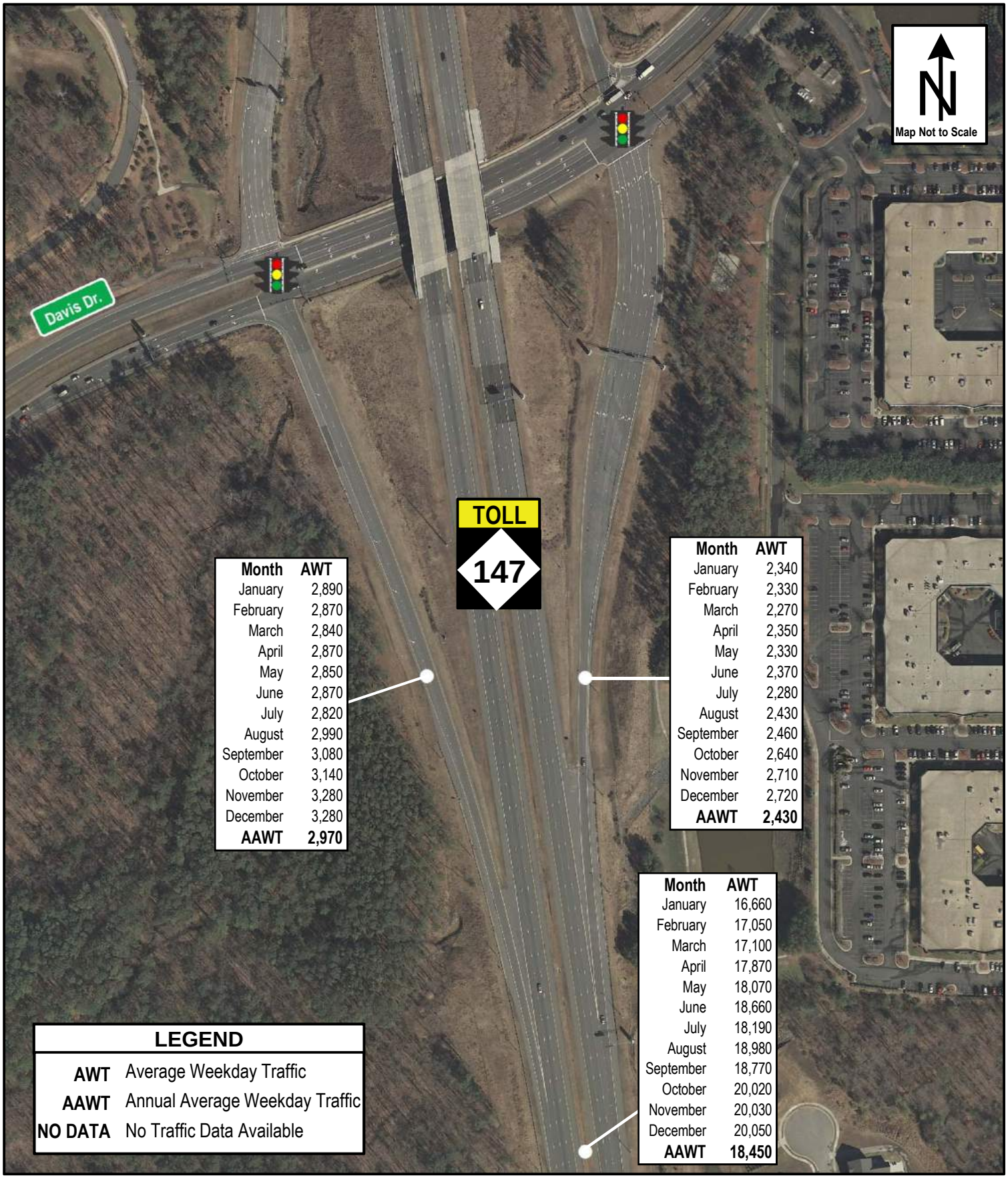
Month	AWT
January	2,150
February	2,180
March	2,220
April	2,320
May	2,350
June	2,350
July	2,300
August	2,400
September	2,410
October	2,470
November	2,470
December	2,480
AAWT	**2,340**

Month	AWT
January	2,420
February	2,480
March	2,490
April	2,560
May	2,610
June	2,670
July	2,390
August	2,440
September	2,500
October	2,540
November	2,770
December	2,770
AAWT	**2,550**

NC-147 at Hopson Rd. Interchange

2016 Annual Average Weekday Traffic

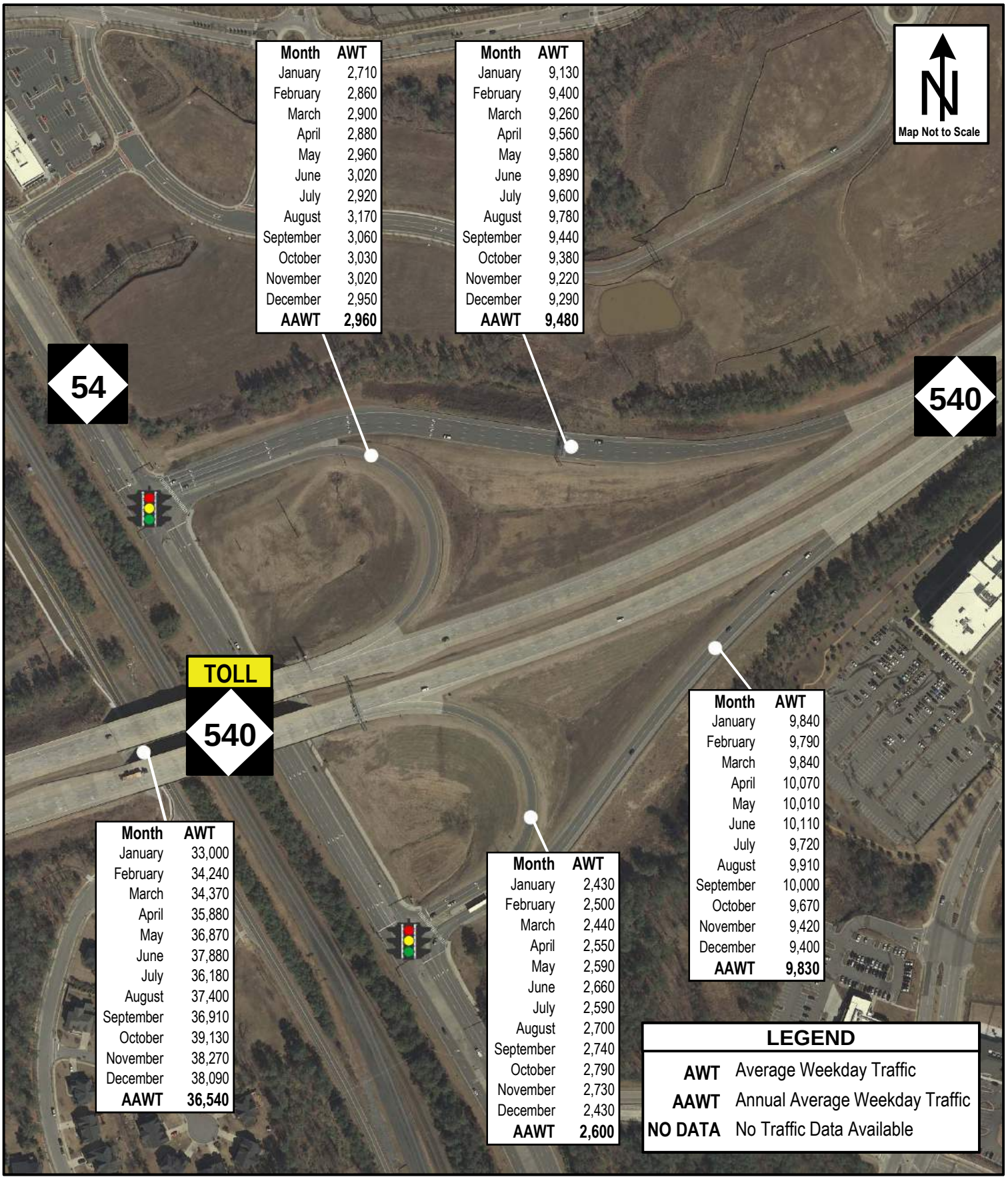
Figure 4



NC-147 at Davis Dr. Interchange

2016 Annual Average Weekday Traffic

Figure 5



Month	AWT
January	2,710
February	2,860
March	2,900
April	2,880
May	2,960
June	3,020
July	2,920
August	3,170
September	3,060
October	3,030
November	3,020
December	2,950
AAWT	**2,960**

Month	AWT
January	9,130
February	9,400
March	9,260
April	9,560
May	9,580
June	9,890
July	9,600
August	9,780
September	9,440
October	9,380
November	9,220
December	9,290
AAWT	**9,480**

Month	AWT
January	9,840
February	9,790
March	9,840
April	10,070
May	10,010
June	10,110
July	9,720
August	9,910
September	10,000
October	9,670
November	9,420
December	9,400
AAWT	**9,830**

Month	AWT
January	33,000
February	34,240
March	34,370
April	35,880
May	36,870
June	37,880
July	36,180
August	37,400
September	36,910
October	39,130
November	38,270
December	38,090
AAWT	**36,540**

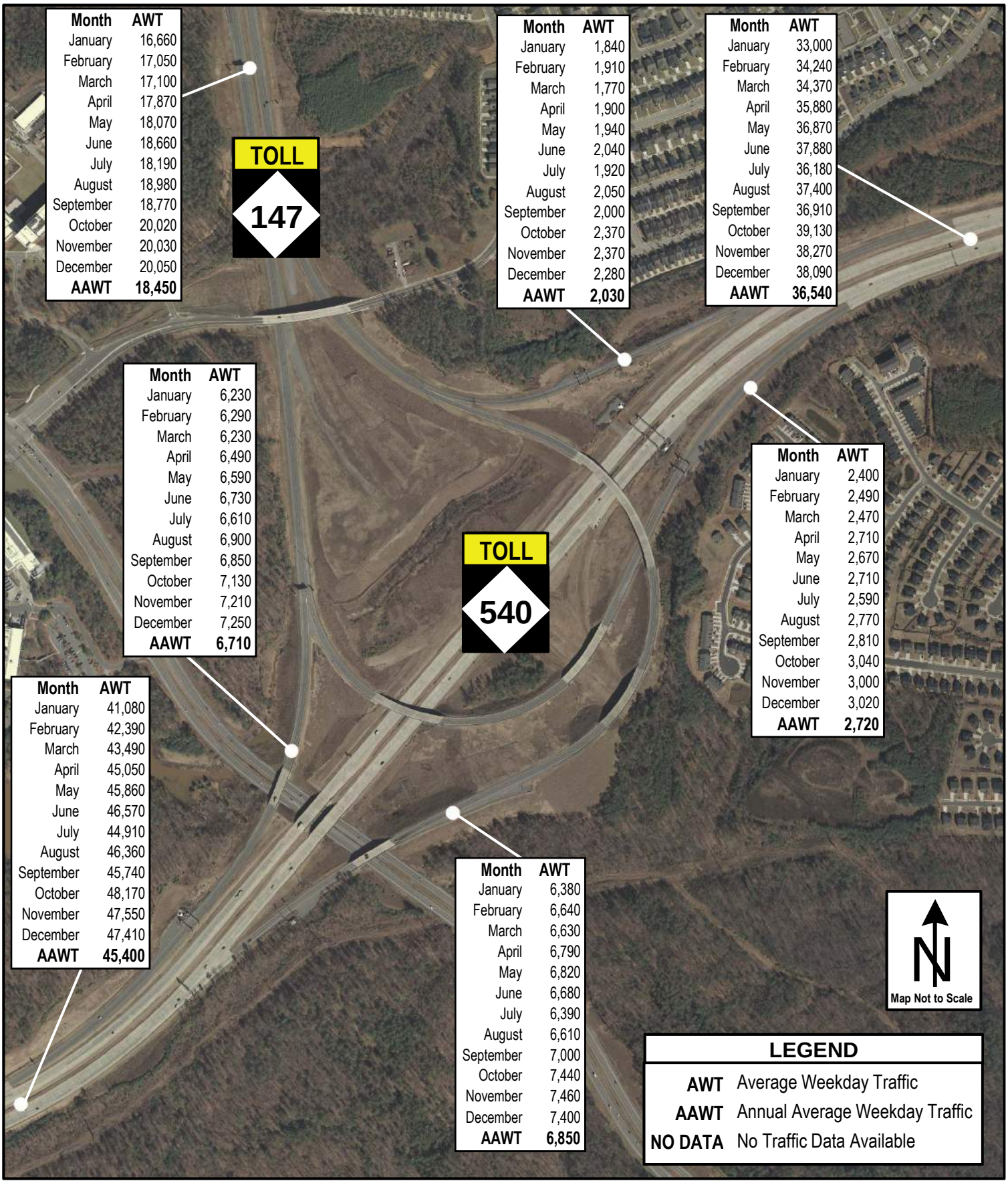
Month	AWT
January	2,430
February	2,500
March	2,440
April	2,550
May	2,590
June	2,660
July	2,590
August	2,700
September	2,740
October	2,790
November	2,730
December	2,430
AAWT	**2,600**

LEGEND	
AWT	Average Weekday Traffic
AAWT	Annual Average Weekday Traffic
NO DATA	No Traffic Data Available

NC-540 at NC-54 Interchange

2016 Annual Average Weekday Traffic

Figure 6



Month	AWT
January	16,660
February	17,050
March	17,100
April	17,870
May	18,070
June	18,660
July	18,190
August	18,980
September	18,770
October	20,020
November	20,030
December	20,050
AAWT	**18,450**

Month	AWT
January	1,840
February	1,910
March	1,770
April	1,900
May	1,940
June	2,040
July	1,920
August	2,050
September	2,000
October	2,370
November	2,370
December	2,280
AAWT	**2,030**

Month	AWT
January	33,000
February	34,240
March	34,370
April	35,880
May	36,870
June	37,880
July	36,180
August	37,400
September	36,910
October	39,130
November	38,270
December	38,090
AAWT	**36,540**

Month	AWT
January	6,230
February	6,290
March	6,230
April	6,490
May	6,590
June	6,730
July	6,610
August	6,900
September	6,850
October	7,130
November	7,210
December	7,250
AAWT	**6,710**

Month	AWT
January	2,400
February	2,490
March	2,470
April	2,710
May	2,670
June	2,710
July	2,590
August	2,770
September	2,810
October	3,040
November	3,000
December	3,020
AAWT	**2,720**

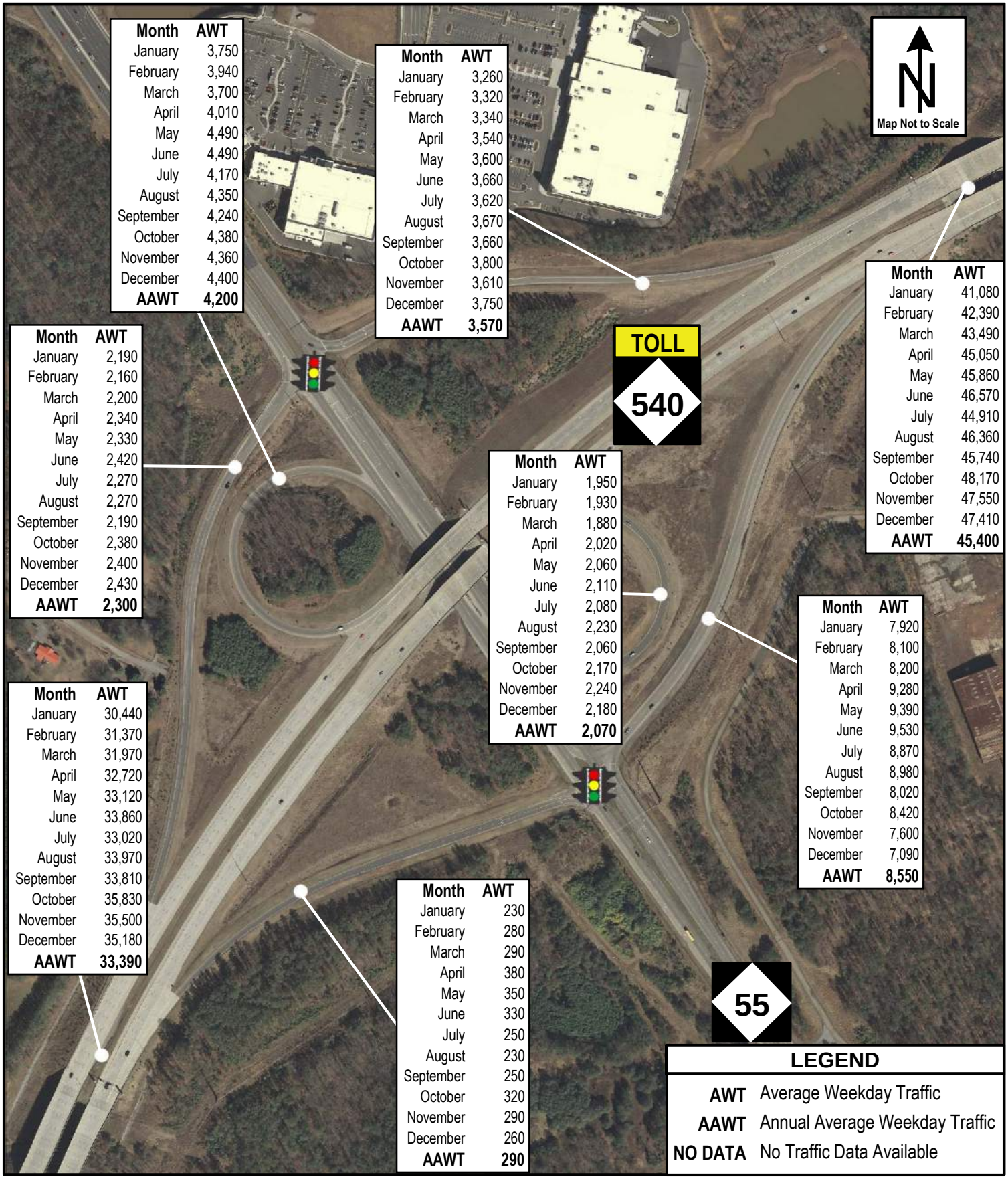
Month	AWT
January	41,080
February	42,390
March	43,490
April	45,050
May	45,860
June	46,570
July	44,910
August	46,360
September	45,740
October	48,170
November	47,550
December	47,410
AAWT	**45,400**

Month	AWT
January	6,380
February	6,640
March	6,630
April	6,790
May	6,820
June	6,680
July	6,390
August	6,610
September	7,000
October	7,440
November	7,460
December	7,400
AAWT	**6,850**

NC-540 at NC-147 Interchange

2016 Annual Average Weekday Traffic

Figure 7



Month	AWT
January	3,750
February	3,940
March	3,700
April	4,010
May	4,490
June	4,490
July	4,170
August	4,350
September	4,240
October	4,380
November	4,360
December	4,400
AAWT	**4,200**

Month	AWT
January	3,260
February	3,320
March	3,340
April	3,540
May	3,600
June	3,660
July	3,620
August	3,670
September	3,660
October	3,800
November	3,610
December	3,750
AAWT	**3,570**

Month	AWT
January	41,080
February	42,390
March	43,490
April	45,050
May	45,860
June	46,570
July	44,910
August	46,360
September	45,740
October	48,170
November	47,550
December	47,410
AAWT	**45,400**

Month	AWT
January	2,190
February	2,160
March	2,200
April	2,340
May	2,330
June	2,420
July	2,270
August	2,270
September	2,190
October	2,380
November	2,400
December	2,430
AAWT	**2,300**

Month	AWT
January	1,950
February	1,930
March	1,880
April	2,020
May	2,060
June	2,110
July	2,080
August	2,230
September	2,060
October	2,170
November	2,240
December	2,180
AAWT	**2,070**

Month	AWT
January	7,920
February	8,100
March	8,200
April	9,280
May	9,390
June	9,530
July	8,870
August	8,980
September	8,020
October	8,420
November	7,600
December	7,090
AAWT	**8,550**

Month	AWT
January	30,440
February	31,370
March	31,970
April	32,720
May	33,120
June	33,860
July	33,020
August	33,970
September	33,810
October	35,830
November	35,500
December	35,180
AAWT	**33,390**

Month	AWT
January	230
February	280
March	290
April	380
May	350
June	330
July	250
August	230
September	250
October	320
November	290
December	260
AAWT	**290**

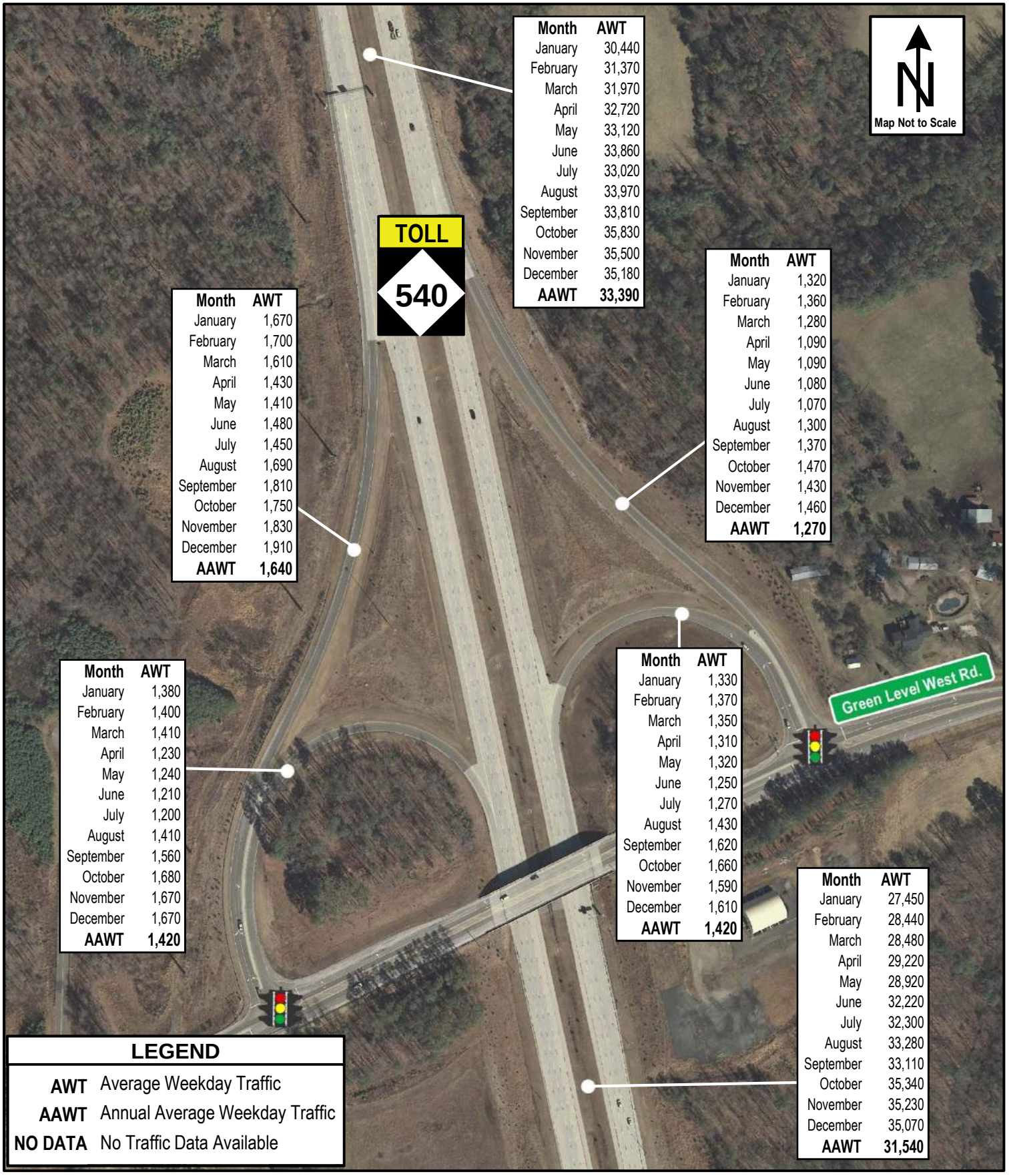
LEGEND

AWT	Average Weekday Traffic
AAWT	Annual Average Weekday Traffic
NO DATA	No Traffic Data Available

NC-540 at NC-55 Interchange

2016 Annual Average Weekday Traffic

Figure 8



Month	AWT
January	30,440
February	31,370
March	31,970
April	32,720
May	33,120
June	33,860
July	33,020
August	33,970
September	33,810
October	35,830
November	35,500
December	35,180
AAWT	**33,390**

Month	AWT
January	1,320
February	1,360
March	1,280
April	1,090
May	1,090
June	1,080
July	1,070
August	1,300
September	1,370
October	1,470
November	1,430
December	1,460
AAWT	**1,270**

Month	AWT
January	1,670
February	1,700
March	1,610
April	1,430
May	1,410
June	1,480
July	1,450
August	1,690
September	1,810
October	1,750
November	1,830
December	1,910
AAWT	**1,640**

Month	AWT
January	1,380
February	1,400
March	1,410
April	1,230
May	1,240
June	1,210
July	1,200
August	1,410
September	1,560
October	1,680
November	1,670
December	1,670
AAWT	**1,420**

Month	AWT
January	1,330
February	1,370
March	1,350
April	1,310
May	1,320
June	1,250
July	1,270
August	1,430
September	1,620
October	1,660
November	1,590
December	1,610
AAWT	**1,420**

Month	AWT
January	27,450
February	28,440
March	28,480
April	29,220
May	28,920
June	32,220
July	32,300
August	33,280
September	33,110
October	35,340
November	35,230
December	35,070
AAWT	**31,540**

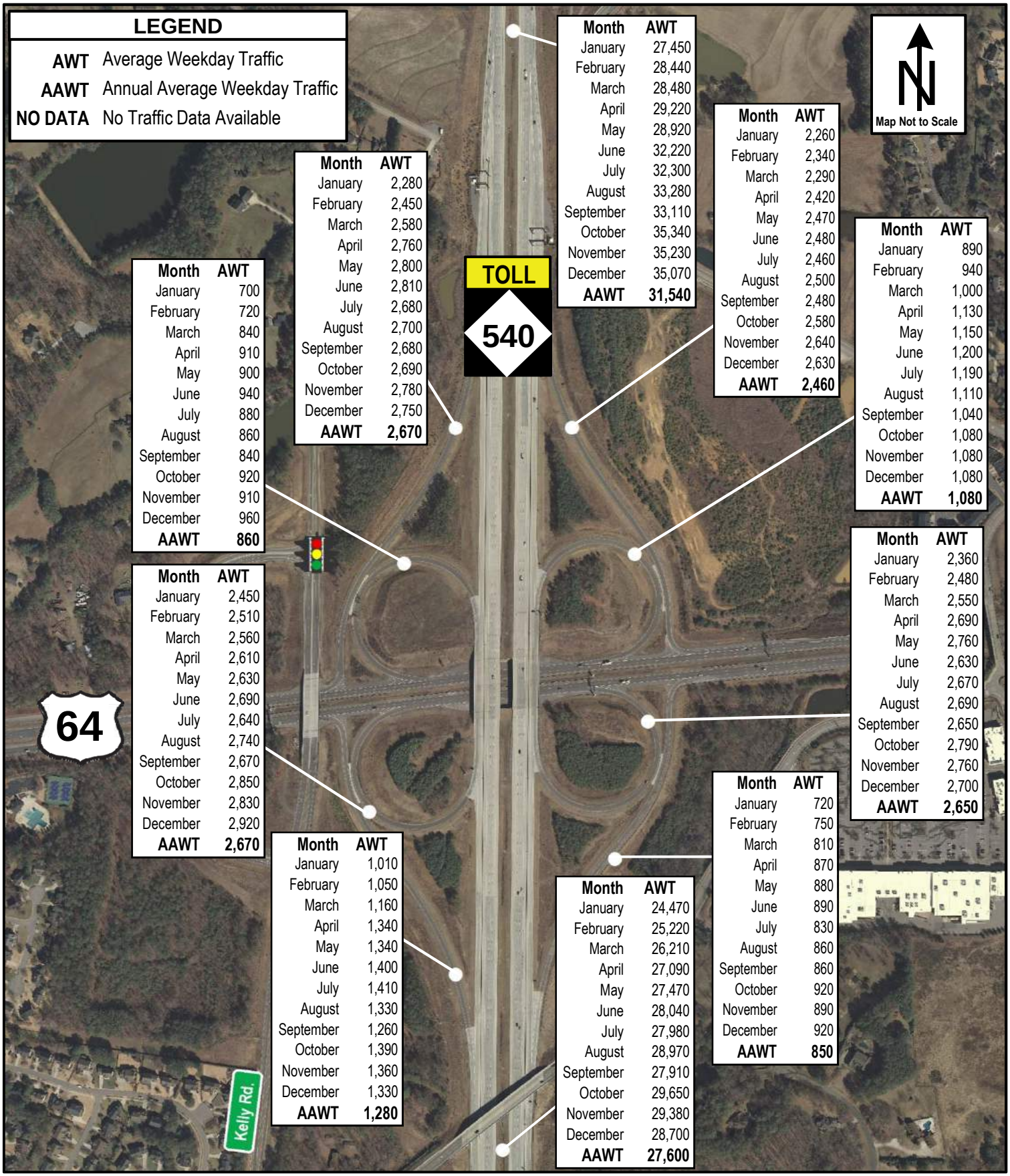
LEGEND

AWT	Average Weekday Traffic
AAWT	Annual Average Weekday Traffic
NO DATA	No Traffic Data Available

NC-540 at Green Level West Rd. Interchange

2016 Annual Average Weekday Traffic

Figure 9



Month	AWT
January	27,450
February	28,440
March	28,480
April	29,220
May	28,920
June	32,220
July	32,300
August	33,280
September	33,110
October	35,340
November	35,230
December	35,070
AAWT	**31,540**

Month	AWT
January	2,260
February	2,340
March	2,290
April	2,420
May	2,470
June	2,480
July	2,460
August	2,500
September	2,480
October	2,580
November	2,640
December	2,630
AAWT	**2,460**

Month	AWT
January	890
February	940
March	1,000
April	1,130
May	1,150
June	1,200
July	1,190
August	1,110
September	1,040
October	1,080
November	1,080
December	1,080
AAWT	**1,080**

Month	AWT
January	2,280
February	2,450
March	2,580
April	2,760
May	2,800
June	2,810
July	2,680
August	2,700
September	2,680
October	2,690
November	2,780
December	2,750
AAWT	**2,670**

Month	AWT
January	700
February	720
March	840
April	910
May	900
June	940
July	880
August	860
September	840
October	920
November	910
December	960
AAWT	**860**

Month	AWT
January	2,360
February	2,480
March	2,550
April	2,690
May	2,760
June	2,630
July	2,670
August	2,690
September	2,650
October	2,790
November	2,760
December	2,700
AAWT	**2,650**

Month	AWT
January	2,450
February	2,510
March	2,560
April	2,610
May	2,630
June	2,690
July	2,640
August	2,740
September	2,670
October	2,850
November	2,830
December	2,920
AAWT	**2,670**

Month	AWT
January	720
February	750
March	810
April	870
May	880
June	890
July	830
August	860
September	860
October	920
November	890
December	920
AAWT	**850**

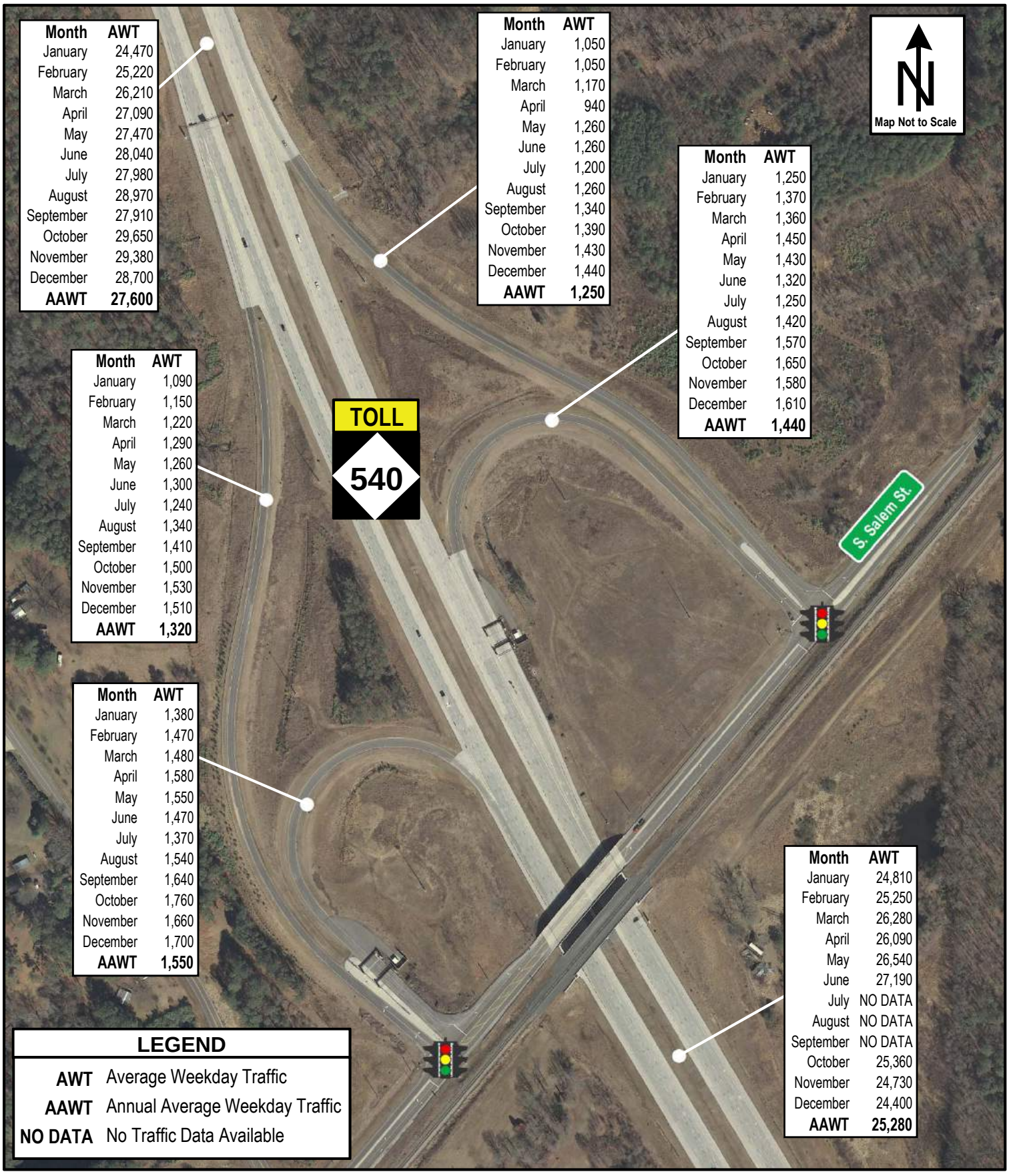
Month	AWT
January	1,010
February	1,050
March	1,160
April	1,340
May	1,340
June	1,400
July	1,410
August	1,330
September	1,260
October	1,390
November	1,360
December	1,330
AAWT	**1,280**

Month	AWT
January	24,470
February	25,220
March	26,210
April	27,090
May	27,470
June	28,040
July	27,980
August	28,970
September	27,910
October	29,650
November	29,380
December	28,700
AAWT	**27,600**

NC-540 at US-64 Interchange

2016 Annual Average Weekday Traffic

Figure 10



Month	AWT
January	24,470
February	25,220
March	26,210
April	27,090
May	27,470
June	28,040
July	27,980
August	28,970
September	27,910
October	29,650
November	29,380
December	28,700
AAWT	**27,600**

Month	AWT
January	1,050
February	1,050
March	1,170
April	940
May	1,260
June	1,260
July	1,200
August	1,260
September	1,340
October	1,390
November	1,430
December	1,440
AAWT	**1,250**

Month	AWT
January	1,250
February	1,370
March	1,360
April	1,450
May	1,430
June	1,320
July	1,250
August	1,420
September	1,570
October	1,650
November	1,580
December	1,610
AAWT	**1,440**

Month	AWT
January	1,090
February	1,150
March	1,220
April	1,290
May	1,260
June	1,300
July	1,240
August	1,340
September	1,410
October	1,500
November	1,530
December	1,510
AAWT	**1,320**

Month	AWT
January	1,380
February	1,470
March	1,480
April	1,580
May	1,550
June	1,470
July	1,370
August	1,540
September	1,640
October	1,760
November	1,660
December	1,700
AAWT	**1,550**

Month	AWT
January	24,810
February	25,250
March	26,280
April	26,090
May	26,540
June	27,190
July	NO DATA
August	NO DATA
September	NO DATA
October	25,360
November	24,730
December	24,400
AAWT	**25,280**

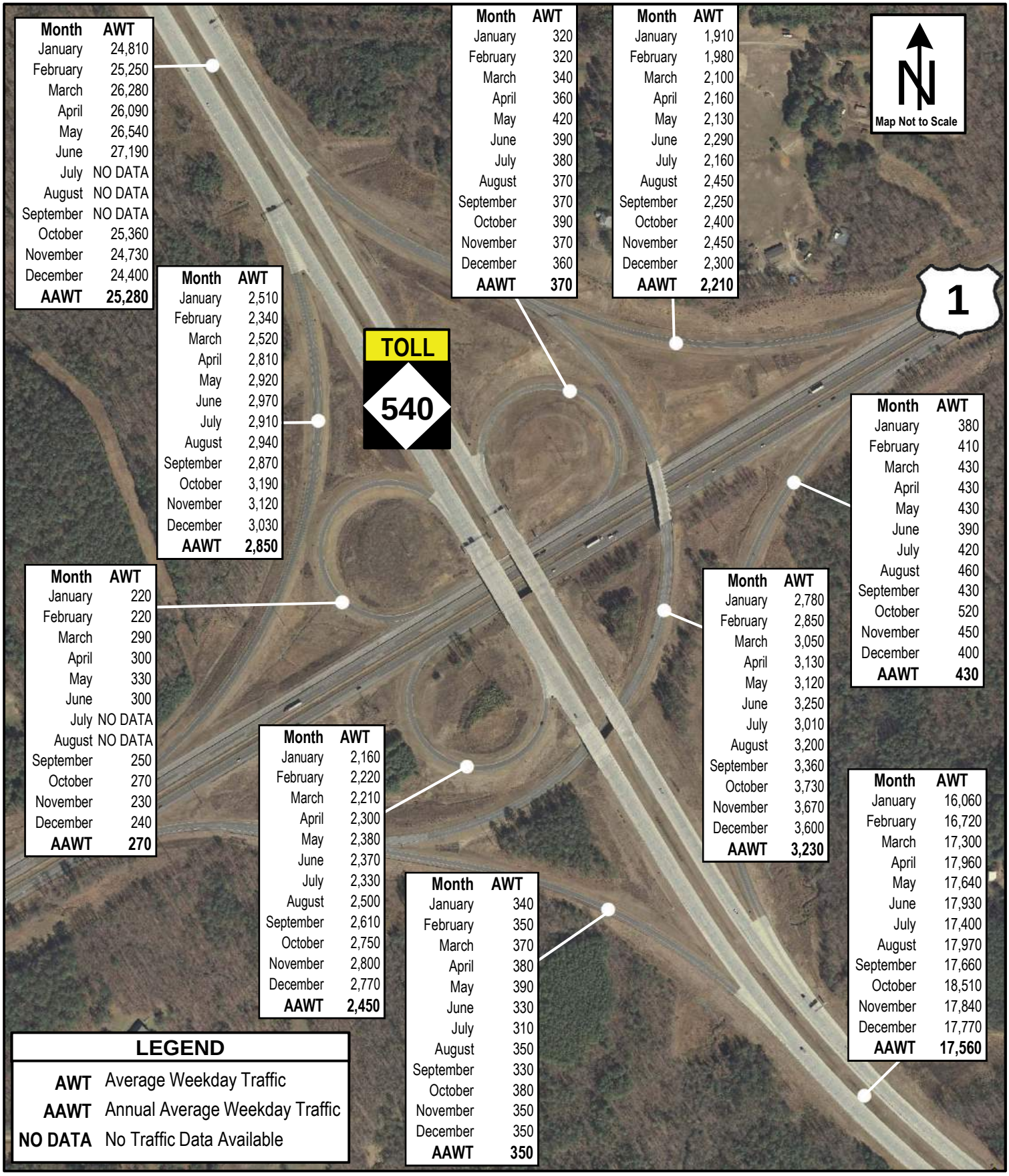
LEGEND

AWT	Average Weekday Traffic
AAWT	Annual Average Weekday Traffic
NO DATA	No Traffic Data Available

NC-540 at S. Salem St. Interchange

2016 Annual Average Weekday Traffic

Figure 11



Month	AWT
January	24,810
February	25,250
March	26,280
April	26,090
May	26,540
June	27,190
July	NO DATA
August	NO DATA
September	NO DATA
October	25,360
November	24,730
December	24,400
AAWT	**25,280**

Month	AWT
January	320
February	320
March	340
April	360
May	420
June	390
July	380
August	370
September	370
October	390
November	370
December	360
AAWT	**370**

Month	AWT
January	1,910
February	1,980
March	2,100
April	2,160
May	2,130
June	2,290
July	2,160
August	2,450
September	2,250
October	2,400
November	2,450
December	2,300
AAWT	**2,210**

Month	AWT
January	2,510
February	2,340
March	2,520
April	2,810
May	2,920
June	2,970
July	2,910
August	2,940
September	2,870
October	3,190
November	3,120
December	3,030
AAWT	**2,850**

Month	AWT
January	380
February	410
March	430
April	430
May	430
June	390
July	420
August	460
September	430
October	520
November	450
December	400
AAWT	**430**

Month	AWT
January	220
February	220
March	290
April	300
May	330
June	300
July	NO DATA
August	NO DATA
September	250
October	270
November	230
December	240
AAWT	**270**

Month	AWT
January	2,780
February	2,850
March	3,050
April	3,130
May	3,120
June	3,250
July	3,010
August	3,200
September	3,360
October	3,730
November	3,670
December	3,600
AAWT	**3,230**

Month	AWT
January	2,160
February	2,220
March	2,210
April	2,300
May	2,380
June	2,370
July	2,330
August	2,500
September	2,610
October	2,750
November	2,800
December	2,770
AAWT	**2,450**

Month	AWT
January	340
February	350
March	370
April	380
May	390
June	330
July	310
August	350
September	330
October	380
November	350
December	350
AAWT	**350**

Month	AWT
January	16,060
February	16,720
March	17,300
April	17,960
May	17,640
June	17,930
July	17,400
August	17,970
September	17,660
October	18,510
November	17,840
December	17,770
AAWT	**17,560**

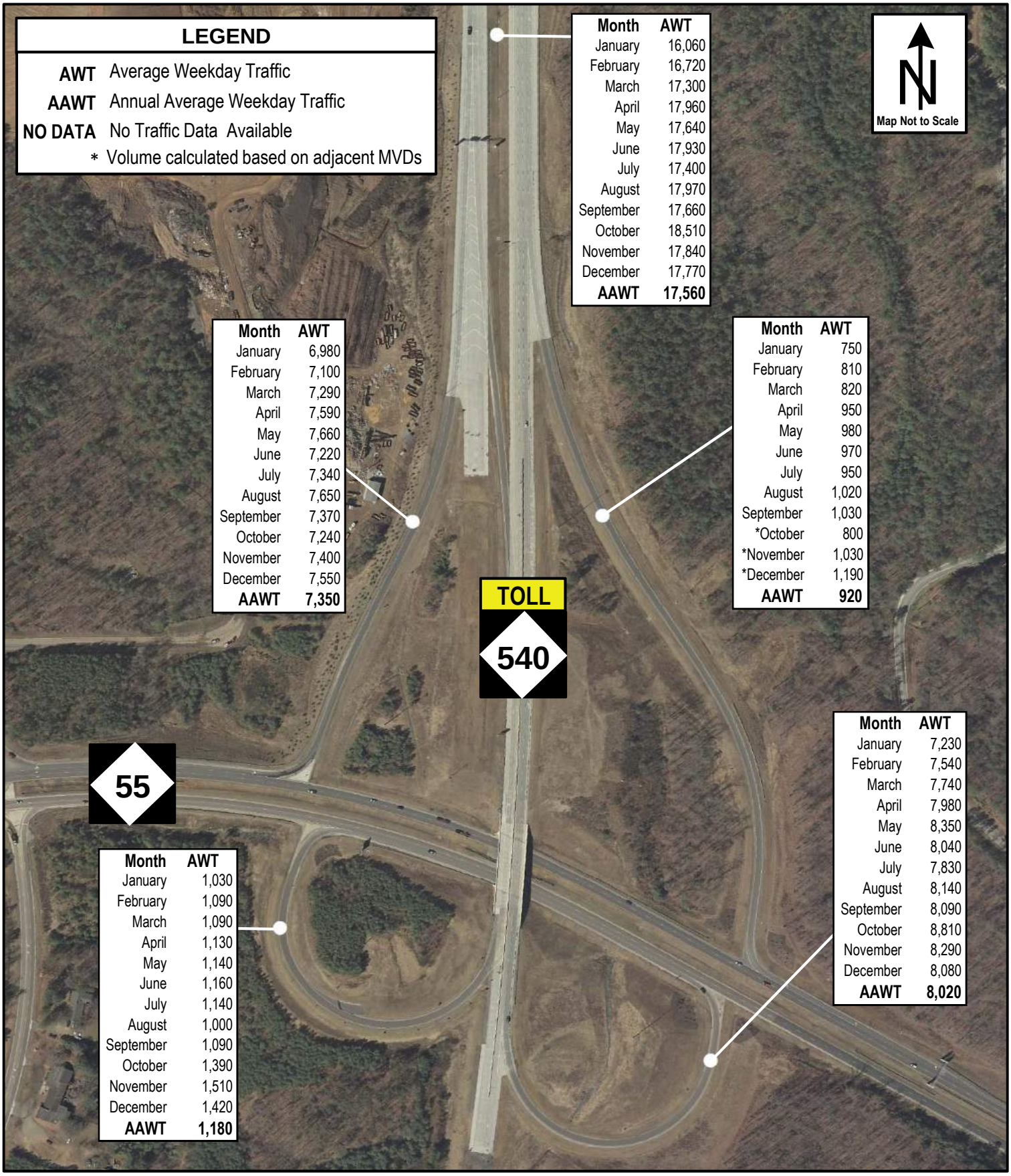
LEGEND

AWT	Average Weekday Traffic
AAWT	Annual Average Weekday Traffic
NO DATA	No Traffic Data Available

NC-540 at US-1 Interchange

2016 Annual Average Weekday Traffic

Figure 12



Month	AWT
January	16,060
February	16,720
March	17,300
April	17,960
May	17,640
June	17,930
July	17,400
August	17,970
September	17,660
October	18,510
November	17,840
December	17,770
AAWT	**17,560**

Month	AWT
January	6,980
February	7,100
March	7,290
April	7,590
May	7,660
June	7,220
July	7,340
August	7,650
September	7,370
October	7,240
November	7,400
December	7,550
AAWT	**7,350**

Month	AWT
January	750
February	810
March	820
April	950
May	980
June	970
July	950
August	1,020
September	1,030
*October	800
*November	1,030
*December	1,190
AAWT	**920**

Month	AWT
January	1,030
February	1,090
March	1,090
April	1,130
May	1,140
June	1,160
July	1,140
August	1,000
September	1,090
October	1,390
November	1,510
December	1,420
AAWT	**1,180**

Month	AWT
January	7,230
February	7,540
March	7,740
April	7,980
May	8,350
June	8,040
July	7,830
August	8,140
September	8,090
October	8,810
November	8,290
December	8,080
AAWT	**8,020**

NC-540 at NC-55 Bypass Interchange

2016 Annual Average Weekday Traffic

Figure 13

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 and customer call and walk-in services. The CSC also provides support services such as 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 Peach Pass®.

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 Annual Statistics

The statistics provided in the following section are representative of the entire Triangle Expressway facility. Weekly, monthly and/or annual 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 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, Vehicle/Account Information Update, and License Plate Mismatch Dispute. The Other category encompasses calling reasons other than the pre-determined categories.

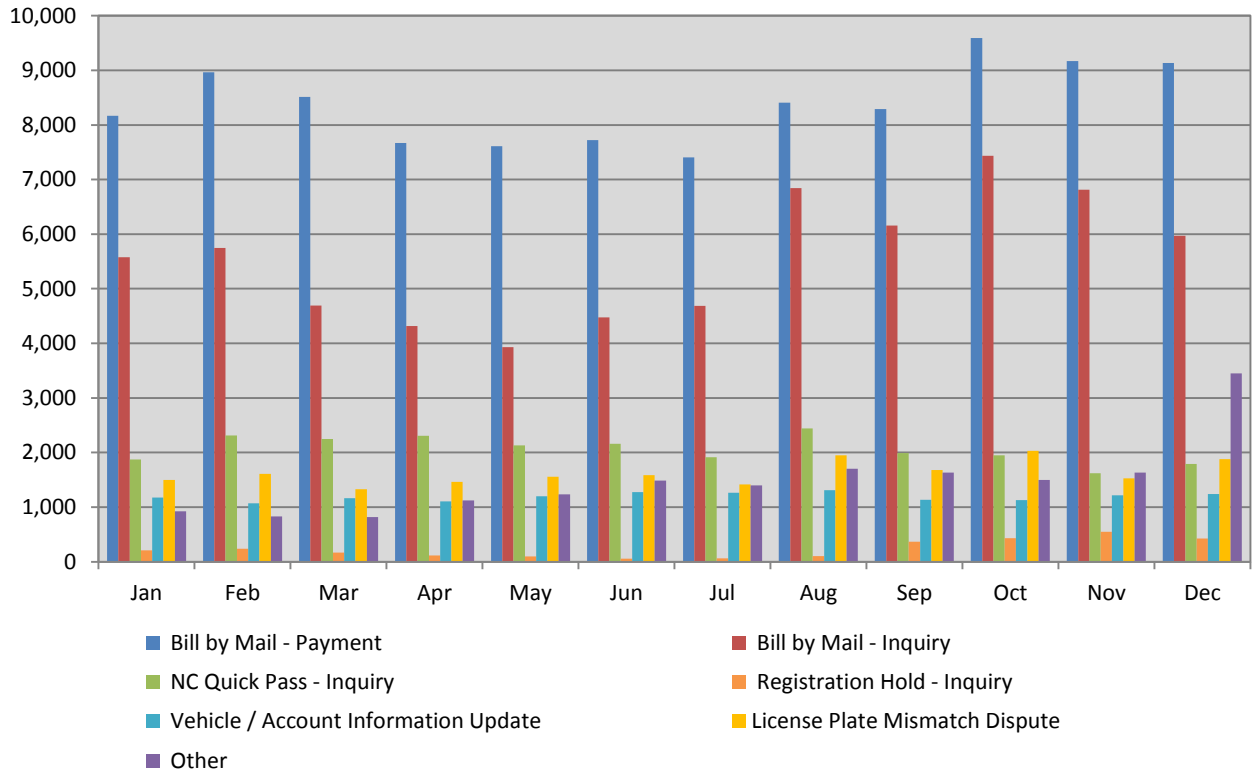
Table 1 presents a summary of the total monthly number of customer calls handled by CSRs, by reason.

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

Month	Bill by Mail-Payment	Bill by Mail - Inquiry	NC Quick Pass® - Inquiry	Registration Hold - Inquiry	Vehicle / Account Information Update	License Plate Mismatch Dispute	Other	Total
October	9,589	7,433	1,951	429	1,129	2,031	1,499	**24,061**
November	9,172	6,811	1,623	547	1,218	1,529	1,635	**22,535**
December	9,133	5,970	1,791	428	1,240	1,878	3,448	**23,888**

Figure 14 presents the total monthly number of customer calls handled by CSRs during 2016, by reason.

Figure 14: 2016 NC Quick Pass® CSC Calls by Reason



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.

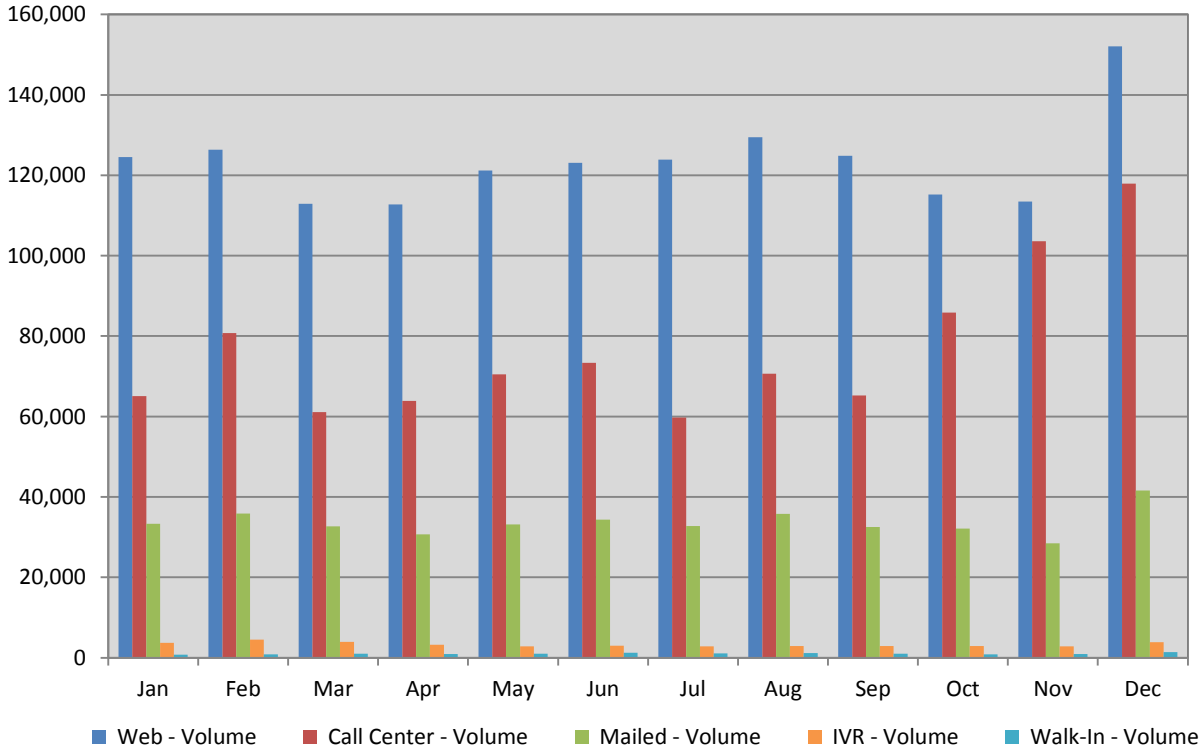
Table 2 presents a summary of the total monthly payments processed by the NC Quick Pass® CSC, by payment channel.

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

Month	Web Volume	Call Center Volume	Mailed Volume	IVR Volume	Walk-In Volume	Total
October	115,241	85,812	32,160	2,936	874	**237,023**
November	113,487	103,576	28,486	2,832	901	**249,282**
December	152,082	117,886	41,586	3,867	1,377	**316,798**

Figure 15 presents the total monthly payments processed by the NC Quick Pass® CSC during 2016, by payment channel.

Figure 15: 2016 NC Quick Pass® CSC Payments Processed by Channel



Walk-in Customers

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

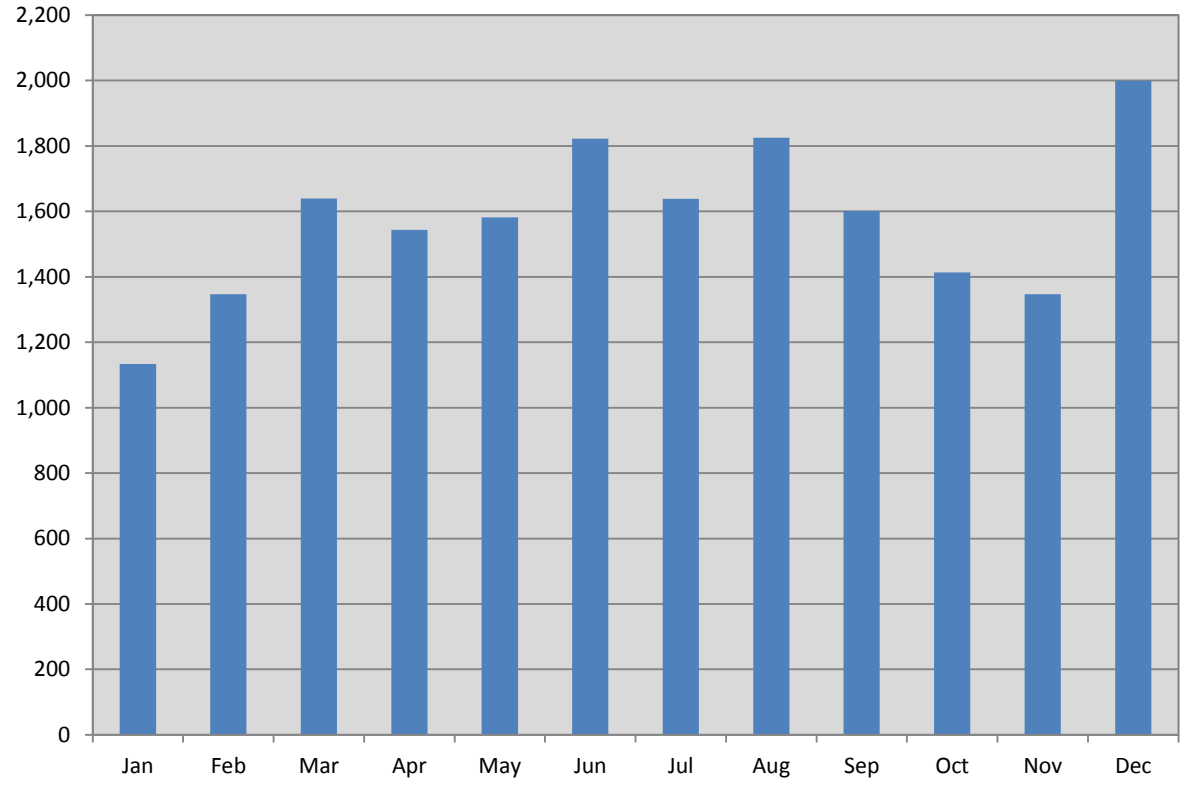
Table 3 presents a summary of the total monthly number of walk-in customers serviced in the NC Quick Pass® CSC Walk-In Center.

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

Month	Number of Walk-In Customers
October	1,413
November	1,347
December	1,999

Figure 16 depicts the number of walk-in customers that were serviced in the NC Quick Pass® CSC Walk-In Center during 2016.

Figure 16: 2016 NC Quick Pass® CSC Walk-in Customers



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, Fourth Quarter by Week

Week Ending	Transponder (NC Quick Pass®)		Video (Bill by Mail)		Total
	Transactions	% of Total	Transactions	% of Total	
10/2/2016[1]	81,820	51.2%	78,138	48.8%	**159,958**
10/9/2016	523,752	59.3%	359,754	40.7%	**883,506**
10/16/2016	567,160	56.9%	429,229	43.1%	**996,389**
10/23/2016	560,120	57.8%	409,304	42.2%	**969,424**
10/30/2016	560,302	58.4%	399,094	41.6%	**959,396**
11/6/2016	557,320	58.7%	391,415	41.3%	**948,735**
11/13/2016[2]	548,583	58.5%	389,532	41.5%	**938,115**
11/20/2016	558,275	58.2%	400,247	41.8%	**958,522**
11/27/2016[3]	393,841	54.7%	326,165	45.3%	**720,006**
12/4/2016	558,535	59.2%	384,274	40.8%	**942,809**
12/11/2016	550,900	59.5%	374,492	40.5%	**925,392**
12/18/2016	557,664	58.9%	388,913	41.1%	**946,577**
12/25/2016[4]	453,861	56.4%	350,260	43.6%	**804,121**
12/31/2016[5]	295,567	53.4%	258,324	46.6%	**553,891**

[1] Week ending consists of one day of data
[2] Week ending includes Veterans Day
[3] Week ending includes Thanksgiving
[4] Week ending includes Christmas
[5] Week ending consists of six days of data and includes New Year's Eve

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

Table 5: Transactions, Fourth Quarter by Month

Month	Transponder (NC Quick Pass®)		Video (Bill by Mail)		Total
	Transactions	% of Total	Transactions	% of Total	
October	2,384,814	57.9%	1,733,497	42.1%	**4,118,311**
November	2,251,123	58.1%	1,625,117	41.9%	**3,876,240**
December	2,131,763	57.4%	1,580,527	42.6%	**3,712,290**

Figure 17 presents the total monthly transactions and NC Quick Pass® utilization during 2016.

Figure 17: 2016 Transactions

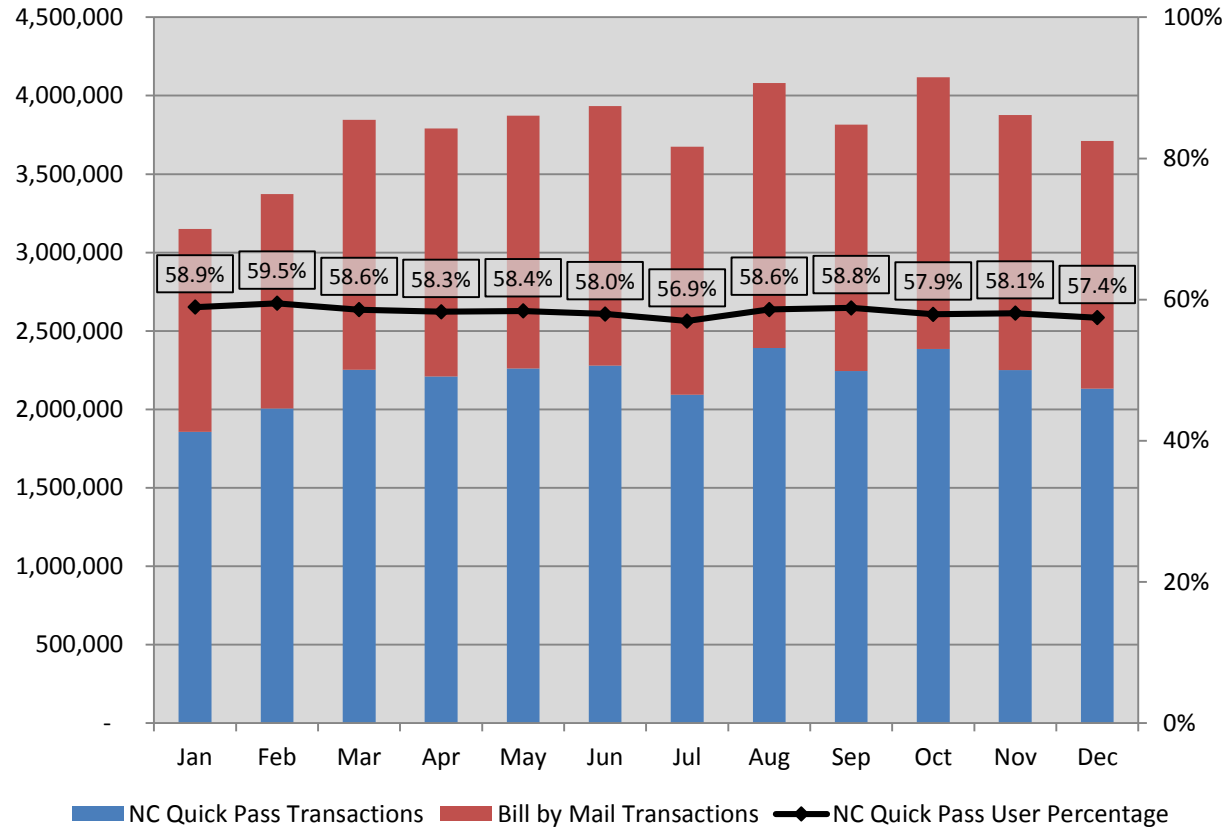


Table 6 presents a summary of the total NC Quick Pass® and Bill by Mail transactions, by year. Project to date is the total number of transactions since opening the facility to toll traffic.

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
Project to Date	**82,230,046**	**57.6%**	**60,606,263**	**42.4%**	**142,836,309**

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, Fourth 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
10/2/2016[1]	157,011	98.2%	1,092	0.7%	1,855	1.2%
10/9/2016	850,248	96.2%	10,506	1.2%	22,752	2.6%
10/16/2016	955,650	95.9%	12,423	1.2%	28,316	2.8%
10/23/2016	929,708	95.9%	12,648	1.3%	27,068	2.8%
10/30/2016	921,798	96.1%	12,580	1.3%	25,018	2.6%
11/6/2016	912,233	96.2%	12,125	1.3%	24,377	2.6%
11/13/2016[2]	901,274	96.1%	12,287	1.3%	24,554	2.6%
11/20/2016	923,002	96.3%	12,217	1.3%	23,303	2.4%
11/27/2016[3]	696,048	96.7%	7,927	1.1%	16,031	2.2%
12/4/2016	904,458	95.9%	13,199	1.4%	25,152	2.7%
12/11/2016	892,396	96.4%	11,064	1.2%	21,932	2.4%
12/18/2016	910,562	96.2%	12,175	1.3%	23,840	2.5%
12/25/2016[4]	777,751	96.7%	8,576	1.1%	17,794	2.2%
12/31/2016[5]	534,991	96.6%	6,393	1.2%	12,507	2.3%

[1] Week ending consists of one day of data
[2] Week ending includes Veterans Day
[3] Week ending includes Thanksgiving
[4] Week ending includes Christmas
[5] Week ending consists of six days of data and includes New Year's Eve

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

Table 8: Classification, Fourth 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
October	3,957,442	96.1%	51,442	1.2%	109,427	2.7%
November	3,729,609	96.2%	49,160	1.3%	97,471	2.5%
December	3,580,079	96.4%	44,610	1.2%	87,601	2.4%

Figure 18 presents the total monthly percentage of transactions during 2016 for Class 1 (2-axle), Class 2 (3-axle), and Class 3 (4+axle) vehicles.

Figure 18: 2016 Classification

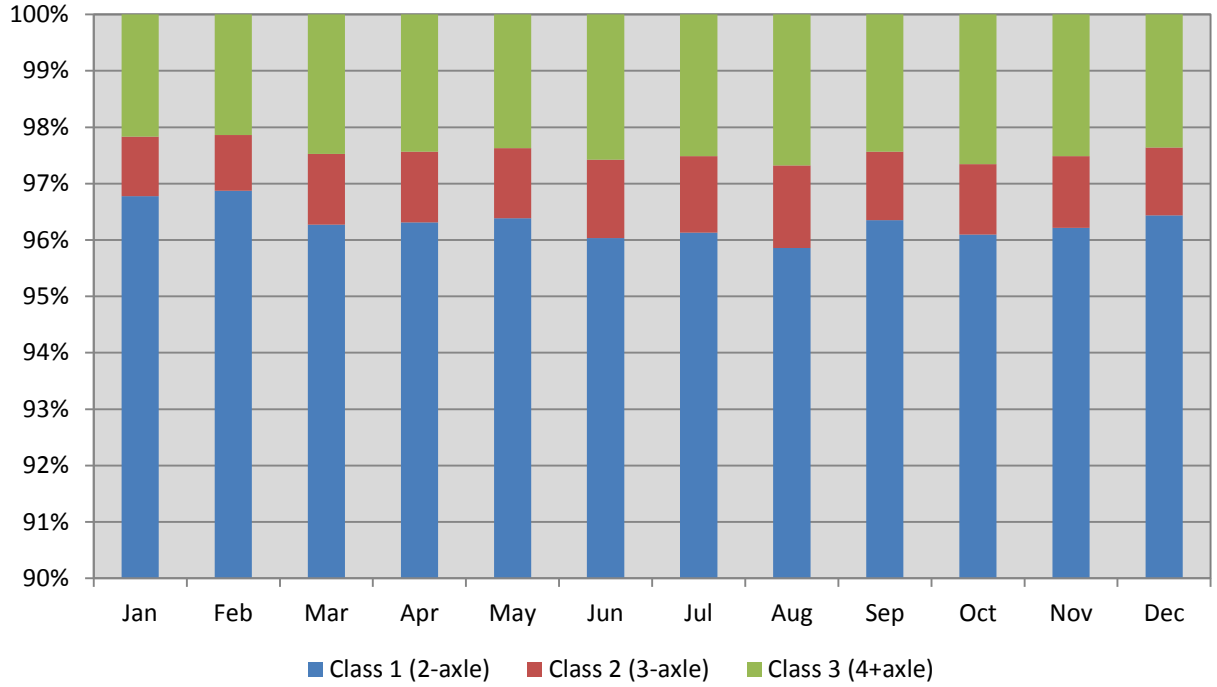


Table 9 presents a summary of the total transactions for Class 1 (2-axle), Class 2 (3-axle), and Class 3 (4+axle) vehicles, by year. Project to date is the total number of transactions since opening the facility to toll traffic.

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%
Project to Date	**137,992,708**	**96.6%**	**1,663,091**	**1.2%**	**3,180,511**	**2.2%**

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, Fourth Quarter by Month

Month	NC Quick Pass®	Bill by Mail	Registered Video	Non-Revenue	Government	Total
October	2,067	34,100	0	0	0	36,167
November	2,146	26,786	0	0	0	28,932
December	3,062	27,815	0	0	0	30,877

Figure 19 presents the monthly established accounts managed by the NC Quick Pass® CSC during 2016. The "Other" category includes registered video, non-revenue, and government accounts.

Figure 19: 2016 Established Accounts

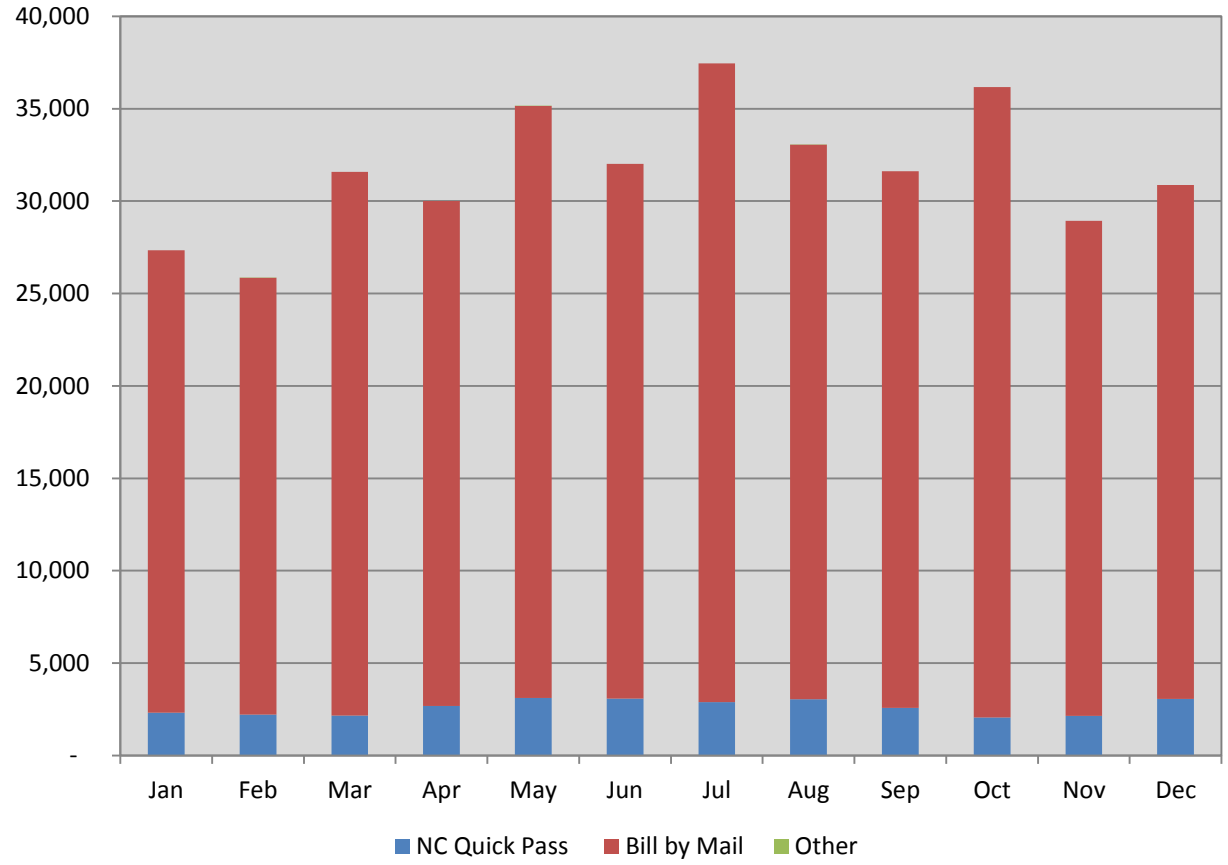


Table 11 presents a summary of the total established accounts managed by the NC Quick Pass® CSC, by year. Project to date is the total number of accounts established since project opening. Numbers presented in parentheses represent a reduction in accounts.

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
Project to Date	**125,679**	**1,738,039**	**7**	**78**	**30**	**1,863,833**

Transponders

This section presents the volume of transponders sold.

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

Table 12: Transponders Sold, Fourth Quarter by Month

Month	Sticker Transponder	Hard Case Transponder	Exterior Transponder	Total
October	2,579	1,767	56	**4,402**
November	2,667	1,964	62	**4,693**
December	1,726	4,621	48	**6,395**

Figure 20 presents monthly transponders sold during 2016.

Figure 20: 2016 Transponders Sold

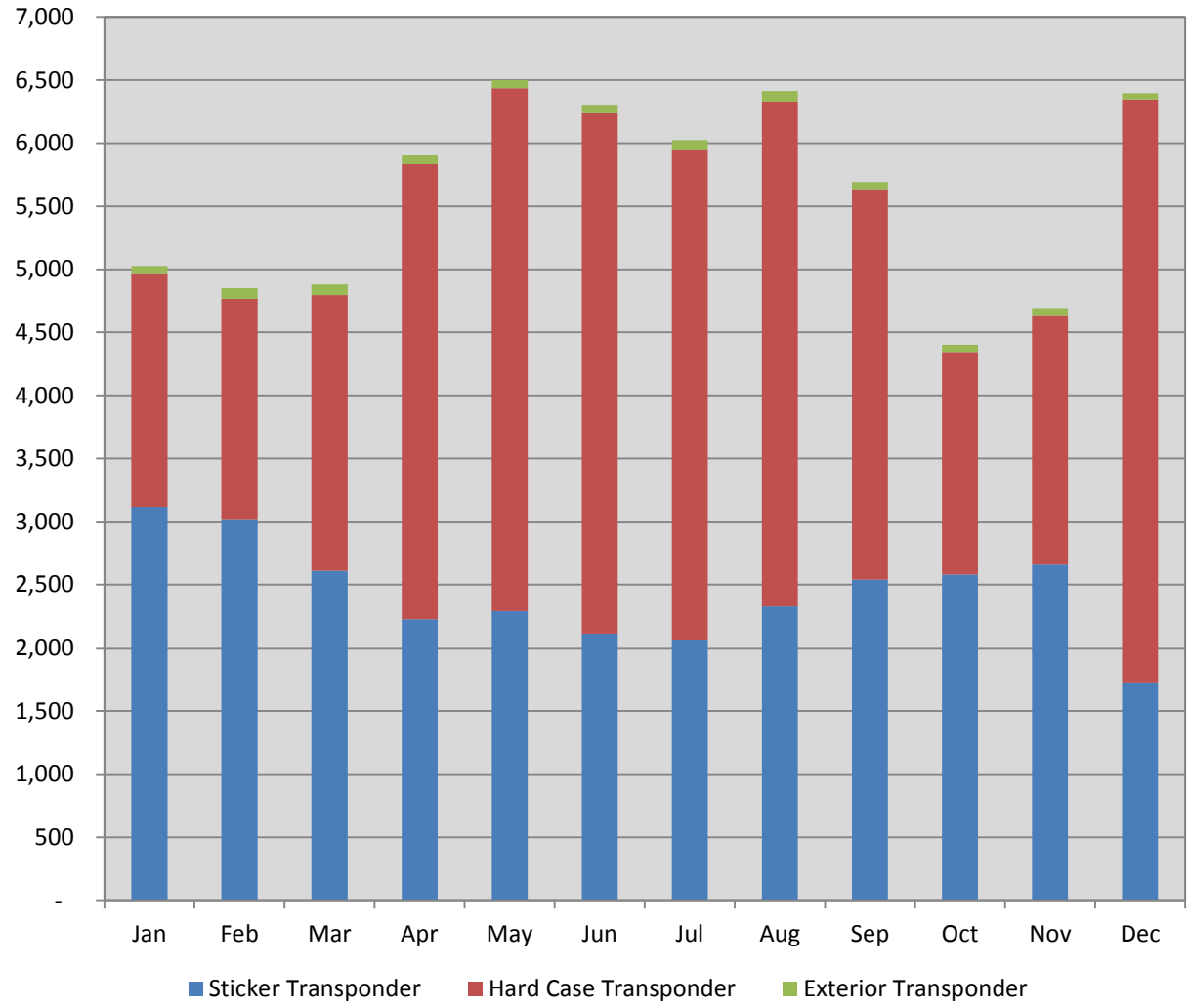


Table 13 presents a summary of the total transponders sold, by year. In October 2011, transponders went on sale prior to the opening of the roadway to provide potential motorists sufficient time to establish their accounts. Project to date is the total number of transponders sold to date.

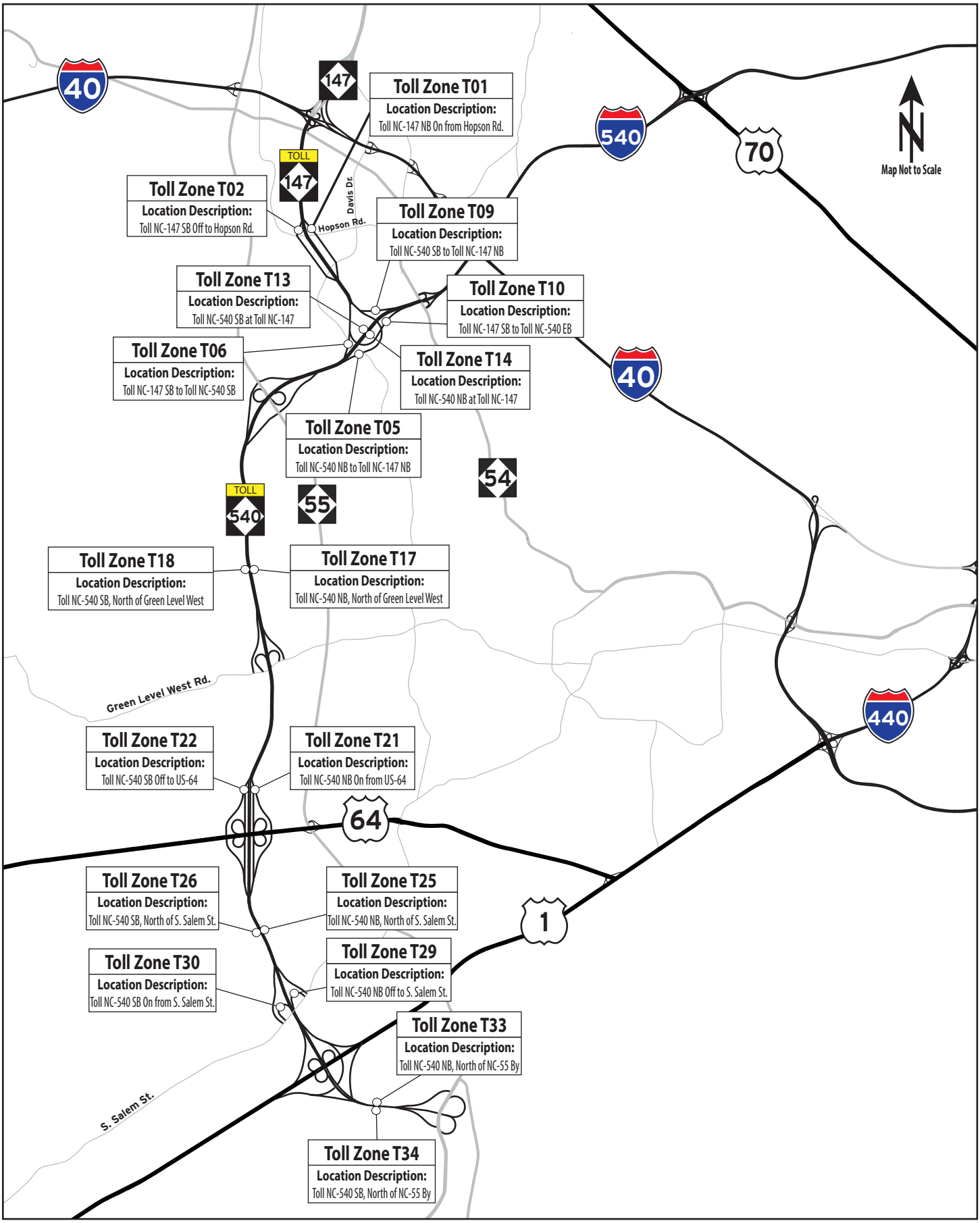
Table 13: Transponders Sold, by Year

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
Project to Date	**164,656**	**95,441**	**2,338**	**262,435**

Toll Zone Statistics

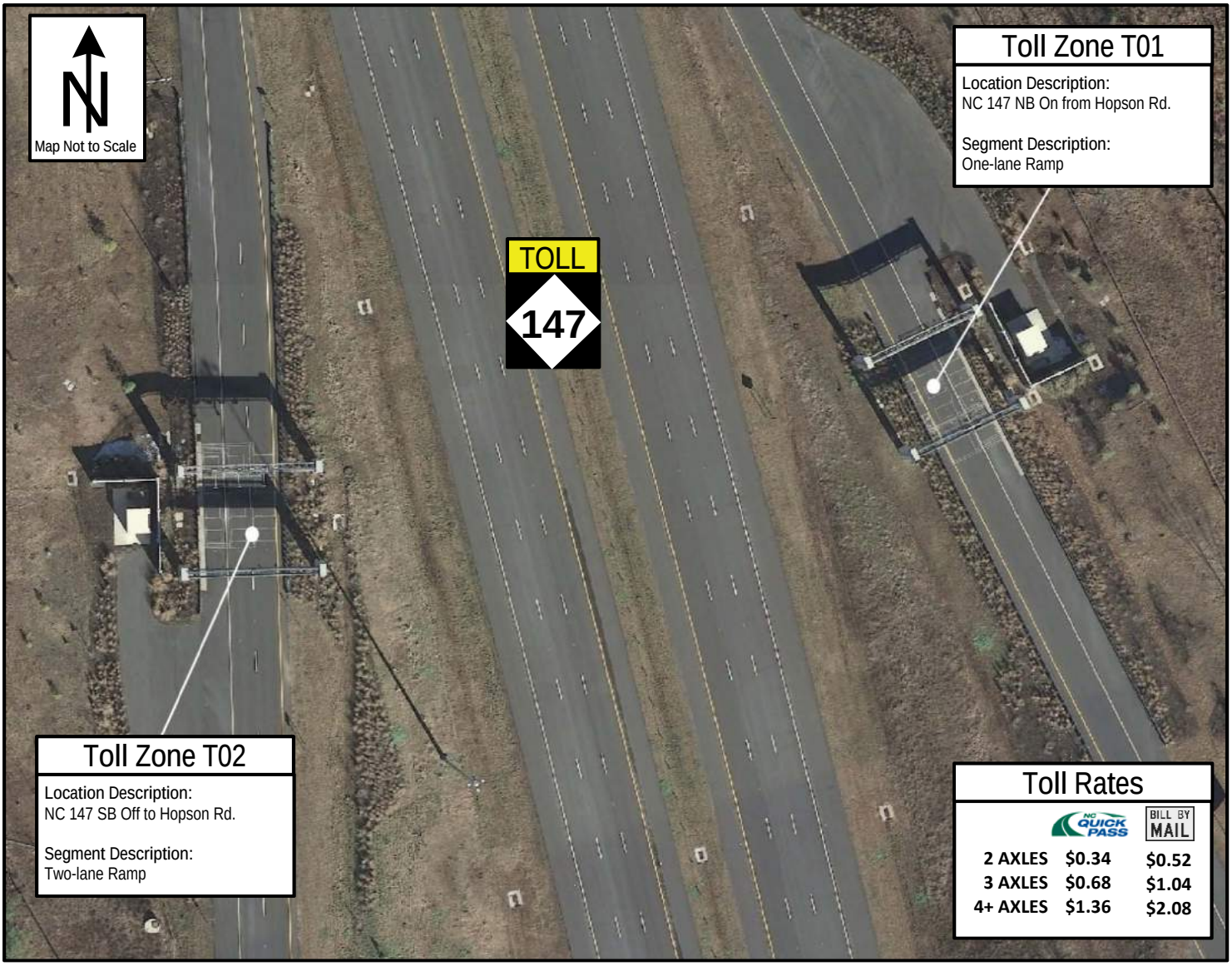
TOLL ZONE STATISTICS

The location of the toll zones along the Triangle Expressway can be seen in *Figure 21*. *Fi*gures *22 - 30* 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 21



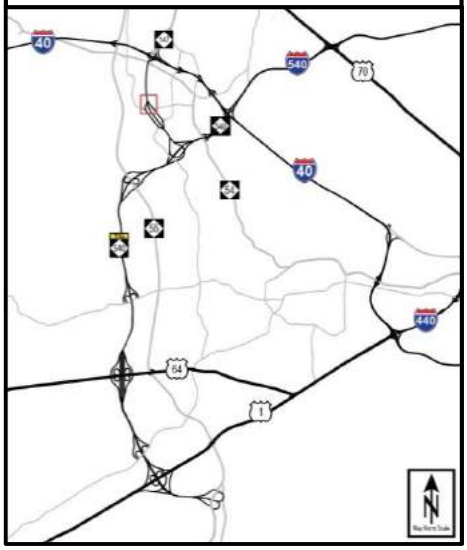
Transactions by Direction

Month	T01	T02
January	2,480	2,210
February	2,510	2,210
March	2,530	2,260
April	2,590	2,360
May	2,570	2,320
June	2,680	2,370
July	2,580	2,310
August	2,640	2,420
September	2,620	2,430
October	2,740	2,510
November	2,700	2,510
December	2,680	2,520

NC Quick Pass Percentage

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

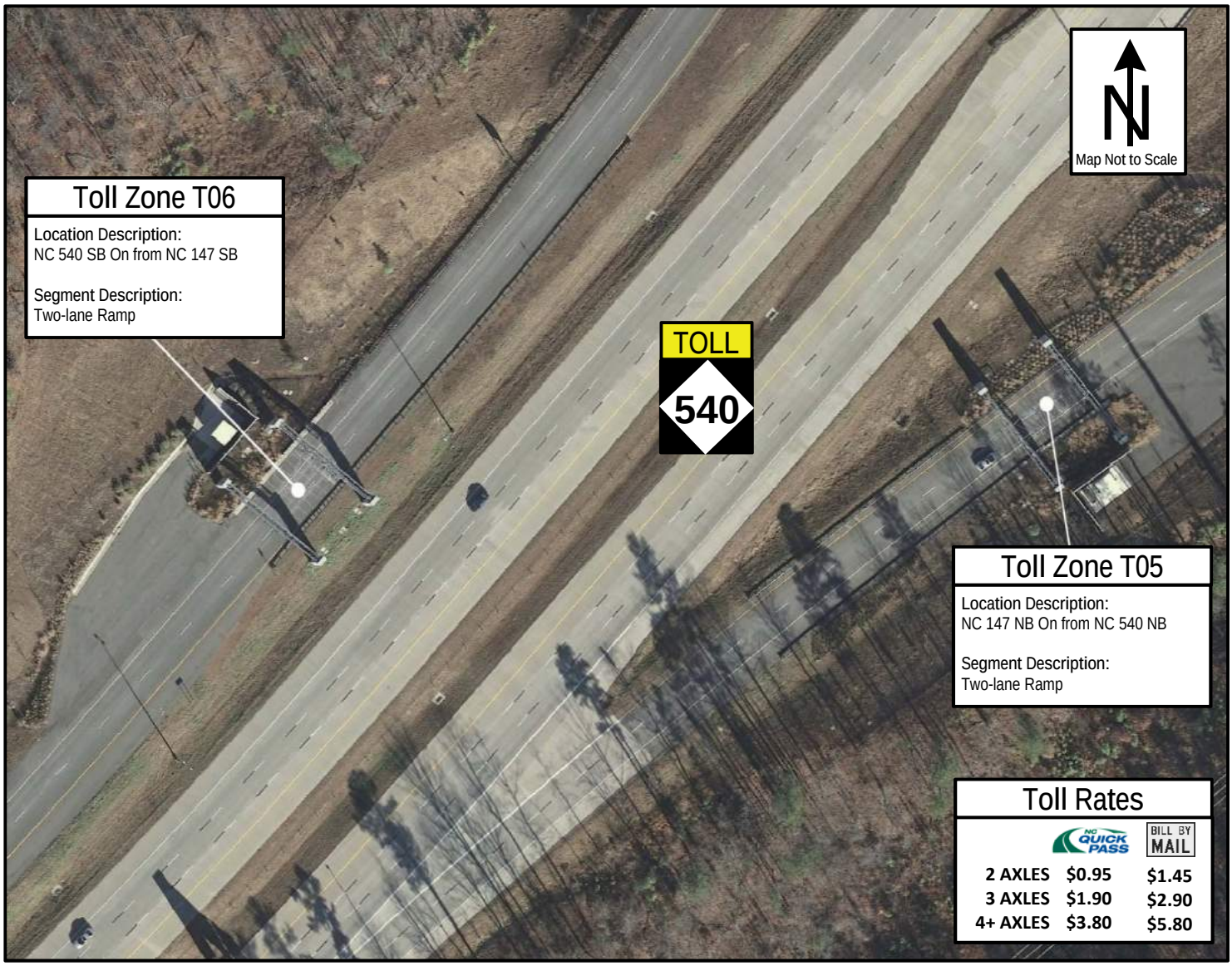
Map Locator



Hopson Road Ramp Toll Zones

2016 Average Weekday Toll Transactions

Figure 22



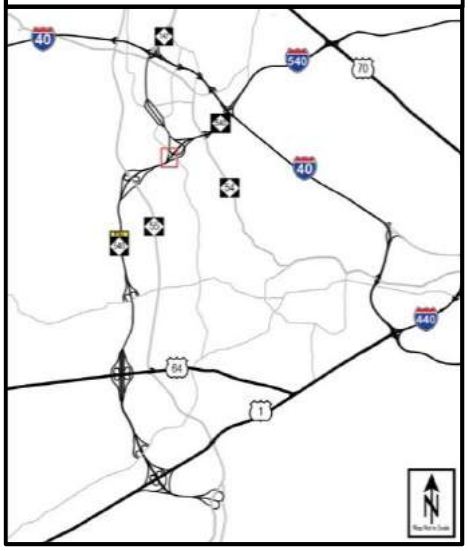
Transactions by Direction

Month	T05	T06
January	6,480	6,380
February	6,630	6,420
March	6,780	6,470
April	6,940	6,660
May	6,820	6,500
June	7,100	6,810
July	6,970	6,680
August	7,200	7,000
September	7,080	6,940
October	7,550	7,310
November	7,570	7,370
December	7,450	7,320

NC Quick Pass Percentage

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

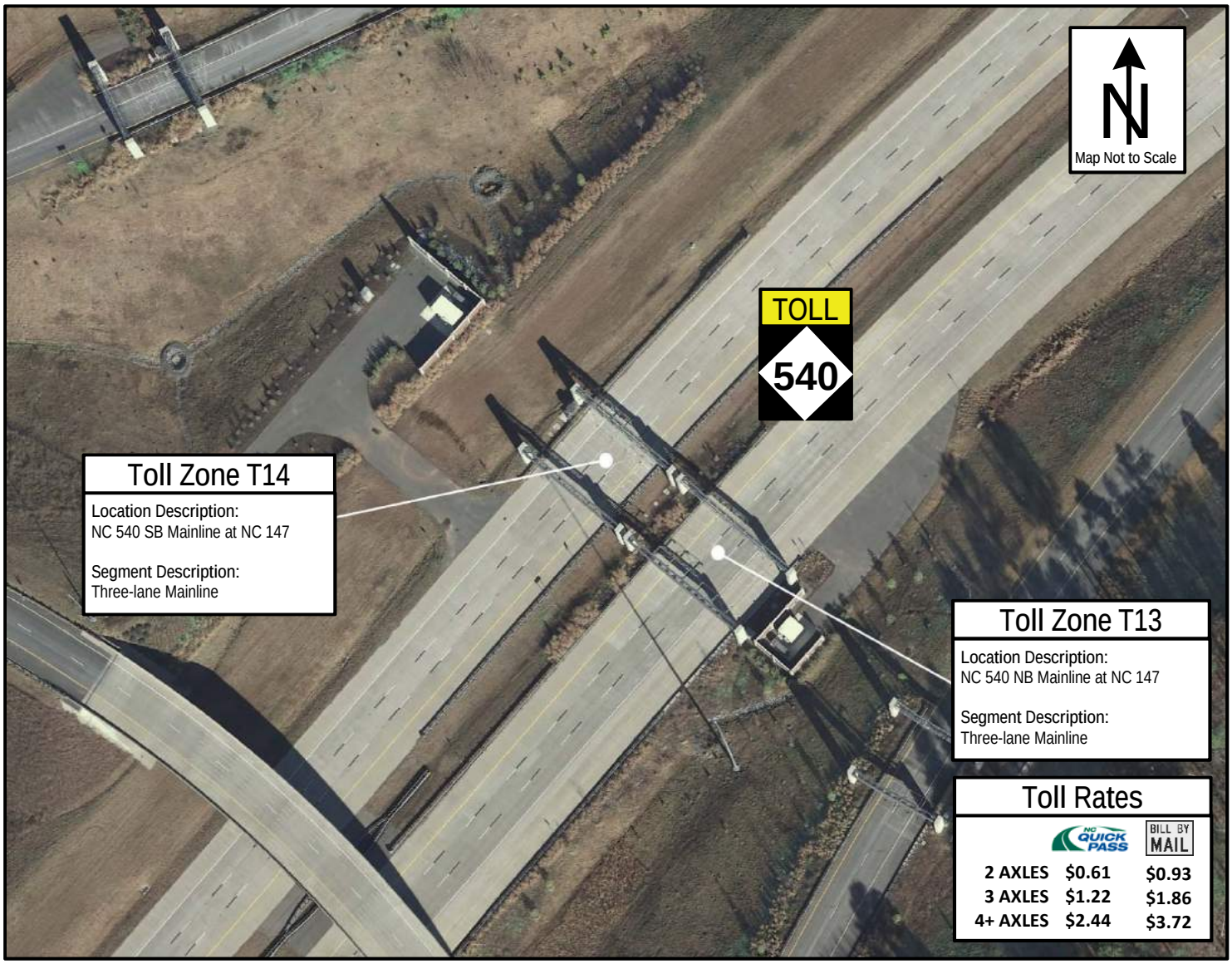
Map Locator



NC-147 South Ramp Toll Zones

2016 Average Weekday Toll Transactions

Figure 23



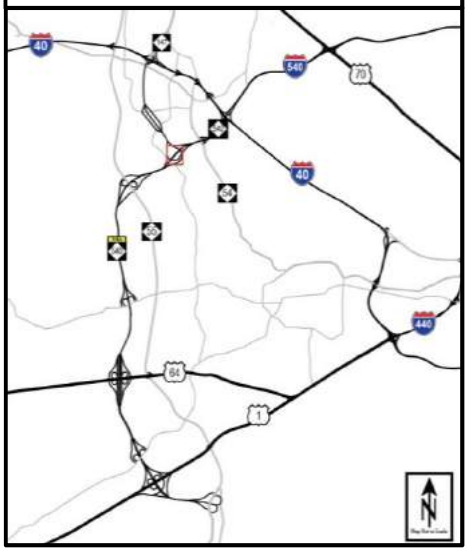
Transactions by Direction

Month	T13	T14
January	14,400	14,270
February	14,920	14,950
March	15,390	15,470
April	15,840	16,030
May	15,840	16,040
June	16,450	16,540
July	15,810	15,800
August	16,250	16,300
September	15,980	16,160
October	16,900	16,970
November	16,520	16,530
December	16,390	16,300

NC Quick Pass Percentage

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

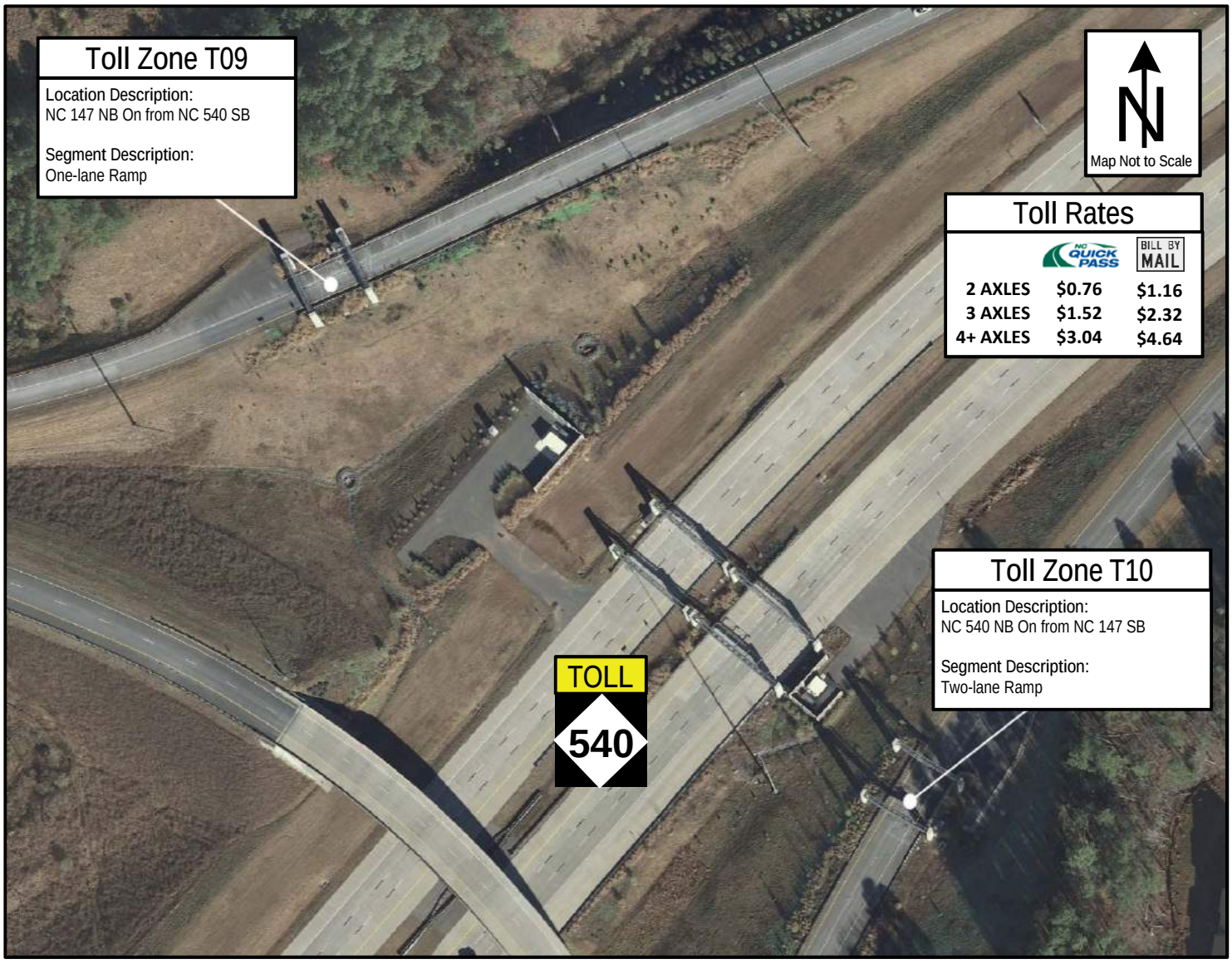
Map Locator



NC-540 Morrisville Mainline Toll Zones

2016 Average Weekday Toll Transactions

Figure 24



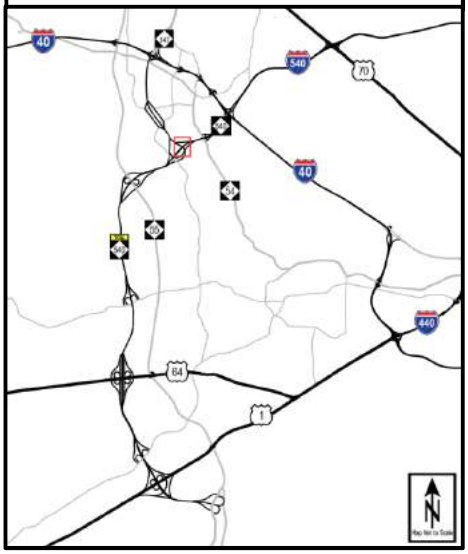
Transactions by Direction

Month	T09	T10
January	1,910	2,490
February	1,920	2,510
March	1,810	2,470
April	1,910	2,700
May	1,880	2,570
June	2,050	2,720
July	2,010	2,580
August	2,100	2,790
September	2,020	2,820
October	2,380	3,090
November	2,430	3,060
December	2,300	3,020

NC Quick Pass Percentage

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

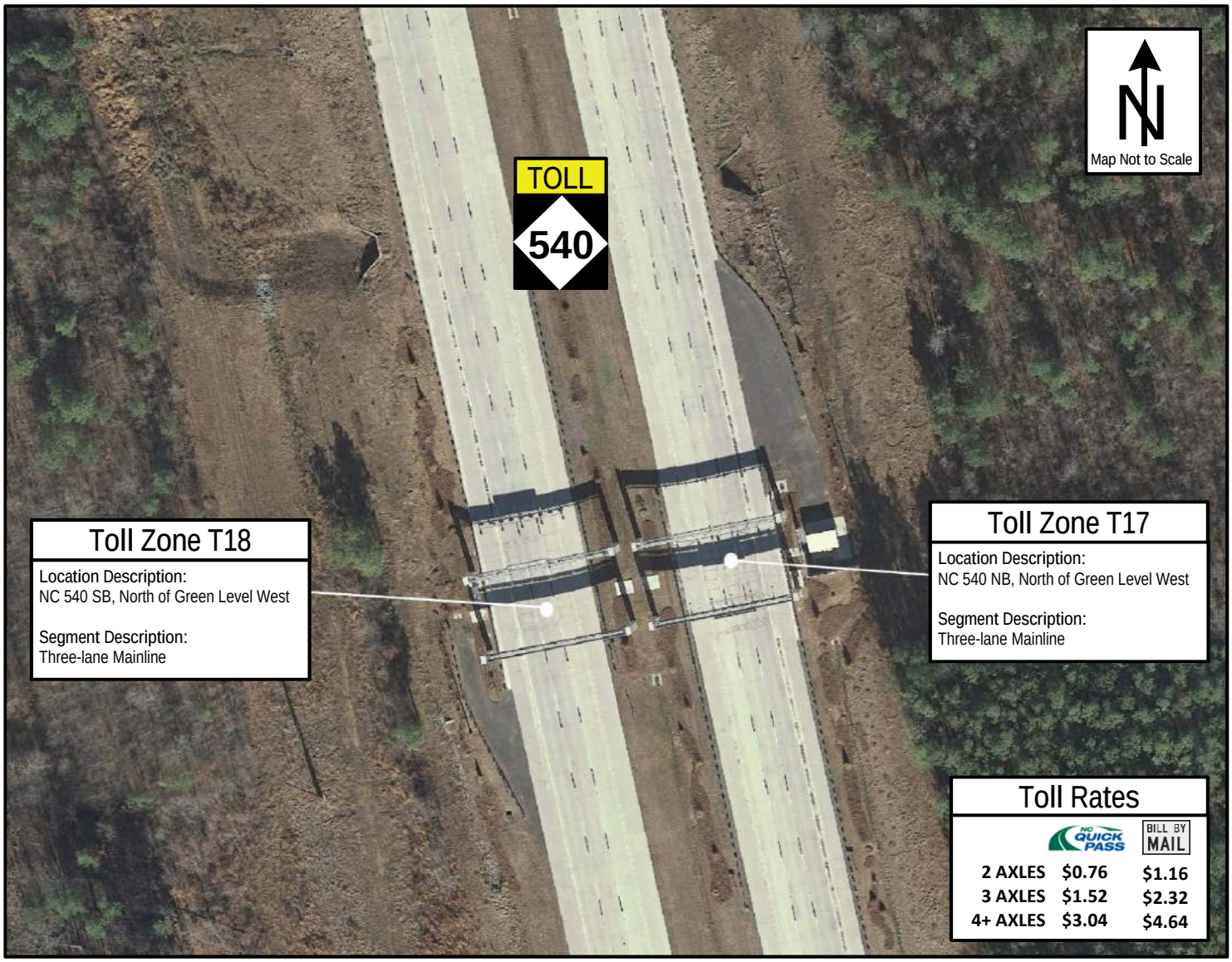
Map Locator



NC-147 North Ramp Toll Zones

2016 Average Weekday Toll Transactions

Figure 25



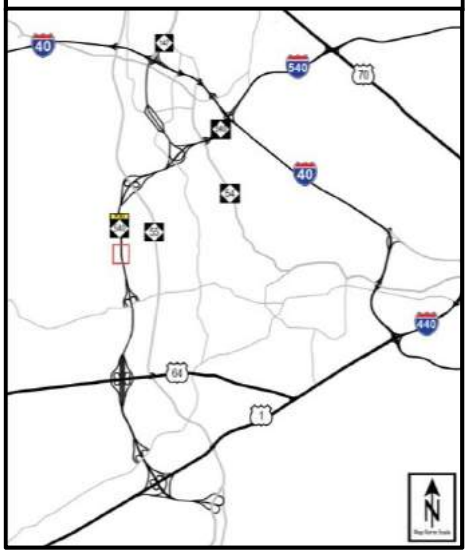
Transactions by Direction

Month	T17	T18
January	14,980	15,720
February	15,480	16,080
March	15,800	16,360
April	16,130	16,710
May	15,990	16,570
June	16,580	17,410
July	16,160	16,960
August	16,730	17,570
September	16,630	17,400
October	17,730	18,530
November	17,530	18,350
December	17,200	18,110

NC Quick Pass Percentage

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

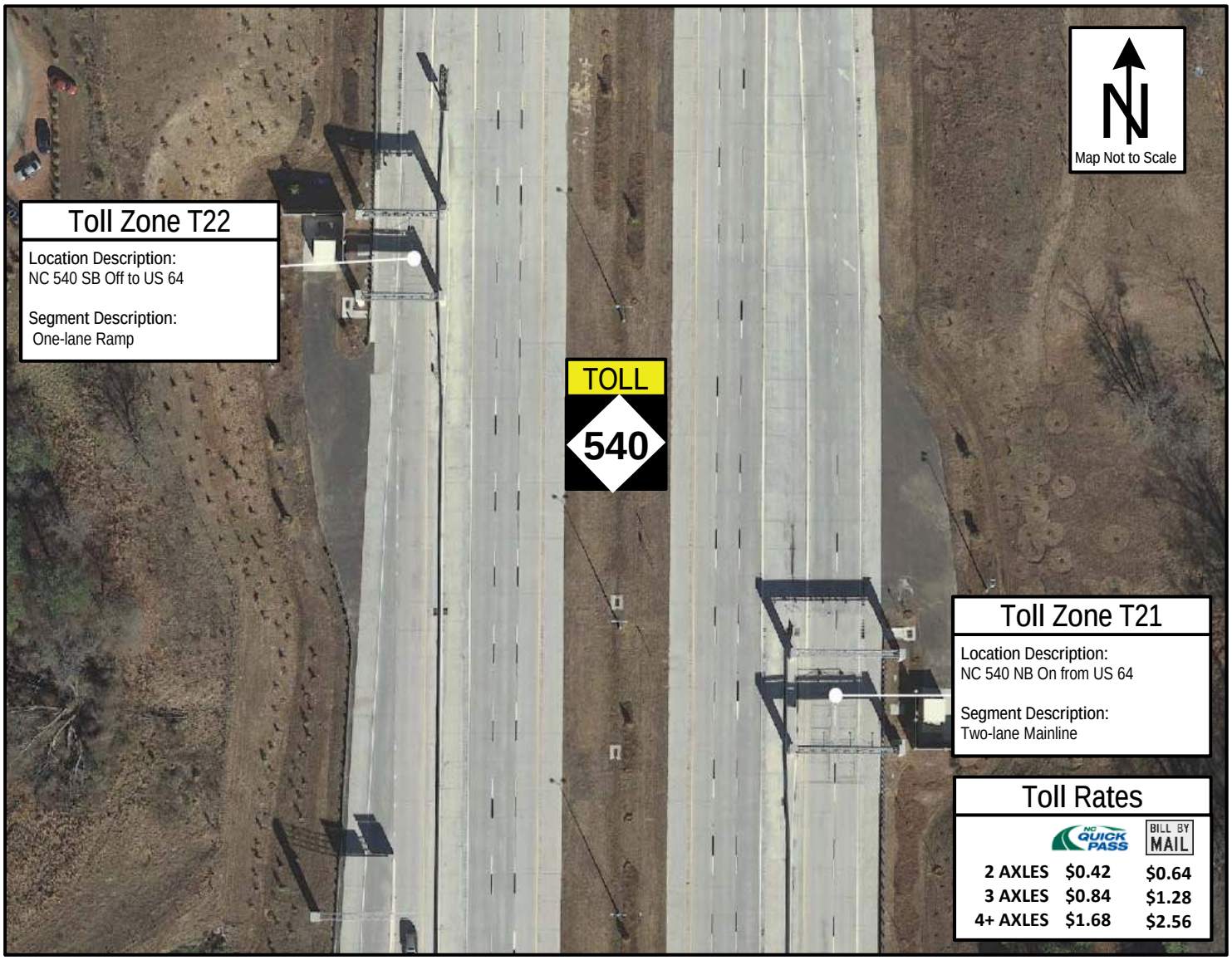
Map Locator



NC-540 Cary Mainline Toll Zones

2016 Average Weekday Toll Transactions

Figure 26



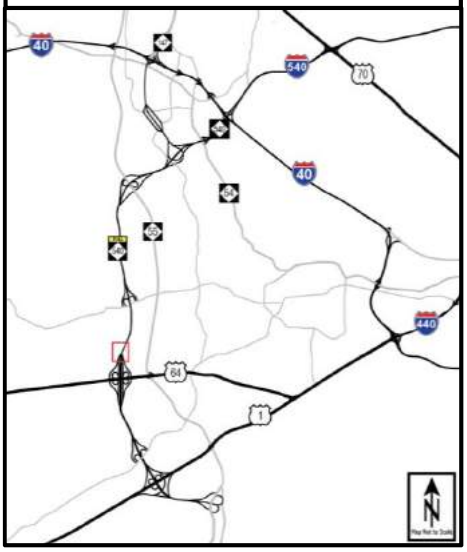
Transactions by Direction

Month	T21	T22
January	4,680	4,860
February	4,880	5,030
March	5,020	5,250
April	5,190	5,420
May	5,160	5,400
June	5,370	5,690
July	5,220	5,500
August	5,260	5,560
September	5,190	5,460
October	5,480	5,720
November	5,490	5,730
December	5,410	5,720

NC Quick Pass Percentage

Month	T21	T22
January	61%	62%
February	61%	62%
March	60%	62%
April	61%	62%
May	60%	62%
June	60%	61%
July	59%	61%
August	60%	62%
September	61%	62%
October	58%	61%
November	60%	61%
December	61%	62%

Map Locator



US-64 Ramp Toll Zones

2016 Average Weekday Toll Transactions

Figure 27

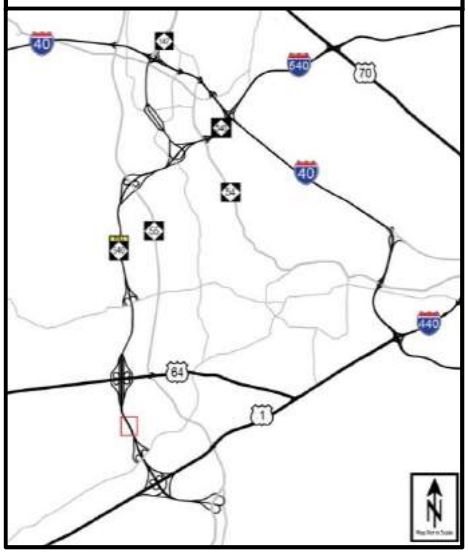
Transactions by Direction

Month	T25	T26
January	12,080	12,210
February	12,520	12,540
March	13,050	12,960
April	13,440	13,310
May	13,370	13,250
June	13,810	13,820
July	13,440	13,470
August	13,860	13,850
September	13,830	13,740
October	14,760	14,820
November	14,520	14,620
December	14,220	14,340

NC Quick Pass Percentage

Month	T25	T26
January	59%	59%
February	59%	59%
March	58%	58%
April	59%	58%
May	58%	58%
June	58%	57%
July	57%	57%
August	59%	58%
September	59%	59%
October	58%	58%
November	59%	58%
December	58%	58%

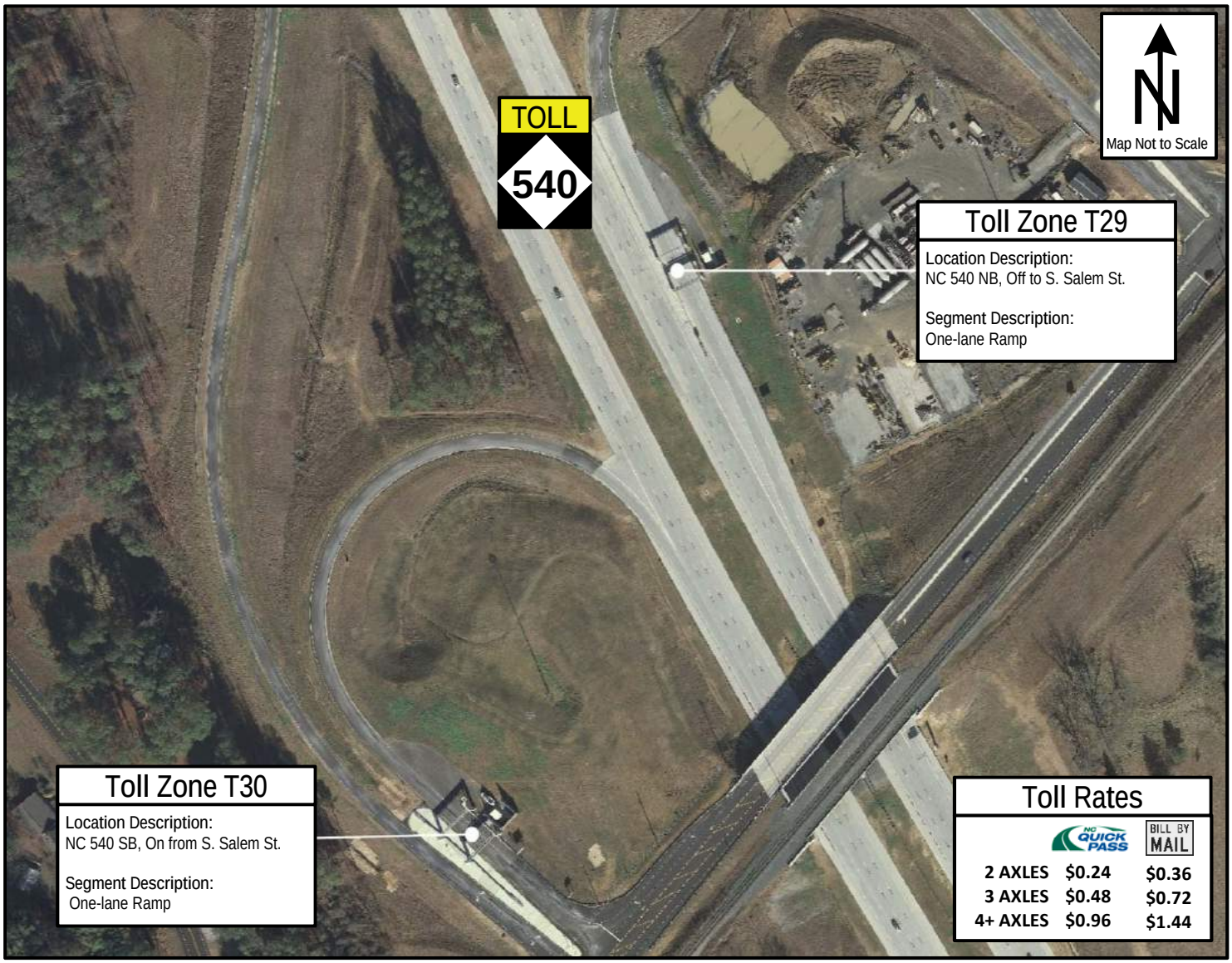
Map Locator



NC-540 Apex Mainline Toll Zones

2016 Average Weekday Toll Transactions

Figure 28



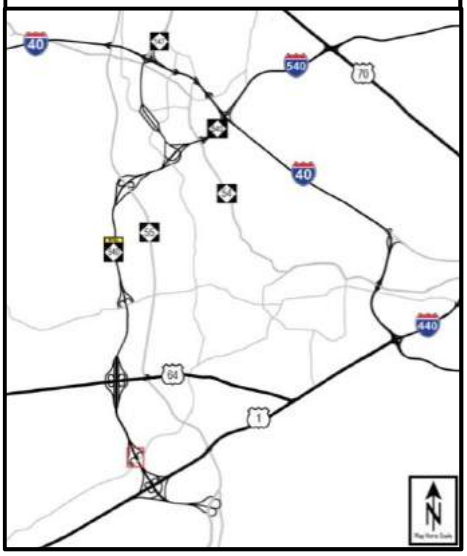
Transactions by Direction

Month	T29	T30
January	1,280	1,410
February	1,400	1,490
March	1,380	1,490
April	1,480	1,600
May	1,460	1,540
June	1,350	1,470
July	1,270	1,390
August	1,460	1,550
September	1,620	1,660
October	1,690	1,780
November	1,620	1,690
December	1,640	1,710

NC Quick Pass Percentage

Month	T29	T30
January	69%	70%
February	63%	69%
March	67%	70%
April	67%	69%
May	67%	69%
June	66%	69%
July	65%	68%
August	66%	68%
September	67%	69%
October	66%	67%
November	66%	68%
December	66%	68%

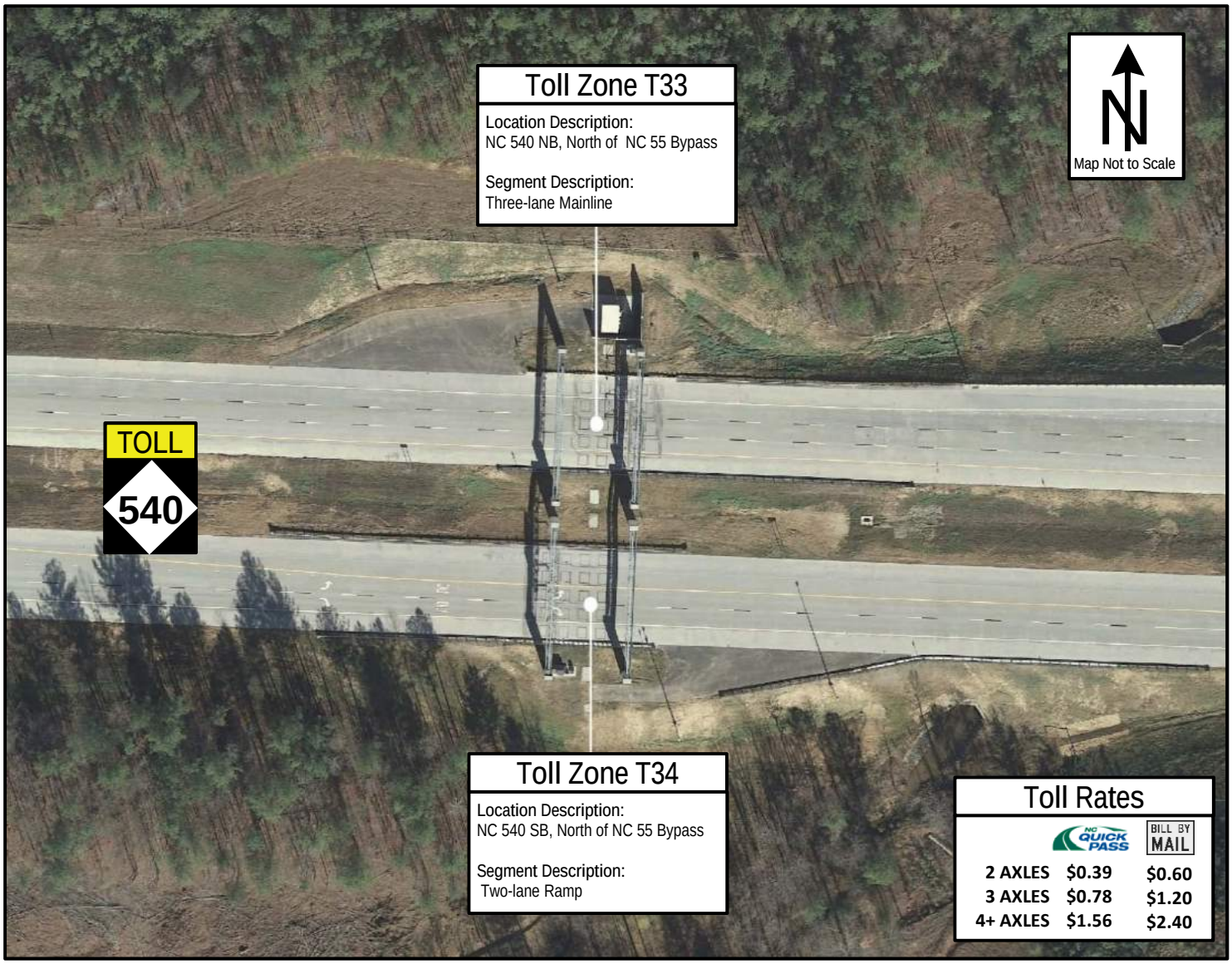
Map Locator



South Salem Street Ramp Toll Zones

2016 Average Weekday Toll Transactions

Figure 29



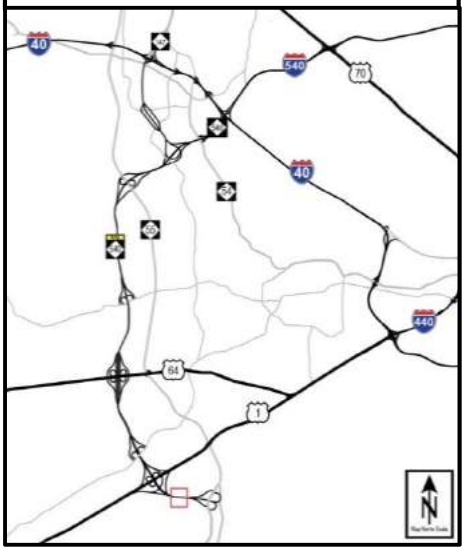
Transactions by Direction

Month	T33	T34
January	8,240	8,170
February	8,530	8,360
March	8,840	8,660
April	9,630	9,260
May	8,950	8,730
June	9,170	9,120
July	8,920	8,740
August	9,290	8,950
September	9,210	8,790
October	9,700	9,390
November	9,340	9,100
December	9,270	9,050

NC Quick Pass Percentage

Month	T33	T34
January	64%	62%
February	64%	63%
March	62%	61%
April	60%	59%
May	63%	61%
June	62%	60%
July	61%	60%
August	62%	61%
September	62%	62%
October	62%	61%
November	63%	61%
December	63%	61%

Map Locator



NC-540 Holly Springs Mainline Toll Zones

2016 Average Weekday Toll Transactions

Figure 30

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 the four segments selected, as well as for the entire facility. These Crash Rates can then be compared to the Critical Crash Rates.

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 fourth quarter, the Total Crash Rates of the four segments selected and the entire facility were calculated based on the roadway length, the annual average daily traffic (AADT), and the number of crashes recorded from December 2013 through November 2016 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 elements 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 fourth quarter analysis.

Table 14: Safety Statistics, December 2013 - November 2016

Segment	Length	AADT [1]	Total Crashes	Vehicle Exposure (MVMT)	Statewide Crash Rate [2]	Critical Crash Rate	Total Crash Rate
NC 147 I 40 to NC 540	3.1	13,000	36	44.22	97.32	99.77	**81.41**
NC 540 I 40 to NC 55	2.8	31,500	62	96.41	97.32	98.98	**64.31**
NC 540 NC 55 to US 64	6.7	23,600	76	172.60	97.32	98.56	**44.03**
NC 540 US 64 to NC 55 Bypass	5.9	17,400	39	111.67	97.32	98.86	**34.92**
Triangle Expressway	**18.4**	**21,100**	**213**	**426.08**	**97.32**	**98.11**	**49.99**

[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 Roadway Weather Information System (RWIS). Additionally, they monitor roadside 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 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 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 fourth quarter of 2016. It includes driver violations and warnings placed 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 2016. "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	54	62	76	44	48	48	37	45	53	19	55	51	**592**
Alcohol Violations	0	0	0	0	0	0	1	0	0	0	0	0	**1**
Seat Belt Violations	5	4	4	18	12	3	7	6	4	0	11	2	**76**
Child Restraint Violations	0	0	0	1	0	0	0	0	0	0	0	0	**1**
Reckless Driving	1	1	1	4	7	2	5	2	1	1	3	1	**29**
Drug Violations	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Other Violations	28	78	47	49	50	39	26	29	33	8	25	27	**439**
Total Charges	**88**	**145**	**128**	**116**	**117**	**92**	**76**	**82**	**91**	**28**	**94**	**81**	**1,138**

Table 16: SHP Non-Chargeable Activities

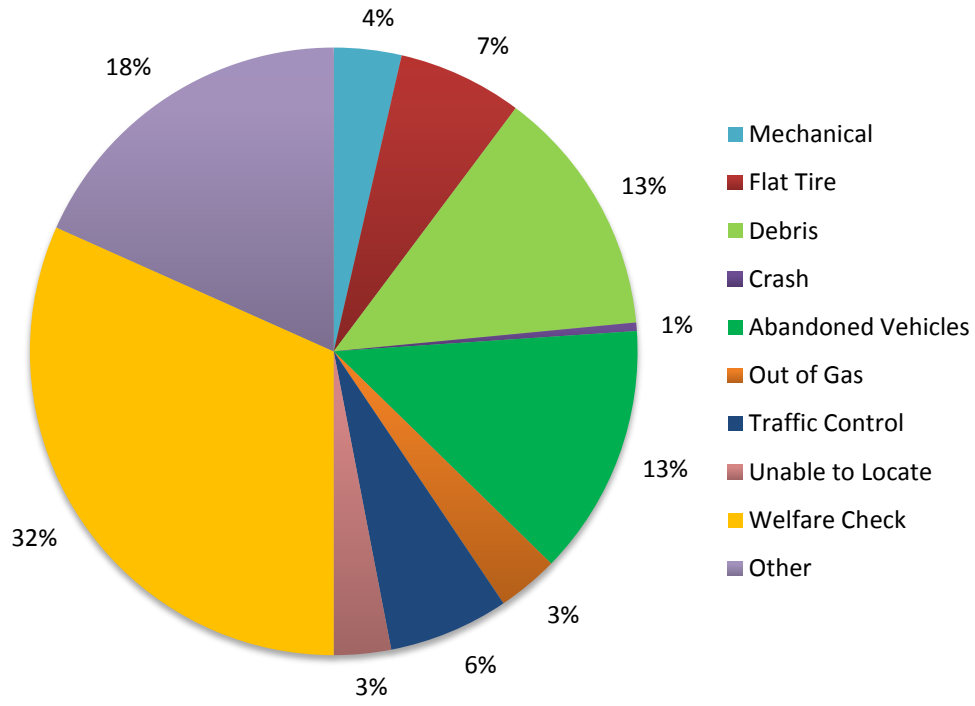
Non-Chargeable Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Warnings	53	40	56	90	57	97	54	74	55	1	40	64	**681**
Vehicles Towed	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Crashes Investigated	4	8	5	5	16	3	10	5	4	2	5	6	**73**
Total	**57**	**48**	**61**	**95**	**73**	**100**	**64**	**79**	**59**	**3**	**45**	**70**	**754**

The IMAP assists with stranded motorists and incident clearance, thereby maintaining the flow of traffic along the roadway. *Table 17* and *Figure 31* present the monthly breakdown of IMAP assists, by type, for the Triangle Expressway during 2016. 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	3	2	3	5	3	3	2	5	2	1	3	0	**32**
Flat Tire	5	1	10	3	4	2	10	9	3	2	3	7	**59**
Debris	7	9	11	9	11	11	14	6	7	9	15	9	**118**
Accident	1	1	2	0	0	0	0	0	0	0	0	0	**4**
Abandoned Vehicles	12	8	7	5	5	11	8	23	5	11	12	12	**119**
Out of Gas	2	2	7	0	4	1	4	4	1	2	2	0	**29**
Traffic Control	1	2	9	6	8	4	1	1	8	5	7	5	**57**
Unable to Locate	5	2	0	8	2	1	0	3	0	0	0	6	**27**
Welfare Check	4	17	22	9	38	26	36	20	25	12	27	46	**282**
Other	13	6	14	3	28	14	18	9	15	32	9	2	**163**
Total Assist	**53**	**50**	**85**	**48**	**103**	**73**	**93**	**80**	**66**	**74**	**78**	**87**	**890**

Figure 31: 2016 IMAP Assistance by Type



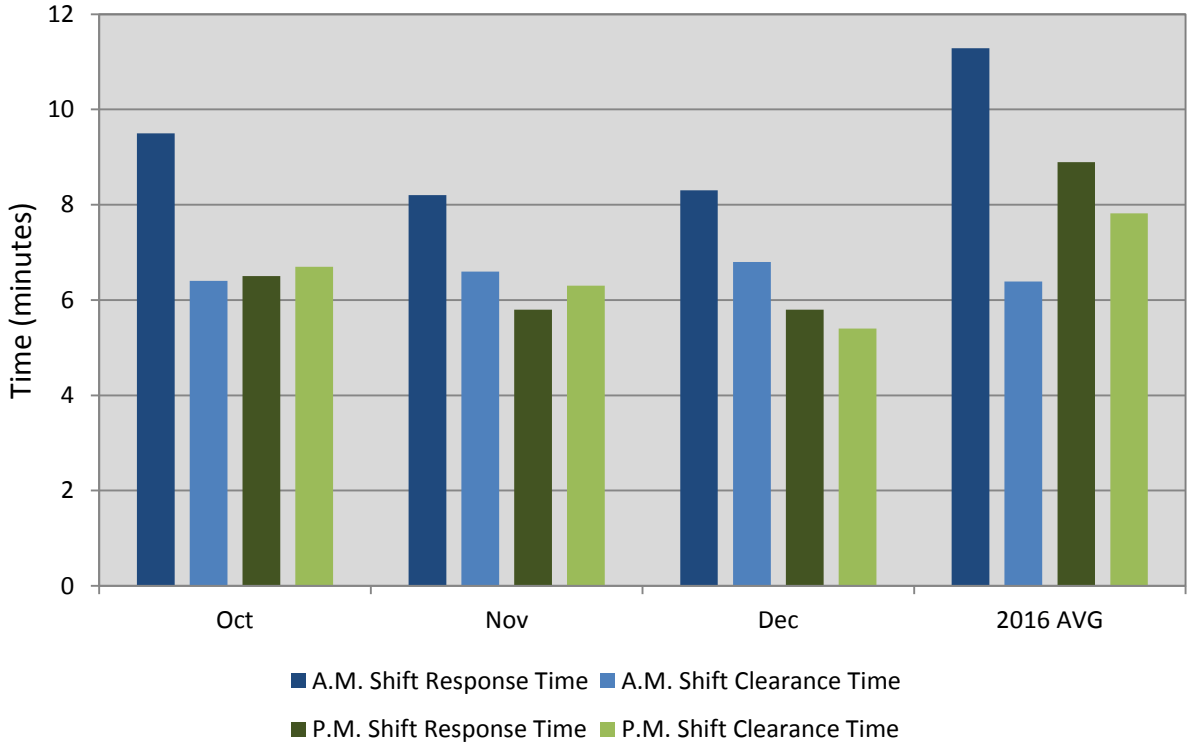
The response and clearance times for all IMAP assists are logged by IMAP and provided to the NCTA. Response time is the time from which a responder receives a call to the time they arrive on the scene. Clearance time is the time it takes the responder to clear the incident and return the roadway to normal 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 32* 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	2016 Average
A.M. Shift Response	12	12	16	11	12	14	14	10	8	10	8	8	**11**
A.M. Shift Clearance	6	5	11	6	9	6	4	5	6	6	7	7	**6**
P.M. Shift Response	13	10	11	8	11	12	10	7	6	7	6	6	**9**
P.M. Shift Clearance	7	10	10	6	11	7	8	9	8	7	6	5	**8**

Figure 32: Average IMAP Assistance Response and Clearance Times



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 was scheduled to be completed for each newly opened roadway section, soon after opening to toll collection. The baseline assessments included complete inventory data collection and assessment on 100% of the roadway assets.

After the initial baseline assessment was completed, future assessments for that segment switched 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 2016 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 2016 Annual Rating will provide a 95% confidence level in statistical sampling.

Table 19: MRP Assessment Results

Element	Q1 2016 Rating	Q2 2016 Rating	Q3 2016 Rating	Q4 2016 Rating	2016 Annual Rating
Road Surface	98.3	100.0	99.1	97.7	98.8
Unpaved Shoulders and Ditches	97.7	100.0	100.0	100.0	99.4
Drainage	92.6	91.0	87.9	93.8	91.3
Roadside	92.1	83.4	90.0	93.7	89.9
Traffic Control Devices	93.5	96.1	90.5	88.3	92.0
Overall MRP Performance Rating	**94.9**	**94.7**	**93.4**	**93.9**	**94.2**