



NORTH CAROLINA

Turnpike Authority

2013 Operations Statistics Report

Triangle Expressway

First Quarter

1 S. Wilmington Street
Raleigh, NC 27601



Last Updated:
April 19, 2013

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INTRODUCTION

Purpose

The purpose of this report is to provide various North Carolina Turnpike Authority (NCTA) operations related performance metrics of the Triangle Expressway for the first quarter of 2013. The summarized data will provide a general overview of traffic statistics, toll system statistics, roadway operations and maintenance operations for the entire facility. Future reports will compare monthly and annual statistical trends over time to show the progression of the roadway.

Project

The Triangle Expressway

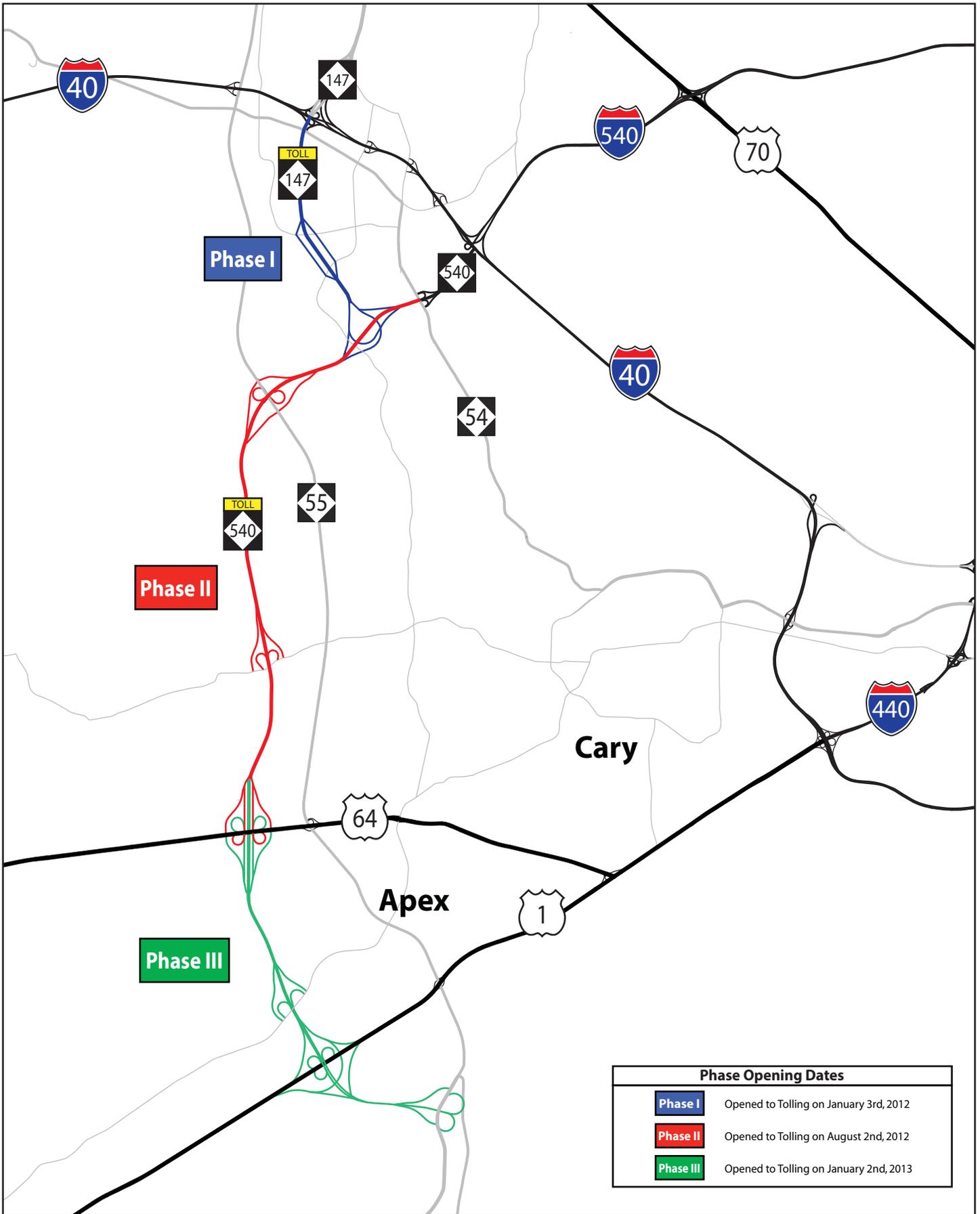
The Triangle Expressway is an 18.8 mile toll road that extends the partially complete “Outer Loop” around the greater Raleigh, North Carolina area from I-40 to the NC-55 Bypass in Holly Springs. The controlled access, six-lane toll facility relieves congestion on the paralleling NC-55 facility, while 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 elements; Toll NC-147 and Toll NC-540.

Toll NC-147 includes 3.4 miles of new construction between the existing interchange of NC-147 and I-40 and existing NC-540. This section of the Triangle Expressway (Phase I) includes interchanges at Hopson Road, Davis Drive, and NC-540 and opened to toll-free traffic on December 8, 2011. Tolling on this section began on January 3, 2013.

Toll NC-540 includes 12.6 miles of new construction between NC-55 in western Cary and the NC-55 Bypass near the Town of Holly Springs. Phase II of the Triangle Expressway, from NC-55 to US-64, opened on August 1, 2012 (tolling began August 2, 2012) and includes interchanges at NC-55, Green Level West Road, and US-64. The segment of NC-540 between NC-55 and NC-54, herein referred to as 540P, was opened in 2007 as a toll-free facility and is 2.8 miles in length. As part of the Triangle Expressway project, 540P began operating as a tolled facility with the opening of Phase II (August 2, 2013). The final phase, Phase III, opened to traffic from US-64 to NC-55 Bypass on December 20th, 2012, with tolling beginning on January 2, 2013. This phase includes interchanges at S. Salem St., US-1, and NC-55 Bypass.

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 video billing program called Bill by Mail.

NCTA toll zones are located along the Triangle Expressway at mainline and interchange ramp locations to ensure that there are no non-tolled trips. An illustration of the designated phases for the Triangle Expressway can be seen in *Figure 1* on the following page.



Triangle Expressway Phase 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 facility. The data gives an overview of the current utilization of the roadway. The data can also be analyzed to identify trends that could be used to determine a more accurate estimate of the future utilization of these facilities.

It should be noted that due to the recent completion of the Triangle Expressway that the facility is currently experiencing 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 found at an existing facility. The growth rates increase as the customers become more familiar with the facility. The ramp-up period is expected to continue through 2014.

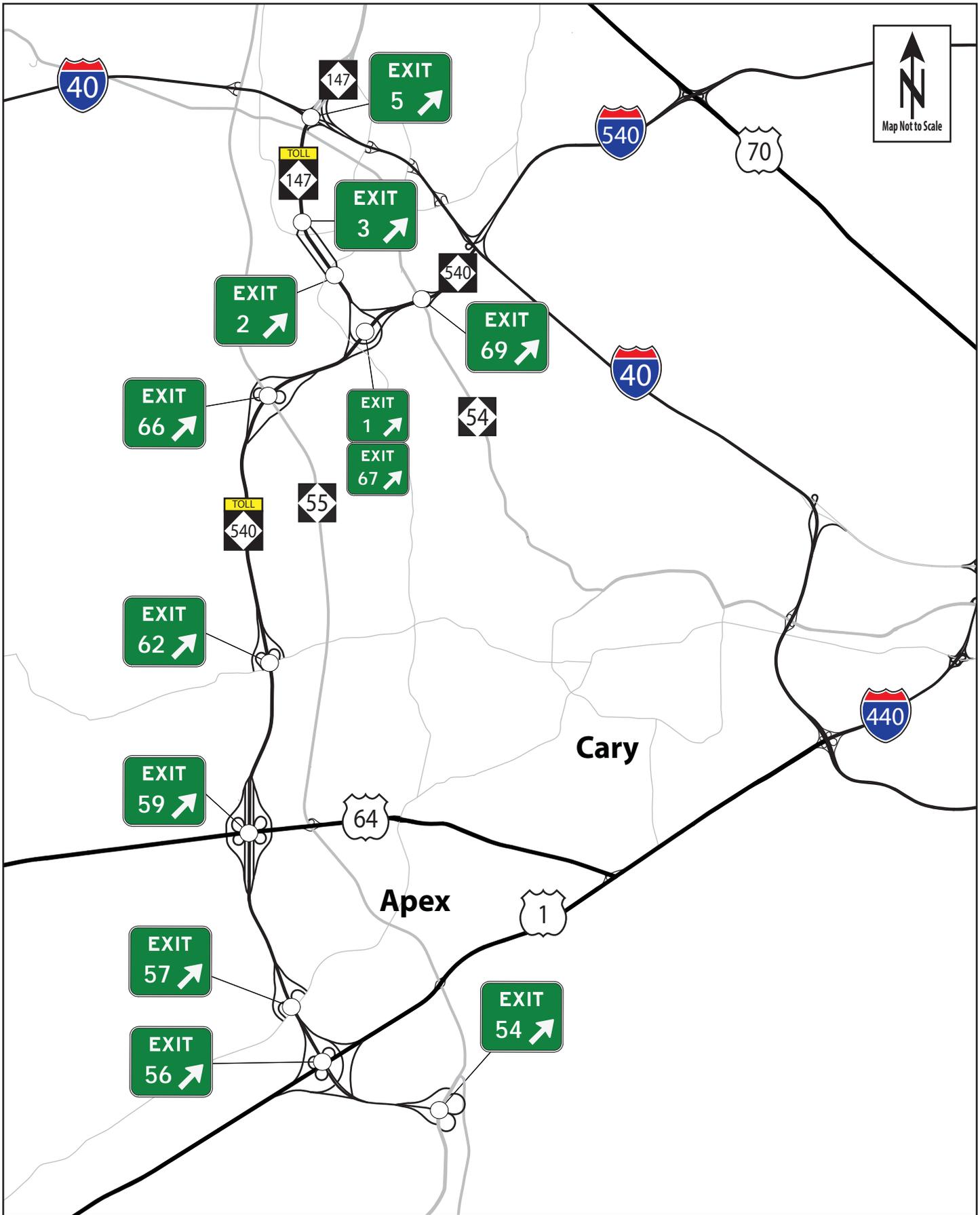
Average Weekday Traffic

Traffic volume data is collected on all mainline segments between interchanges and on all ramp locations. Typically there is a large difference between peak and off-peak volumes, as well as between weekday and weekend volumes. However, this gap becomes even larger for a tolled facility. This is due to the fact that toll roads tend to have a much higher percentage of traffic occurring during peak hours when compared to a normal roadway, as there is less of a benefit for toll users during off-peak hours. For these reasons, average weekday traffic (AWT) is reported instead of average daily traffic (ADT). AWT is a measure of the average daily traffic on a typical Monday through Friday over a designated time period.

Interchange Statistics

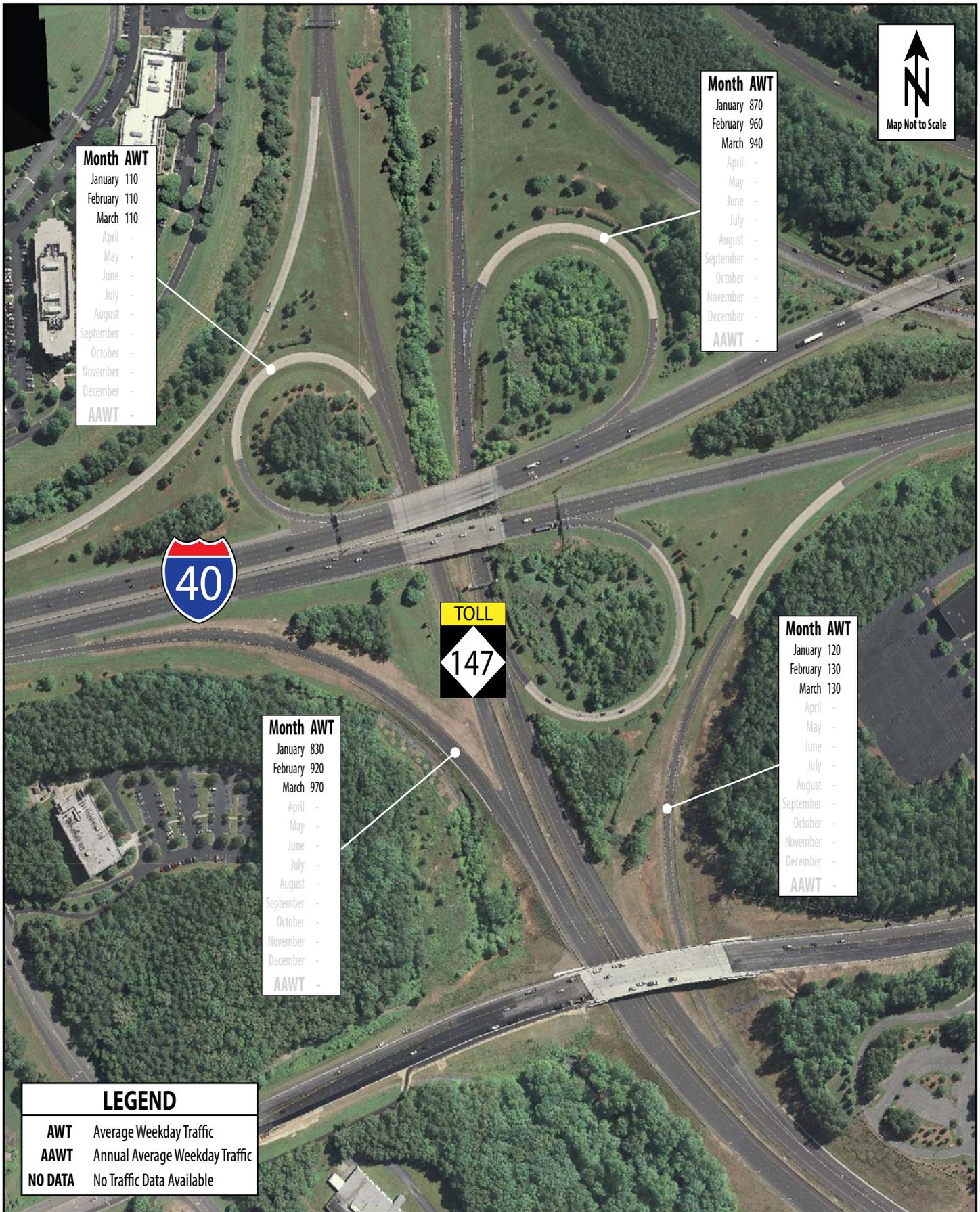
The following pages contain visual representations of AWT for all interchanges along the facility and are representative of NCTA's MVD data. The location of the interchanges in relation to the entire expressway can be seen on the following page in *Figure 3*.

For the newly constructed segments of the Expressway, data could not be considered reliable until the MVD units could be tested under normal traffic conditions. This calibration and testing period concluded no later than 60 days after the road in question opened to traffic. All MVD data has been screened and any unreliable data has been removed from use in the AWT calculations. If there are not enough reliable days (5) for a particular month to report an AWT, then that MVD will report "NO DATA."



Triangle Expressway Interchange Map

Figure 2



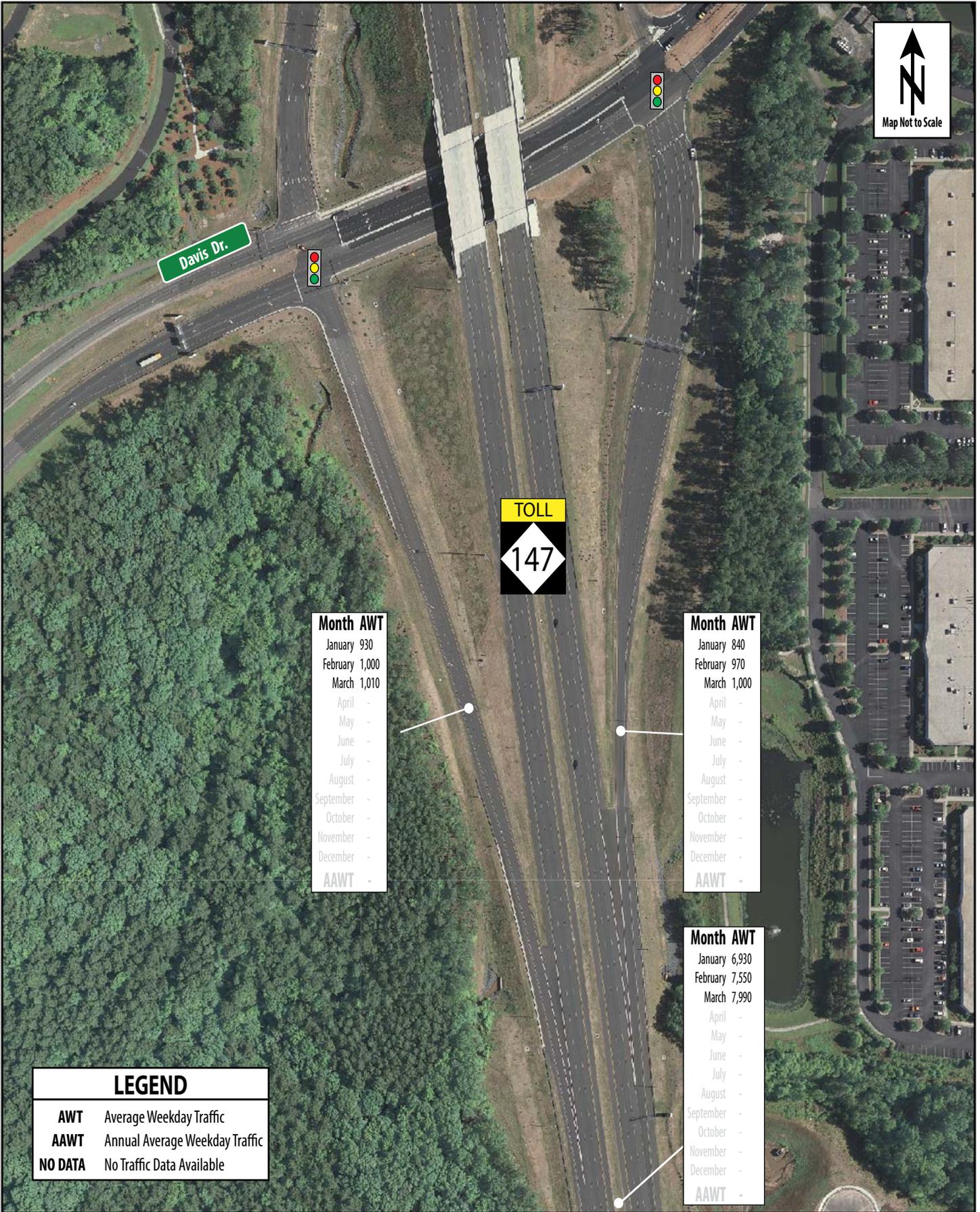
NC-147 at I-40 Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
3



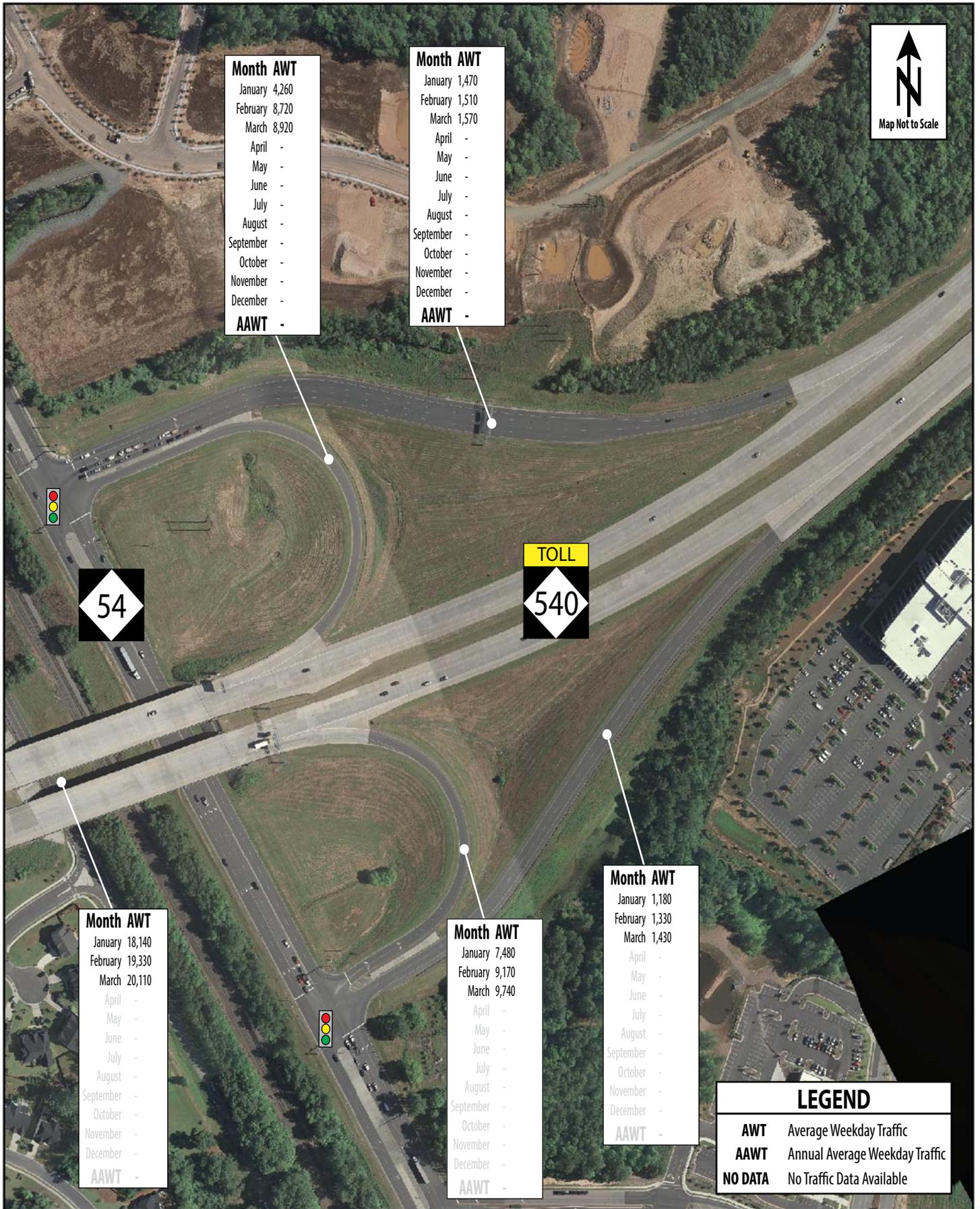
NC-147 at Hopson Rd. Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
4



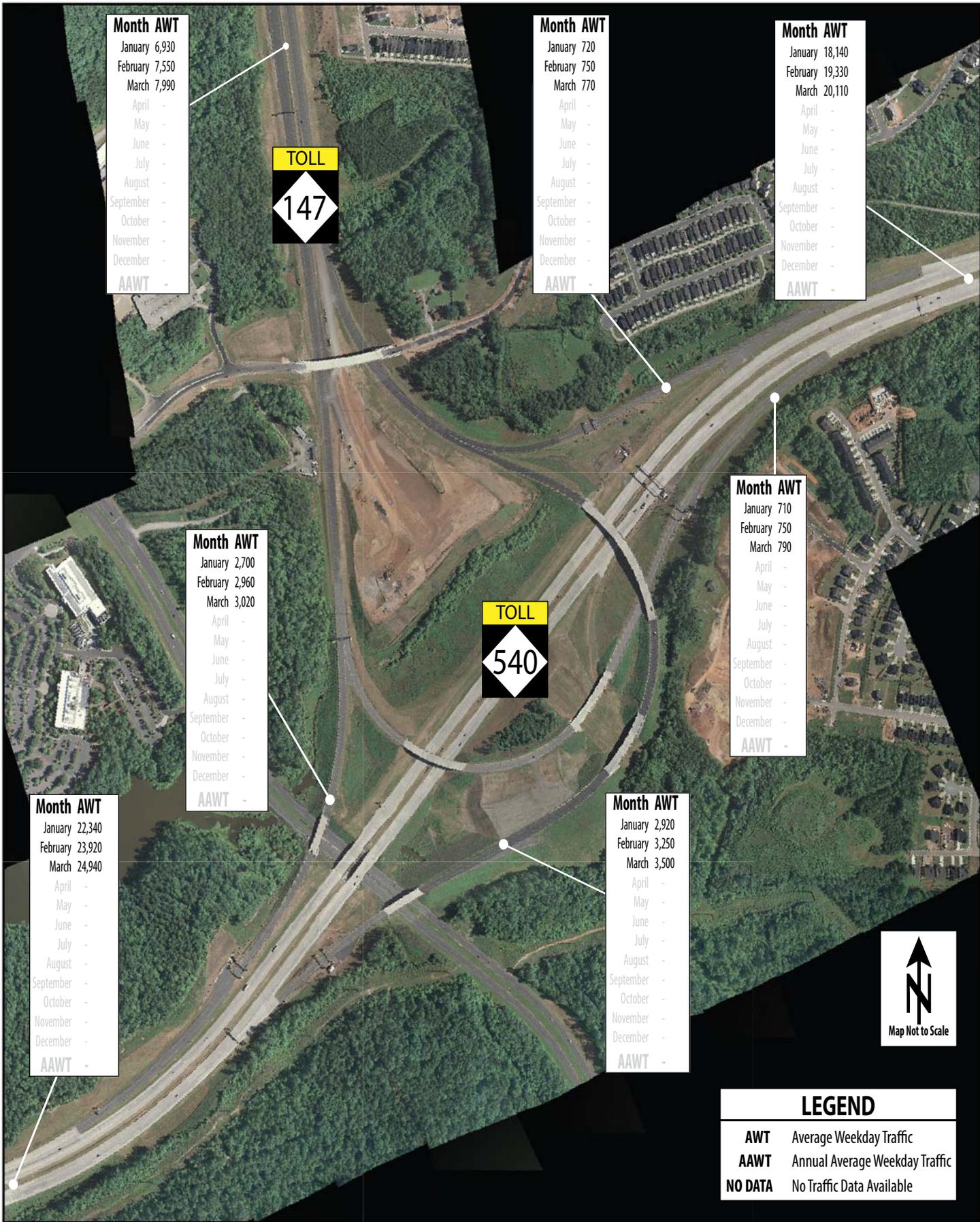
NC-147 at Davis Dr. Interchange
First Quarter 2013 Average Weekday Traffic

Figure
5



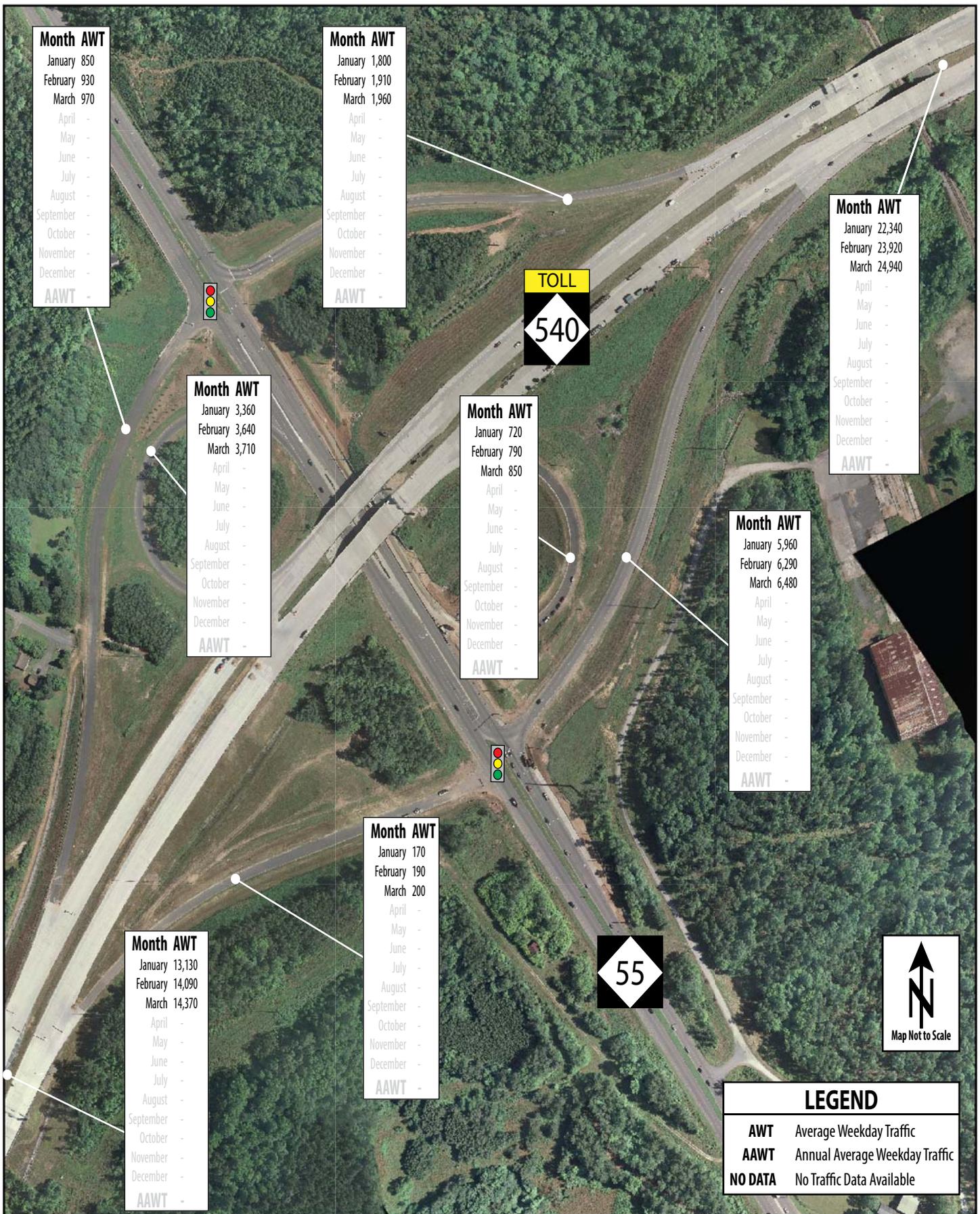
NC-540 at NC-54 Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
6



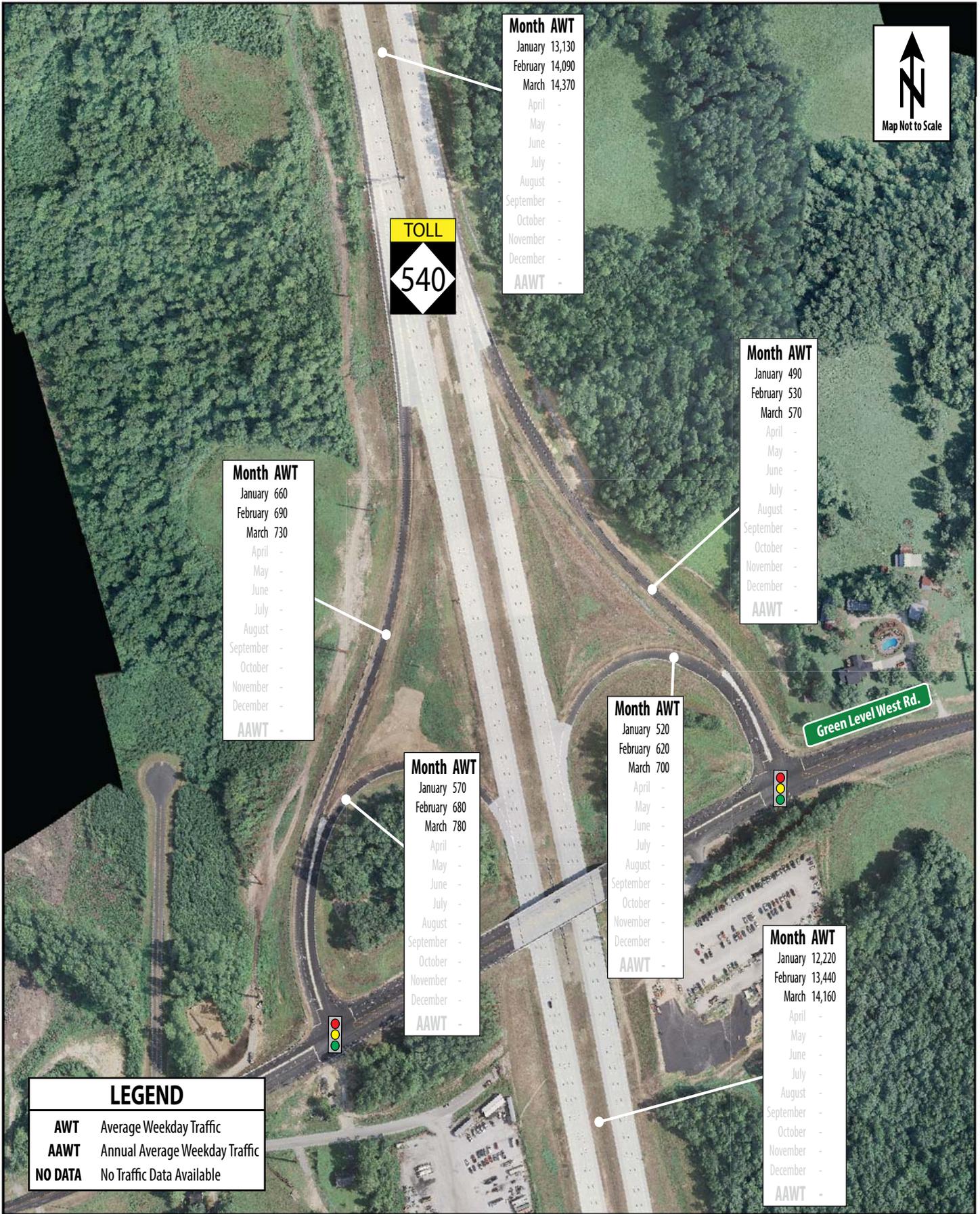
NC-540 at NC-147 Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
7



NC-540 at NC-55 Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
8



NC-540 at Green Level West Rd. Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
9



Month AWT	
January	8,750
February	9,690
March	10,390
April	-
May	-
June	-
July	-
August	-
September	-
October	-
November	-
December	-
AAWT	-

Month AWT	
January	350
February	410
March	450
April	-
May	-
June	-
July	-
August	-
September	-
October	-
November	-
December	-
AAWT	-

Month AWT	
January	440
February	450
March	480
April	-
May	-
June	-
July	-
August	-
September	-
October	-
November	-
December	-
AAWT	-



Month AWT	
January	290
February	350
March	450
April	-
May	-
June	-
July	-
August	-
September	-
October	-
November	-
December	-
AAWT	-

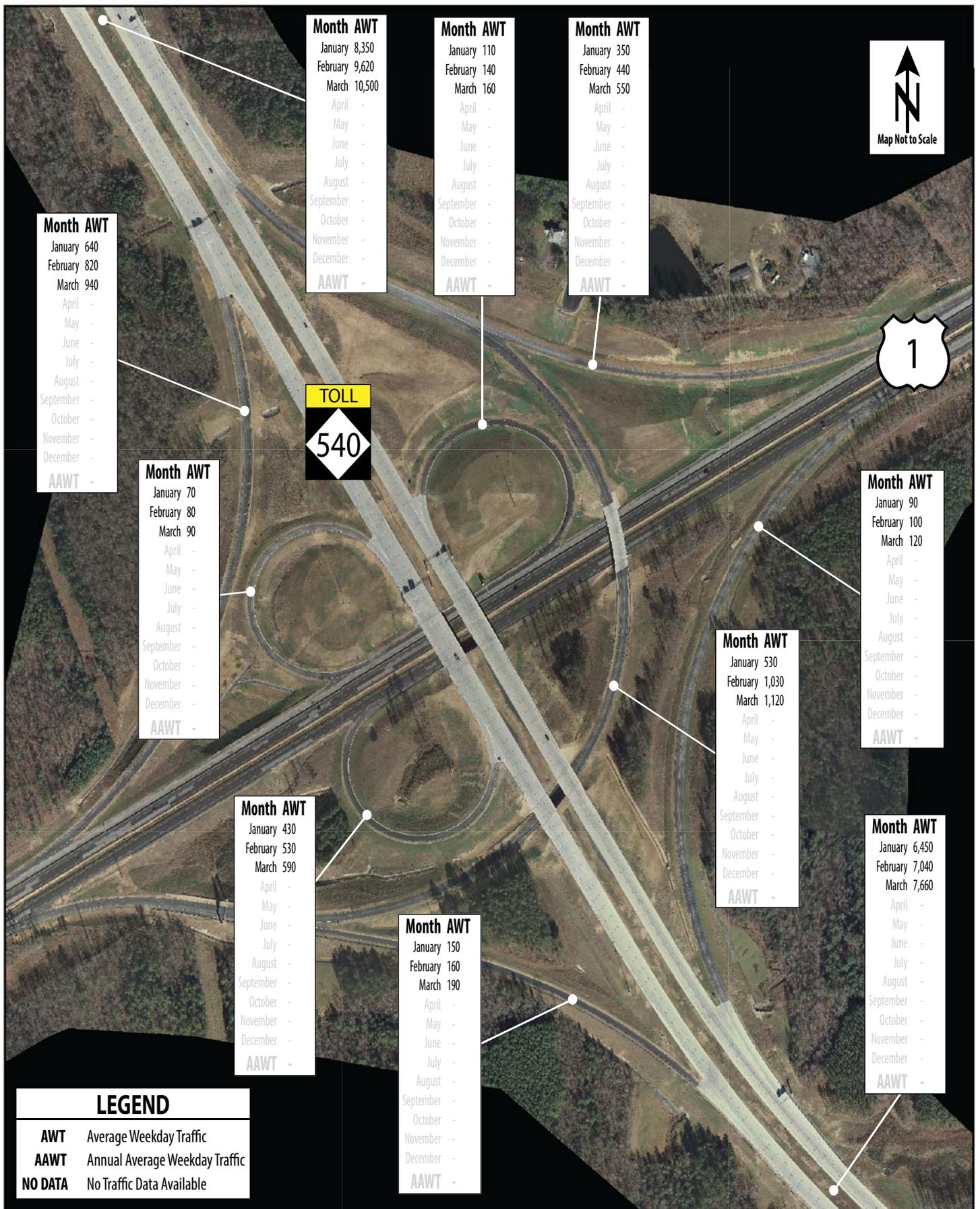
Month AWT	
January	320
February	380
March	450
April	-
May	-
June	-
July	-
August	-
September	-
October	-
November	-
December	-
AAWT	-

Month AWT	
January	8,350
February	9,620
March	10,500
April	-
May	-
June	-
July	-
August	-
September	-
October	-
November	-
December	-
AAWT	-

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

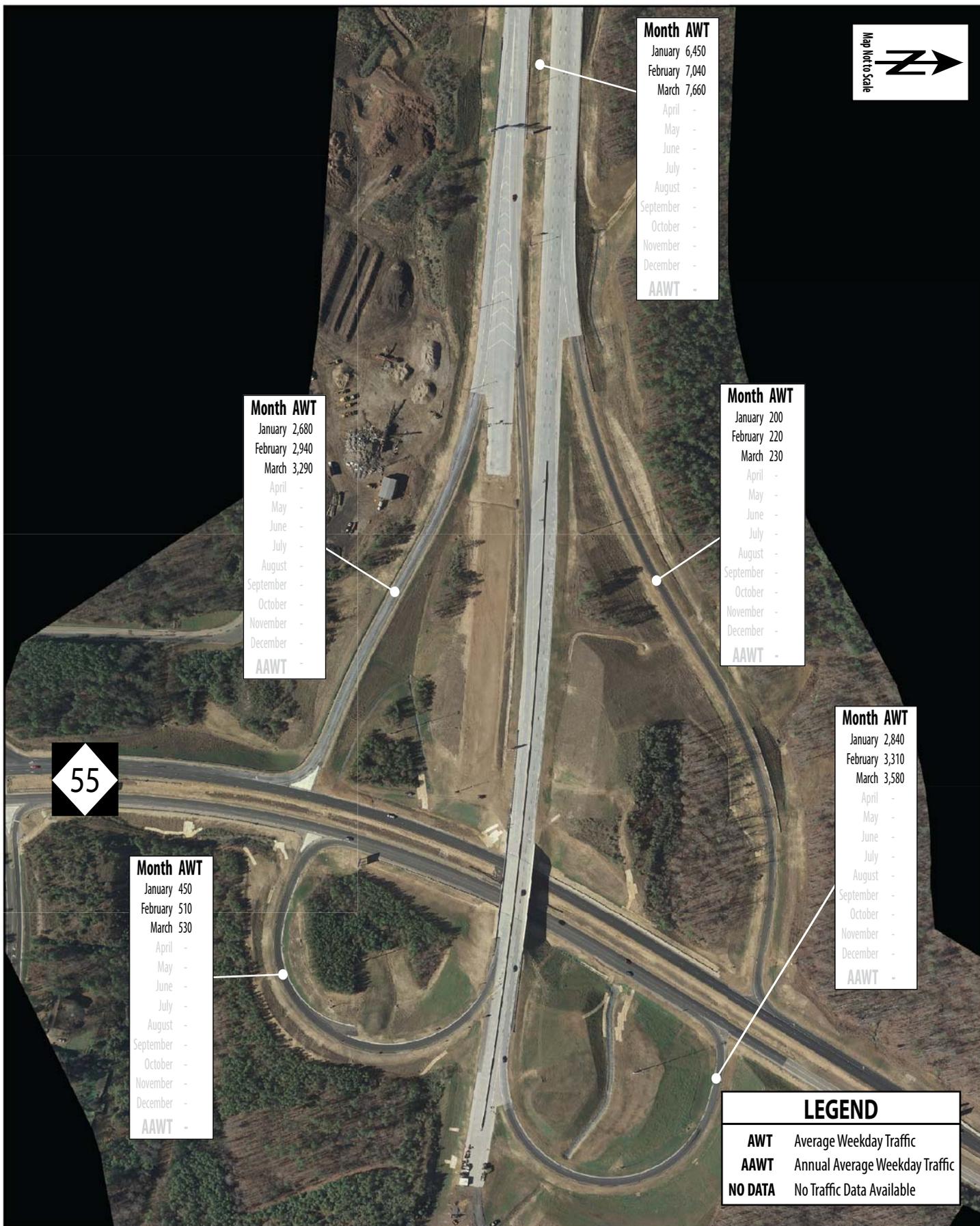
NC-540 at S. Salem St. Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
11



NC-540 at US-1 Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
12



NC-540 at NC-55 Bypass Interchange
 First Quarter 2013 Average Weekday Traffic

Figure
13

Toll System Statistics

TOLL SYSTEM STATISTICS

Current and historical toll system data is collected and reported through the NC Quick Pass Customer Service Center (CSC). The data provides 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 placed throughout the facility using an all-electronic tolling (AET) method. Toll gantries and the roadside toll vaults house the AET equipment.

Weekly and Monthly Statistics

The statistics provided in the following section combine roadway and customer service data and reflect the overall Triangle Expressway facility. An overview of the data provided on the following pages is provided below:

- Total Monthly Transactions
- Total Monthly Transactions by Percentage
- Total Monthly Classification
- Cumulative Monthly Accounts Established NC Quick Pass Accounts
- Total Monthly Transponders Sold by Type

Table 1 presents a summary of the total monthly transactions for NC Quick Pass and Bill by Mail payment methods.

Table 1: Total Weekly Transactions

Week Ending	Transponder (NC Quick Pass)	Video (Bill by Mail)	Total
1/6/2013*	119,028	124,059	243,087
1/13/2013	199,109	171,635	370,744
1/20/2013	196,210	163,985	360,195
1/27/2013	184,387	151,861	336,248
2/3/2013	211,764	167,602	379,366
2/10/2013	211,893	177,376	389,269
2/17/2013	219,379	169,144	388,523
2/24/2013	217,366	168,147	385,513
3/3/2013	228,445	174,128	402,573
3/10/2013	235,784	175,330	411,114
3/17/2013	236,646	179,447	416,093
3/24/2013	241,436	176,280	417,716
3/31/2013	229,226	174,580	403,806

*This week represents 1/1/13-1/6/2013, which is a Tuesday through Sunday

Table 2 presents a summary of the monthly system transactions, by volume, for NC Quick Pass and Bill by Mail transactions.

Table 2: Total Monthly Transactions

Month	Transponder (NC Quick Pass)	Video (Bill by Mail)	Total
January	845,042	715,570	1,560,612
February	872,106	684,355	1,556,461
March	1,013,525	773,649	1,787,174

Table 3 presents a summary of the total monthly transactions, by percentage, for NC Quick Pass and Bill by Mail transactions.

Table 3: Total Weekly Transactions by Percentage

Week Ending	Transponder (NC Quick Pass)	Video (Bill by Mail)
1/6/2013*	49%	51%
1/13/2013	54%	46%
1/20/2013	54%	46%
1/27/2013	55%	45%
2/3/2013	56%	44%
2/10/2013	54%	46%
2/17/2013	56%	44%
2/24/2013	56%	44%
3/3/2013	57%	43%
3/10/2013	57%	43%
3/17/2013	57%	43%
3/24/2013	58%	42%
3/31/2013	57%	43%

*This week represents 1/1/13-1/6/2013, which is a Tuesday through Sunday

Figure 14 presents a visual summary of the total monthly transactions for NC Quick Pass and Bill by Mail transactions.

Figure 14: Total Monthly Transactions

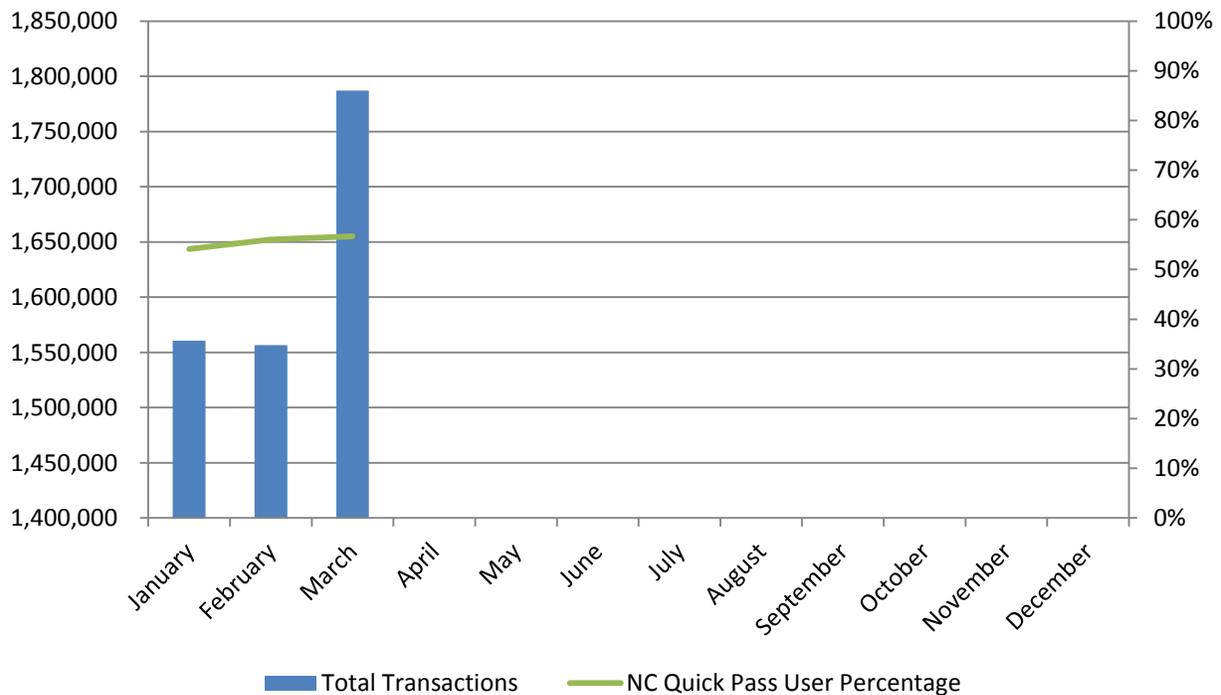


Table 4 presents a summary of the total monthly classification for Class 1 (2-axle), Class 2 (3-axle) and Class 3 (4+axle) vehicles.

Table 4: Total Weekly Classification

Week Ending	Class 1 (2-axle)	Class 2 (3-axle)	Class 3 (4+axle)	Total
1/6/2013*	238,005	1,754	3,328	243,087
1/13/2013	361,700	3,085	5,959	370,744
1/20/2013	352,642	2,645	4,908	360,195
1/27/2013	327,377	3,048	5,823	336,248
2/3/2013	370,120	2,942	6,304	379,366
2/10/2013	378,560	3,506	7,203	389,269
2/17/2013	379,161	2,968	6,394	388,523
2/24/2013	375,845	3,315	6,353	385,513
3/3/2013	391,877	3,495	7,201	402,573
3/10/2013	397,788	4,682	8,644	411,114
3/17/2013	402,772	4,623	8,698	416,093
3/24/2013	403,603	4,724	9,389	417,716
3/31/2013	391,081	4,426	8,299	403,806

*This week represents 1/1/13-1/6/2013, which is a Tuesday through Sunday

Figure 15 represents a summary of the total monthly transactions for Class 1 (2-axle) vehicles.

Figure 15: Total Monthly Class 1 Percentage

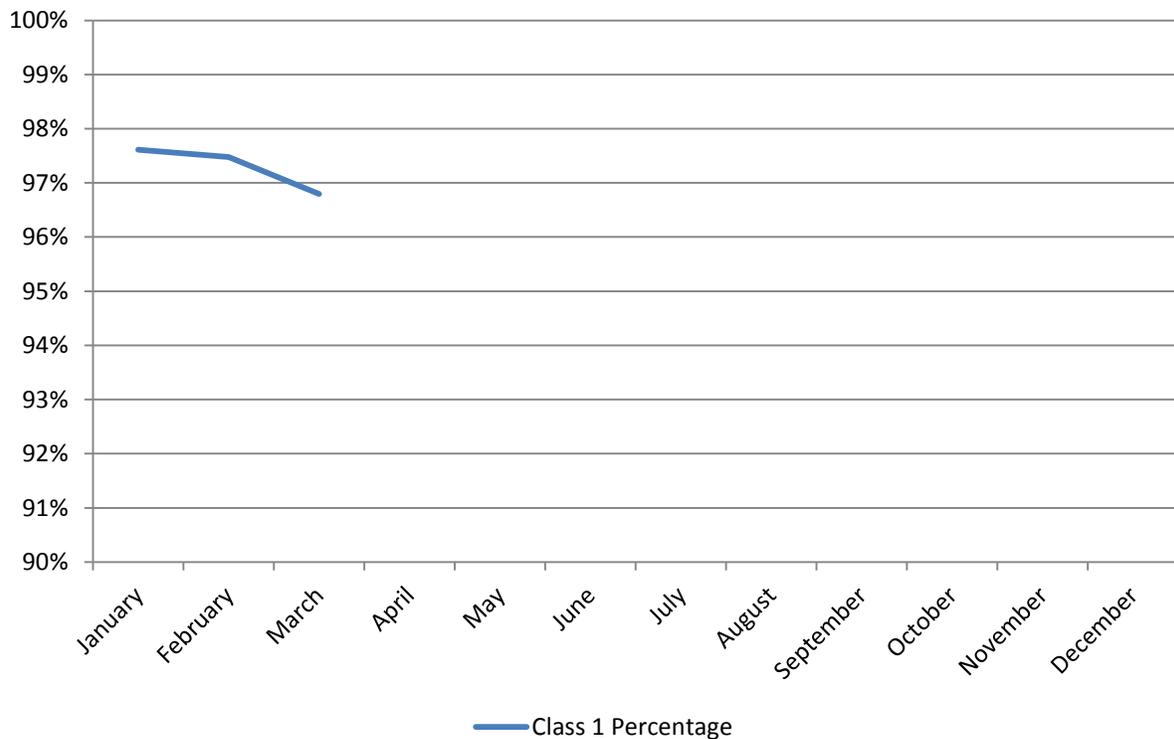


Table 5 presents a summary of the cumulative monthly established accounts being managed by NC Quick Pass.

Table 5: Cumulative Weekly Established NC Quick Pass Accounts by Type

Month	Transponder (NC Quick Pass)	Unregistered Video	Registered Video	Non-Revenue	Government	Total
1/6/2013*	28,108	364,121	5	38	19	392,291
1/13/2013	29,002	369,484	5	38	19	398,548
1/20/2013	29,865	374,605	5	38	19	404,532
1/27/2013	30,548	378,095	5	38	19	408,705
2/3/2013	31,303	383,123	5	38	19	414,488
2/10/2013	32,073	387,980	5	39	19	420,116
2/17/2013	32,718	393,521	5	40	19	426,303
2/24/2013	33,385	398,849	5	42	19	432,300
3/3/2013	34,004	404,144	5	42	20	438,215
3/10/2013	34,609	409,930	5	42	20	444,606
3/17/2013	35,110	416,197	5	46	21	451,379
3/24/2013	35,582	421,351	4	46	21	457,004
3/31/2013	36,122	427,581	4	47	21	463,775

*This week represents 1/1/13-1/6/2013, which is a Tuesday through Sunday

Figure 16 presents a visual summary of the cumulative monthly established accounts being managed by NC Quick Pass.

Figure 16: Cumulative Monthly Established NC Quick Pass Accounts

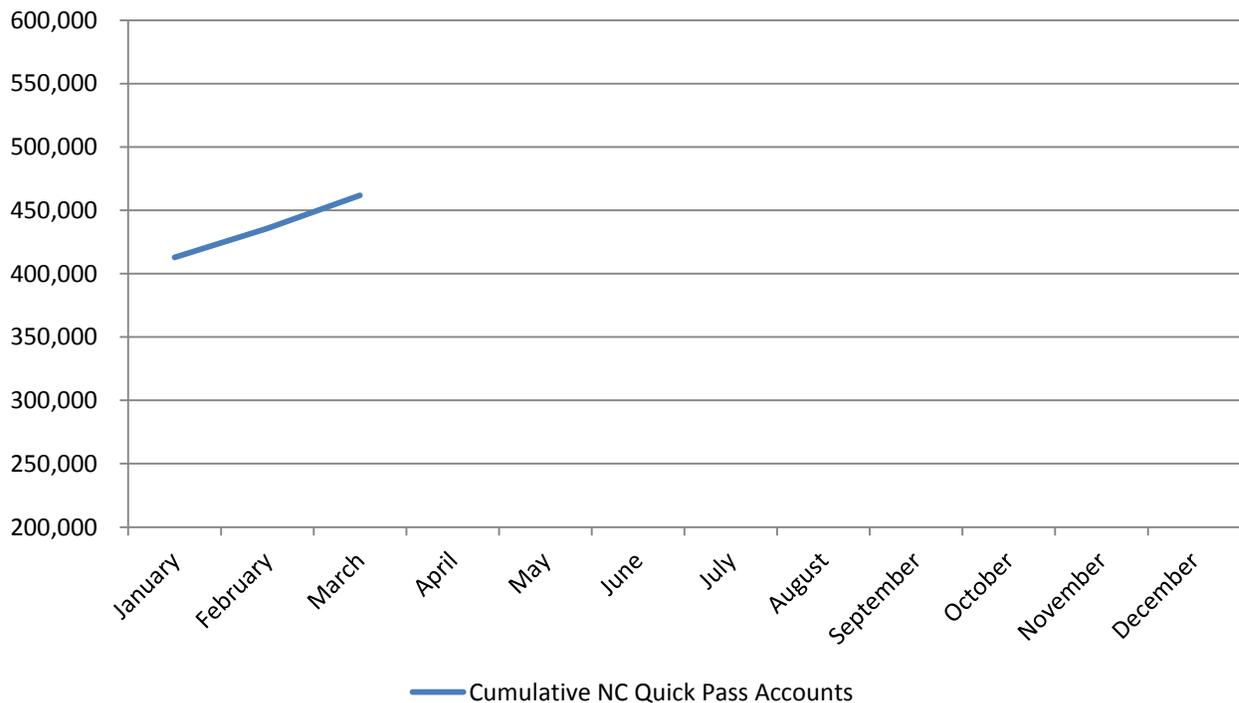


Table 6 presents a summary of the total transponder types sold, by week ending.

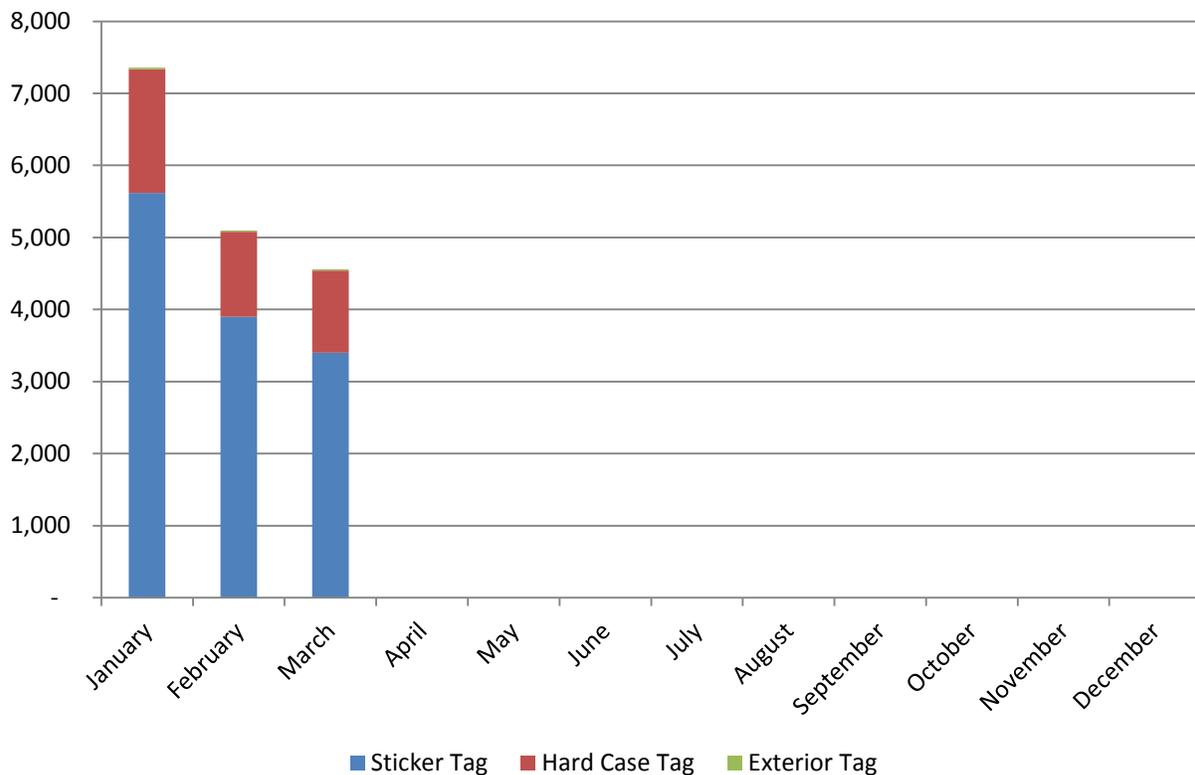
Table 6: Total Weekly Transponders Sold by Type

Week Ending	Sticker Tag	Hard Case Tag	Exterior Tag	Total
1/6/2013*	1,342	376	6	1,724
1/13/2013	1,232	417	(1)	1,648
1/20/2013	1,178	415	6	1,599
1/27/2013	1,130	327	2	1,459
2/3/2013	1,057	304	10	1,371
2/10/2013	1,058	319	8	1,385
2/17/2013	984	265	0	1,249
2/24/2013	942	282	4	1,228
3/3/2013	912	306	6	1,224
3/10/2013	884	256	2	1,142
3/17/2013	735	260	5	1,000
3/24/2013	707	273	(1)	979
3/31/2013	757	236	9	1,002
Total Sold to Date	55,571	13,703	506	69,780

*This week represents 1/1/13-1/6/2013, which is a Tuesday through Sunday

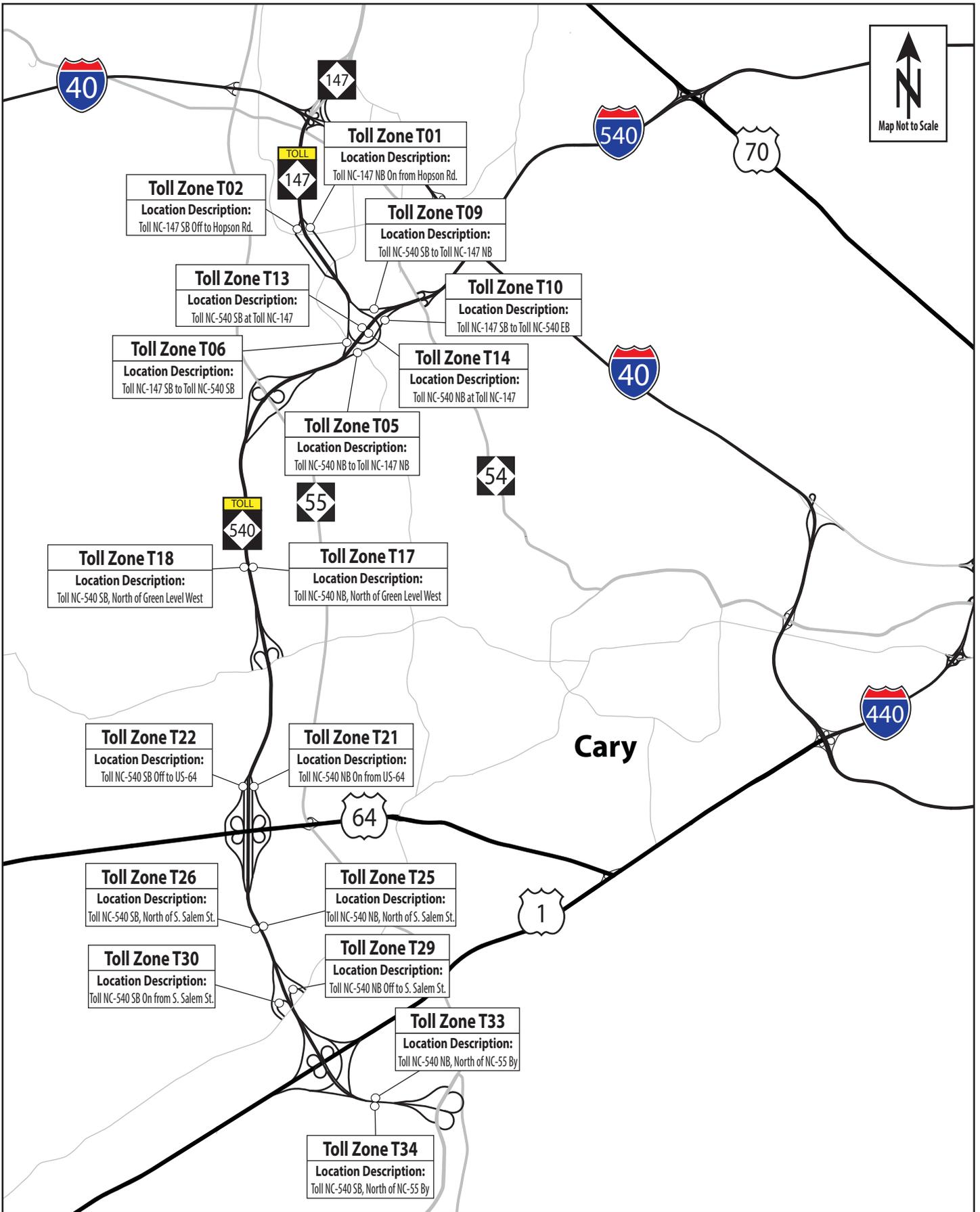
Figure 17 presents a summary of the monthly transponders sold.

Figure 17: Monthly Transponders Sold by Type



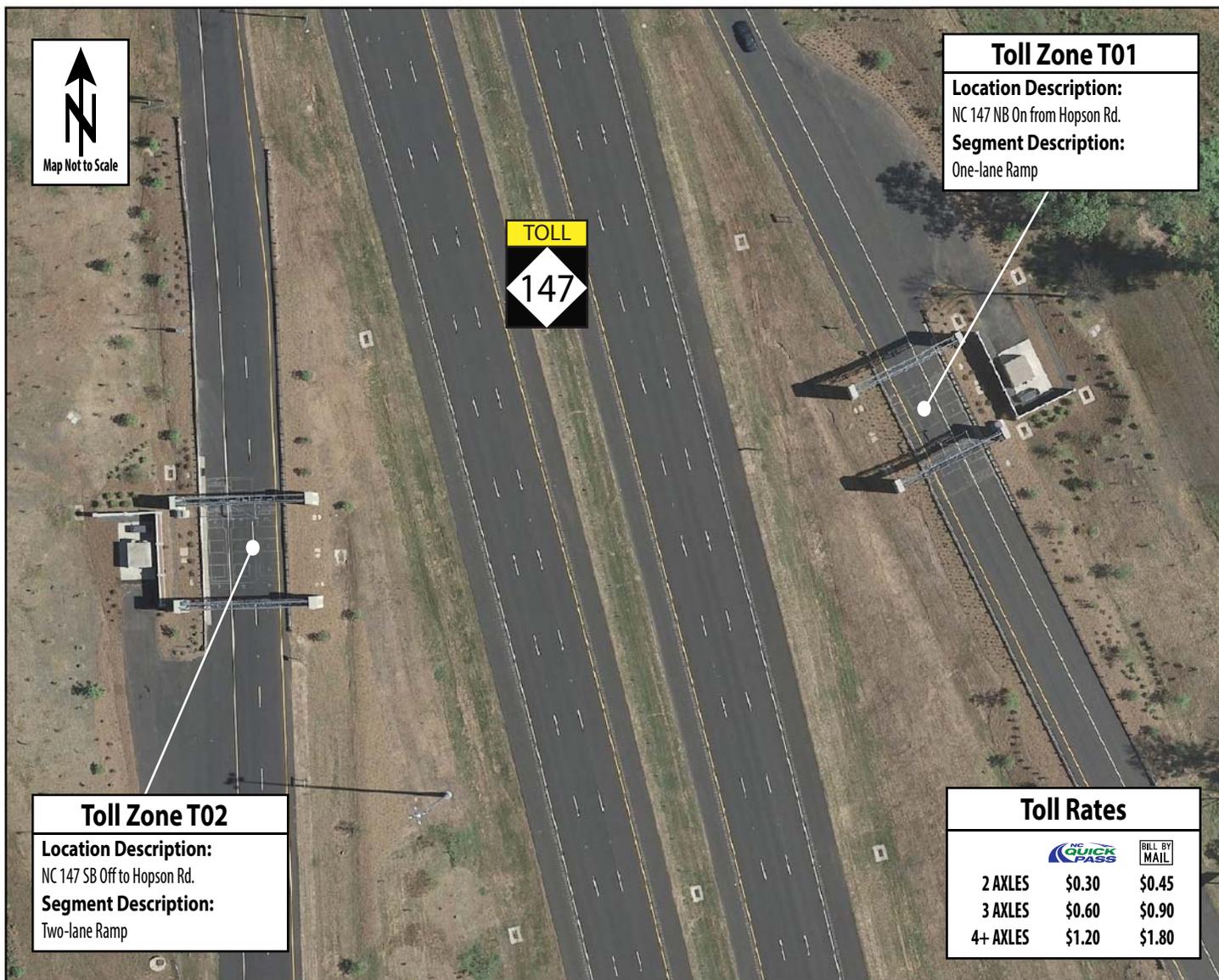
Toll Zone Statistics

The following pages contain visual representations of transactions that have occurred for all toll zones along the facility. The location of the toll zones in relation to the entire Triangle Expressway can be seen on the following page in *Figure 18*.



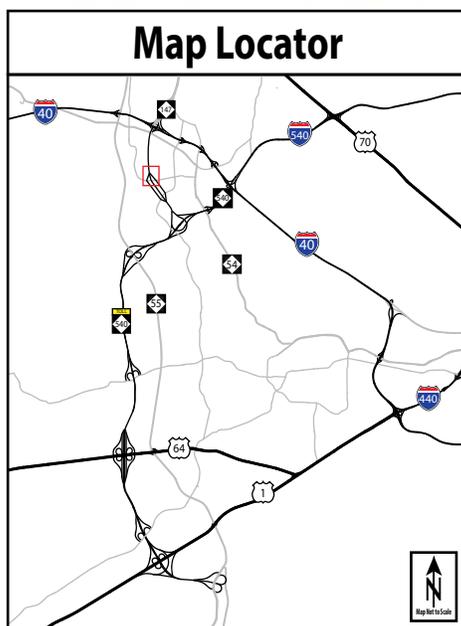
Triangle Expressway Toll Zone Map

Figure 18



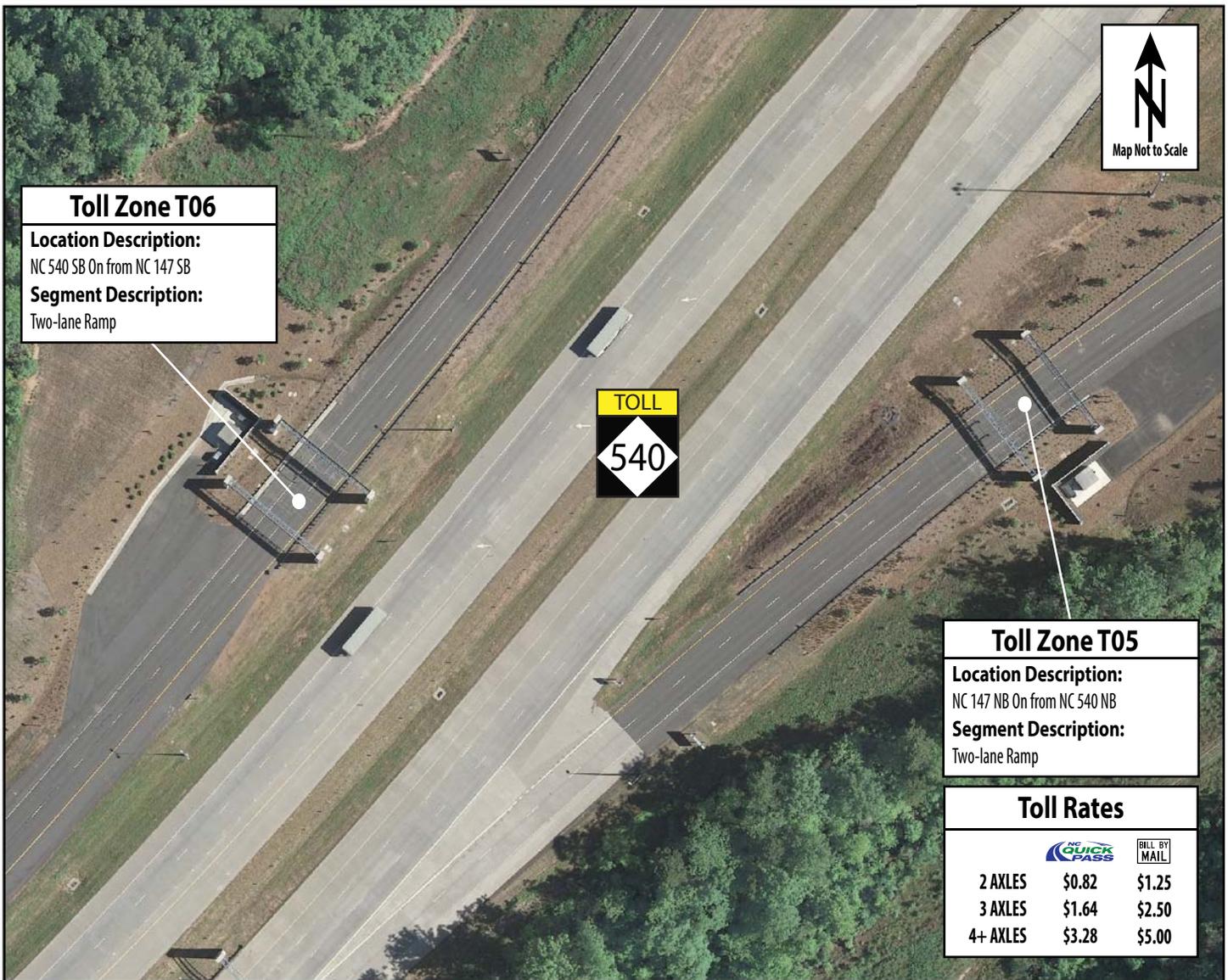
Month	T01	T02
January	1,400	1,360
February	1,500	1,460
March	1,530	1,470
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

Month	T01	T02
January	64%	64%
February	64%	64%
March	64%	64%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



Hopson Road Ramp Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 19



Toll Zone T06
Location Description:
 NC 540 SB On from NC 147 SB
Segment Description:
 Two-lane Ramp

Toll Zone T05
Location Description:
 NC 147 NB On from NC 540 NB
Segment Description:
 Two-lane Ramp

Toll Rates

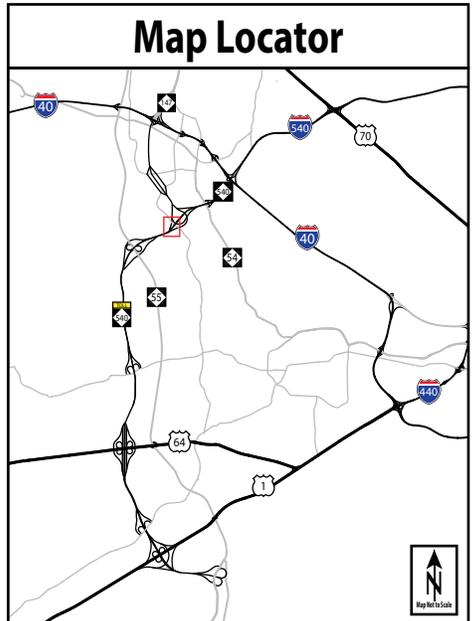
2 AXLES	\$0.82	\$1.25
3 AXLES	\$1.64	\$2.50
4+ AXLES	\$3.28	\$5.00

Transactions by Direction

Month	T05	T06
January	2,880	2,710
February	3,150	2,970
March	3,310	3,040
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

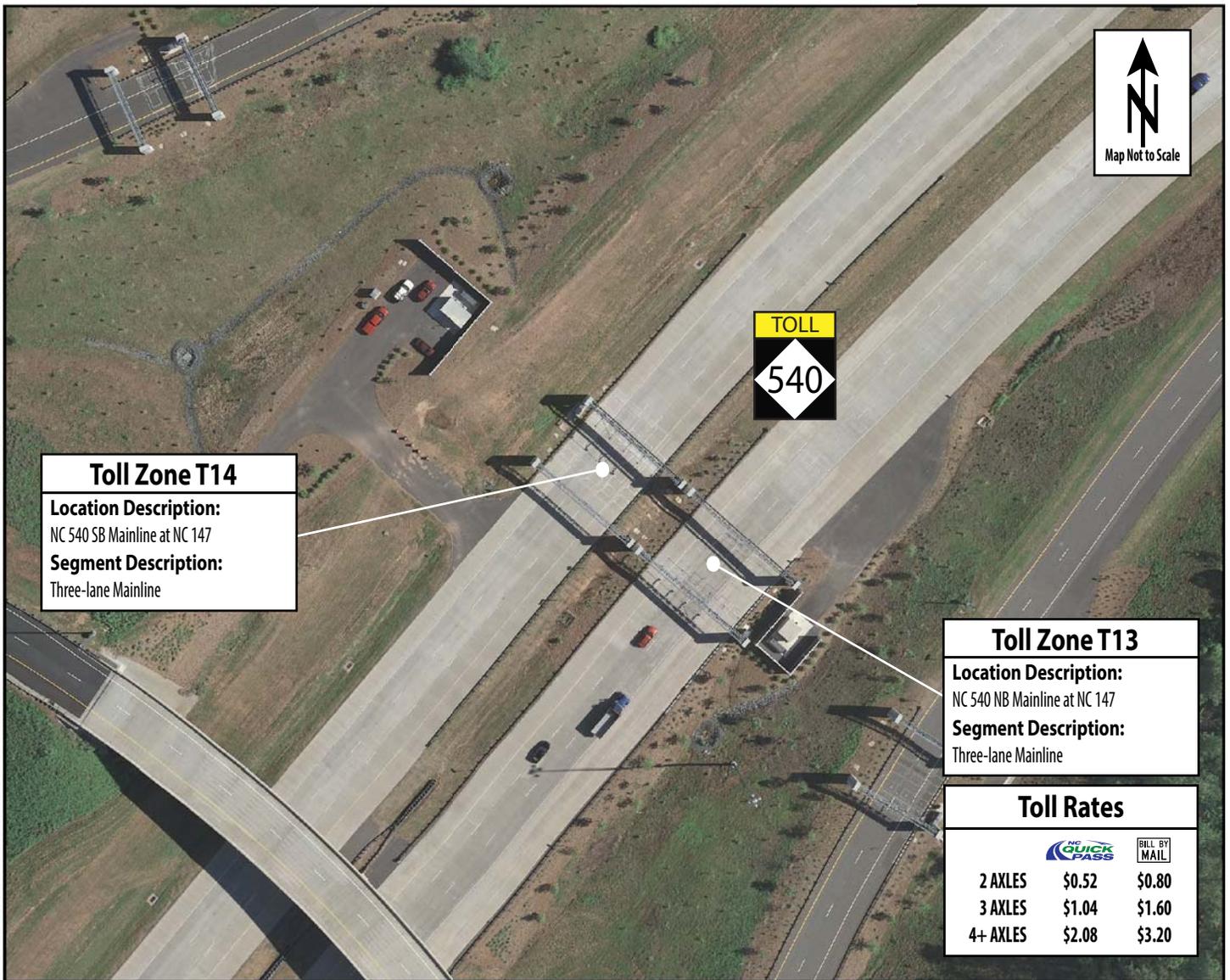
NC Quick Pass Percentage

Month	T05	T06
January	62%	64%
February	64%	65%
March	64%	66%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



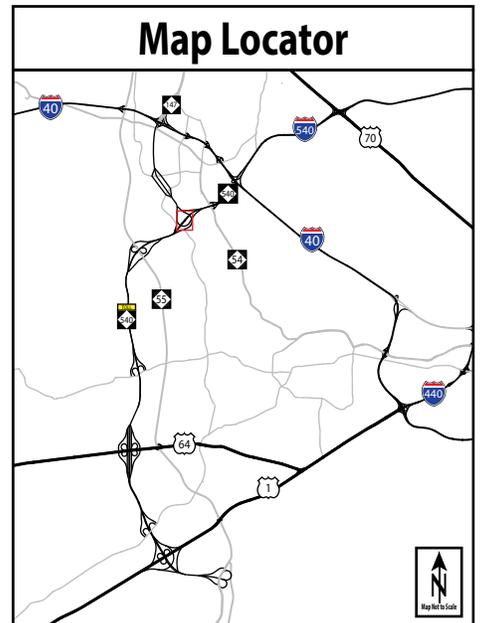
NC-147 South Ramp Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 20



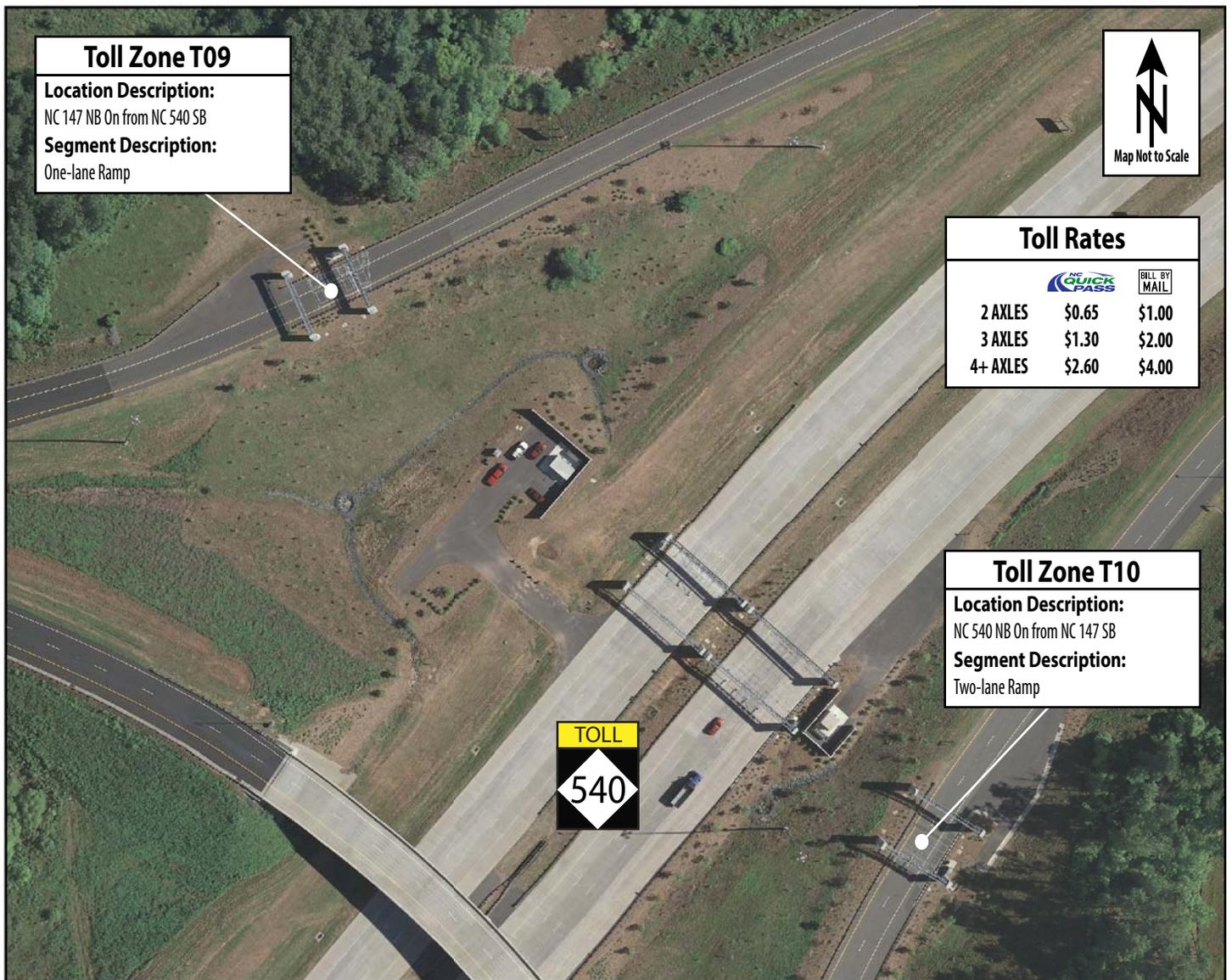
Transactions by Direction		
Month	T13	T14
January	8,230	8,700
February	8,740	9,250
March	9,100	9,640
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage		
Month	T13	T14
January	56%	56%
February	57%	58%
March	58%	58%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



NC-540 Morrisville Mainline Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 21



Toll Zone T09
Location Description:
 NC 147 NB On from NC 540 SB
Segment Description:
 One-lane Ramp



Toll Rates

	NC QUICK PASS	BILL BY MAIL
2 AXLES	\$0.65	\$1.00
3 AXLES	\$1.30	\$2.00
4+ AXLES	\$2.60	\$4.00

Toll Zone T10
Location Description:
 NC 540 NB On from NC 147 SB
Segment Description:
 Two-lane Ramp

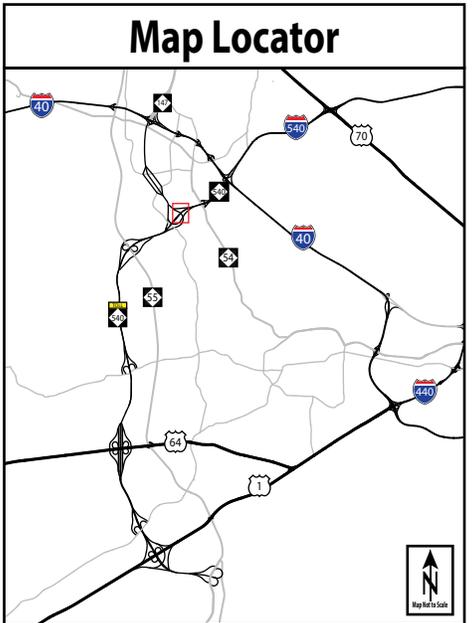


Transactions by Direction

Month	T09	T10
January	720	740
February	770	790
March	780	810
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

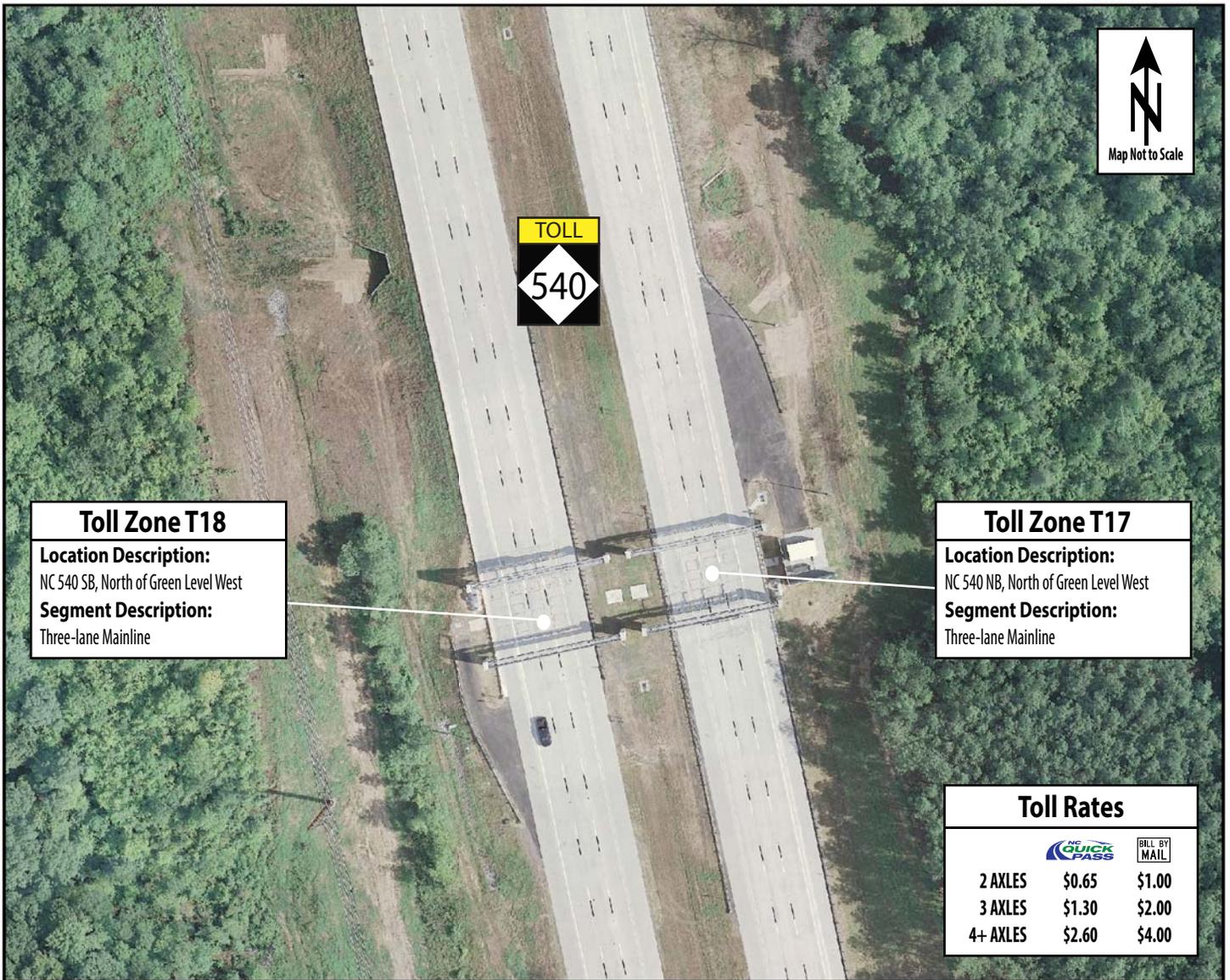
NC Quick Pass Percentage

Month	T09	T10
January	57%	63%
February	58%	63%
March	58%	63%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



NC-147 North Ramp Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 22



Toll Zone T18
Location Description:
 NC 540 SB, North of Green Level West
Segment Description:
 Three-lane Mainline

Toll Zone T17
Location Description:
 NC 540 NB, North of Green Level West
Segment Description:
 Three-lane Mainline

Toll Rates

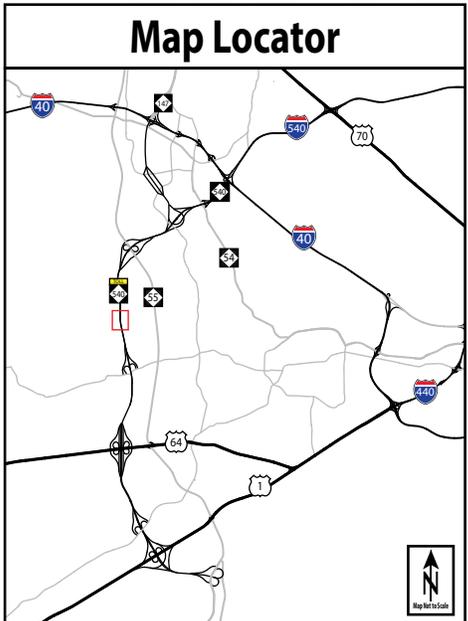
		BILL BY MAIL
2 AXLES	\$0.65	\$1.00
3 AXLES	\$1.30	\$2.00
4+ AXLES	\$2.60	\$4.00

Transactions by Direction

Month	T17	T18
January	6,360	6,410
February	6,950	6,990
March	7,360	7,270
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

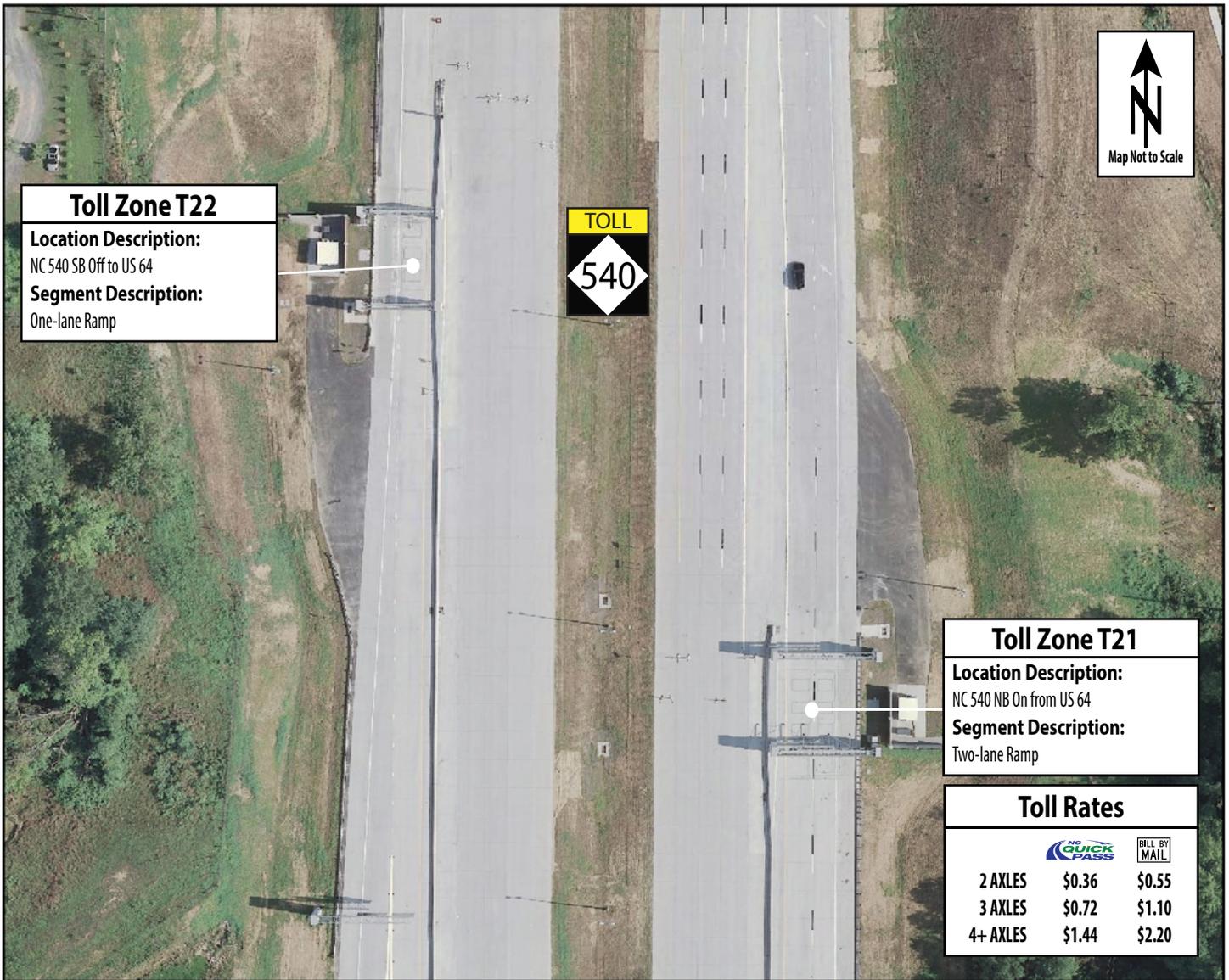
NC Quick Pass Percentage

Month	T17	T18
January	54%	57%
February	55%	59%
March	58%	61%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



NC-540 Cary Mainline Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 23



Toll Zone T22
Location Description:
 NC 540 SB Off to US 64
Segment Description:
 One-lane Ramp

Toll Zone T21
Location Description:
 NC 540 NB On from US 64
Segment Description:
 Two-lane Ramp

Toll Rates

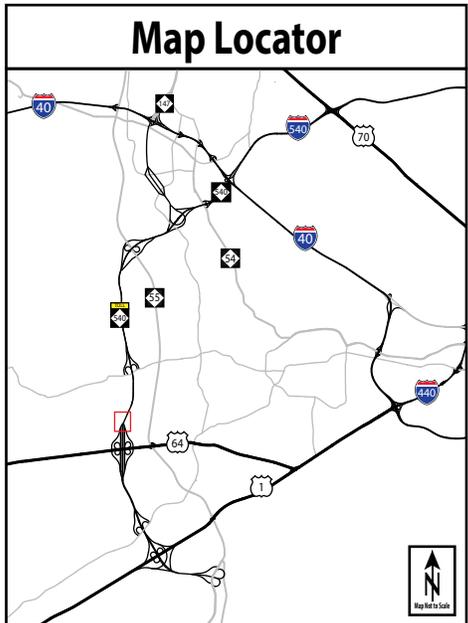
2 AXLES	\$0.36	\$0.55
3 AXLES	\$0.72	\$1.10
4+ AXLES	\$1.44	\$2.20

Transactions by Direction

Month	T21	T22
January	2,630	2,600
February	2,780	2,780
March	2,860	2,840
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

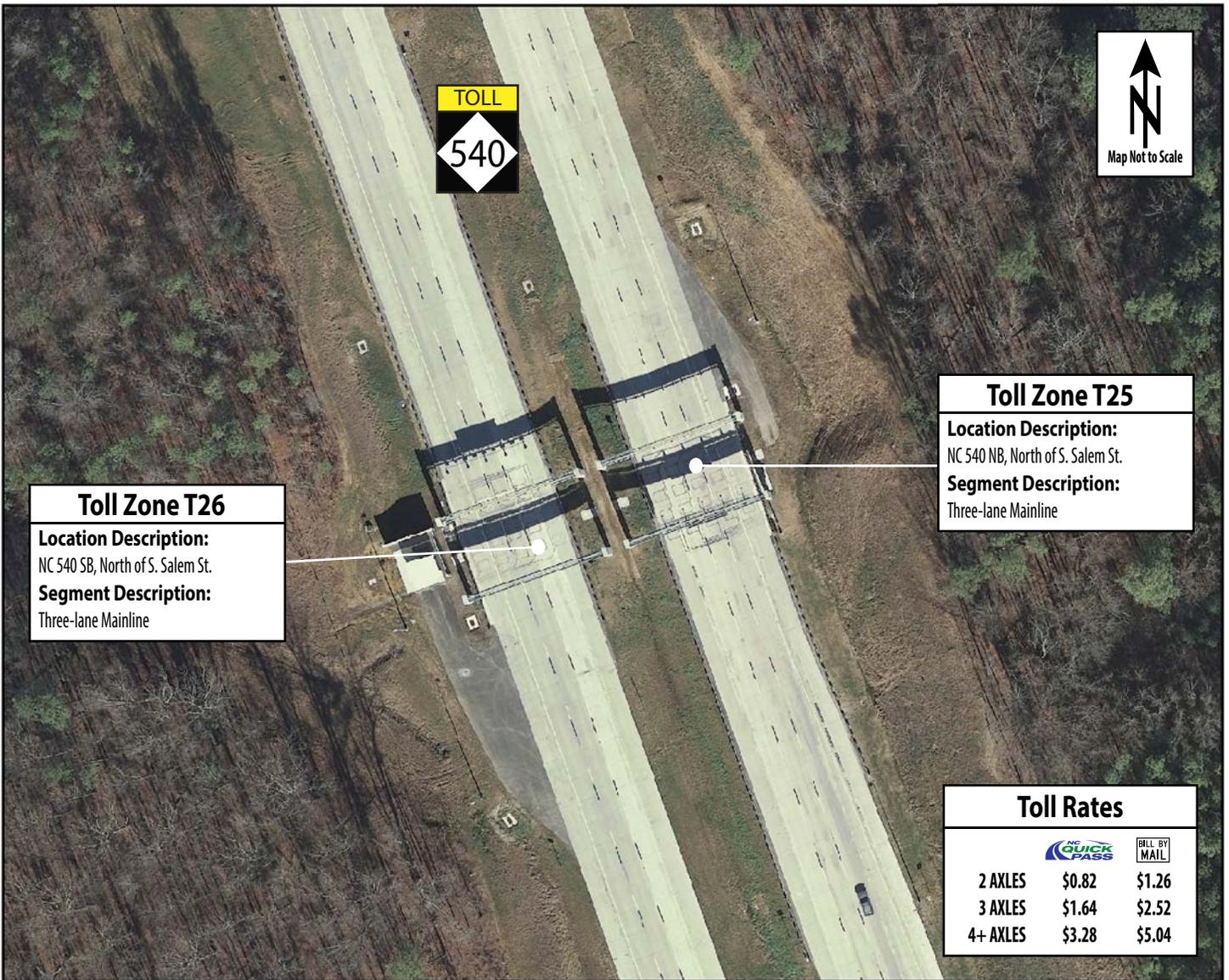
NC Quick Pass Percentage

Month	T21	T22
January	64%	64%
February	65%	65%
March	66%	66%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



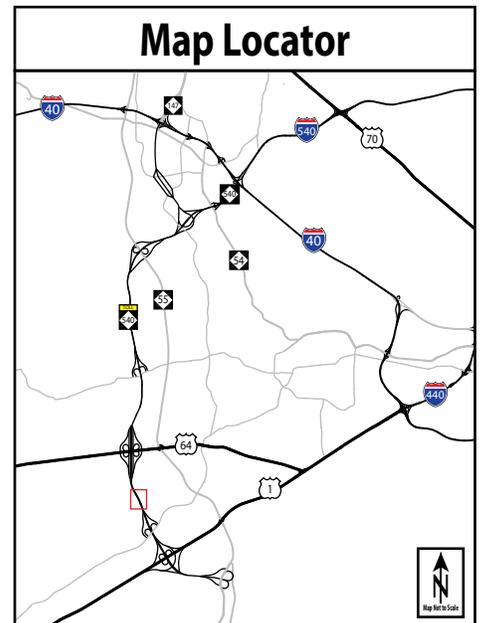
US-64 Ramp Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 24



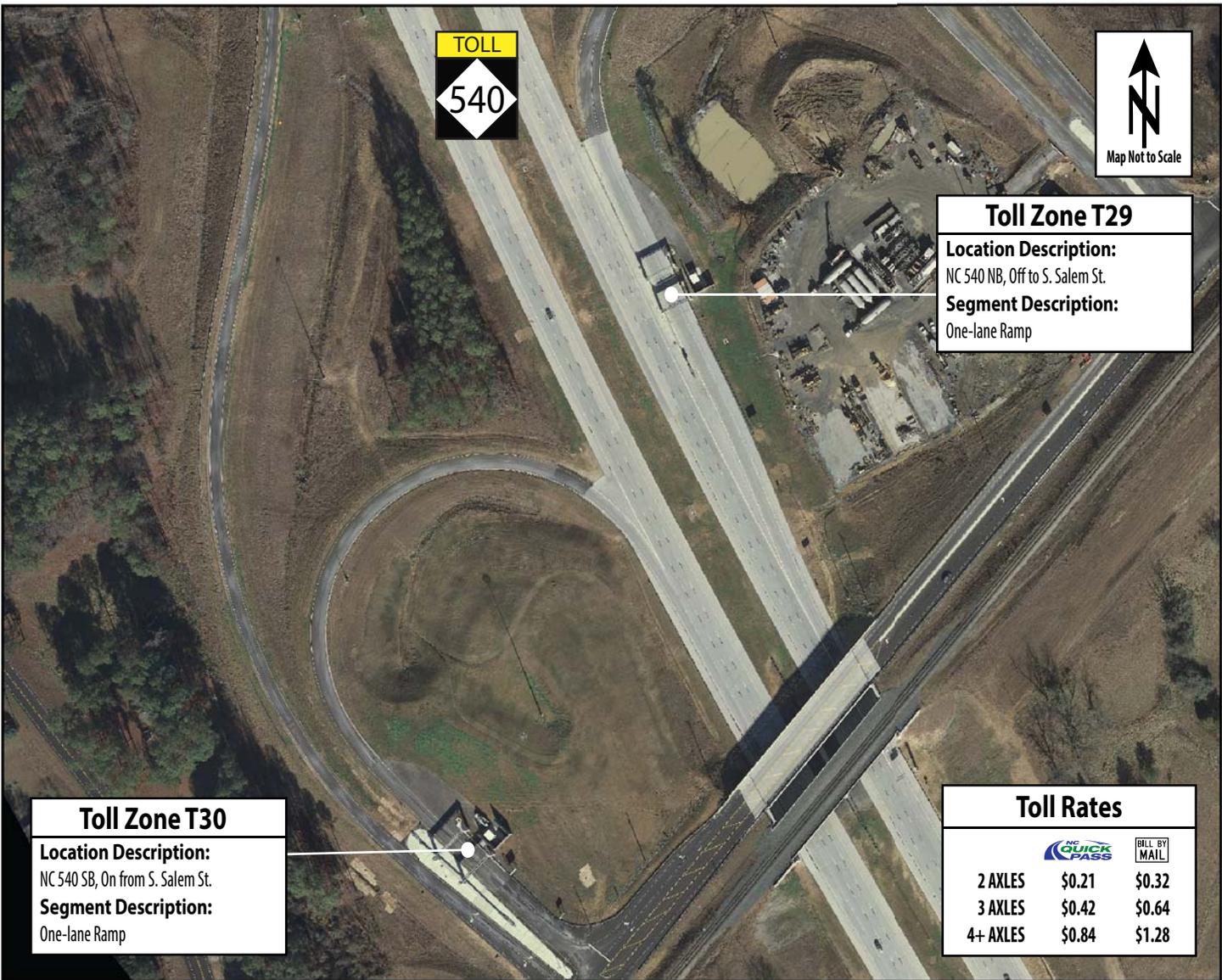
Month	T25	T26
January	4,390	4,350
February	4,960	4,840
March	5,370	5,180
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

Month	T25	T26
January	49%	51%
February	52%	55%
March	54%	57%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



NC-540 Apex Mainline Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 25



Toll Zone T29
Location Description:
 NC 540 NB, Off to S. Salem St.
Segment Description:
 One-lane Ramp

Toll Zone T30
Location Description:
 NC 540 SB, On from S. Salem St.
Segment Description:
 One-lane Ramp

Toll Rates

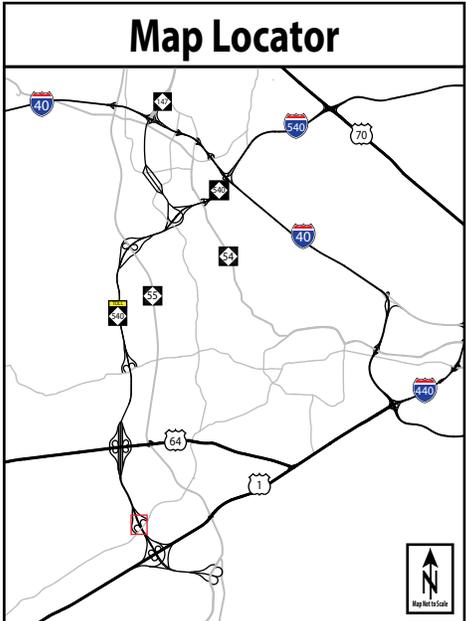
2 AXLES	\$0.21	\$0.32
3 AXLES	\$0.42	\$0.64
4+ AXLES	\$0.84	\$1.28

Transactions by Direction

Month	T29	T30
January	290	320
February	360	390
March	430	460
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

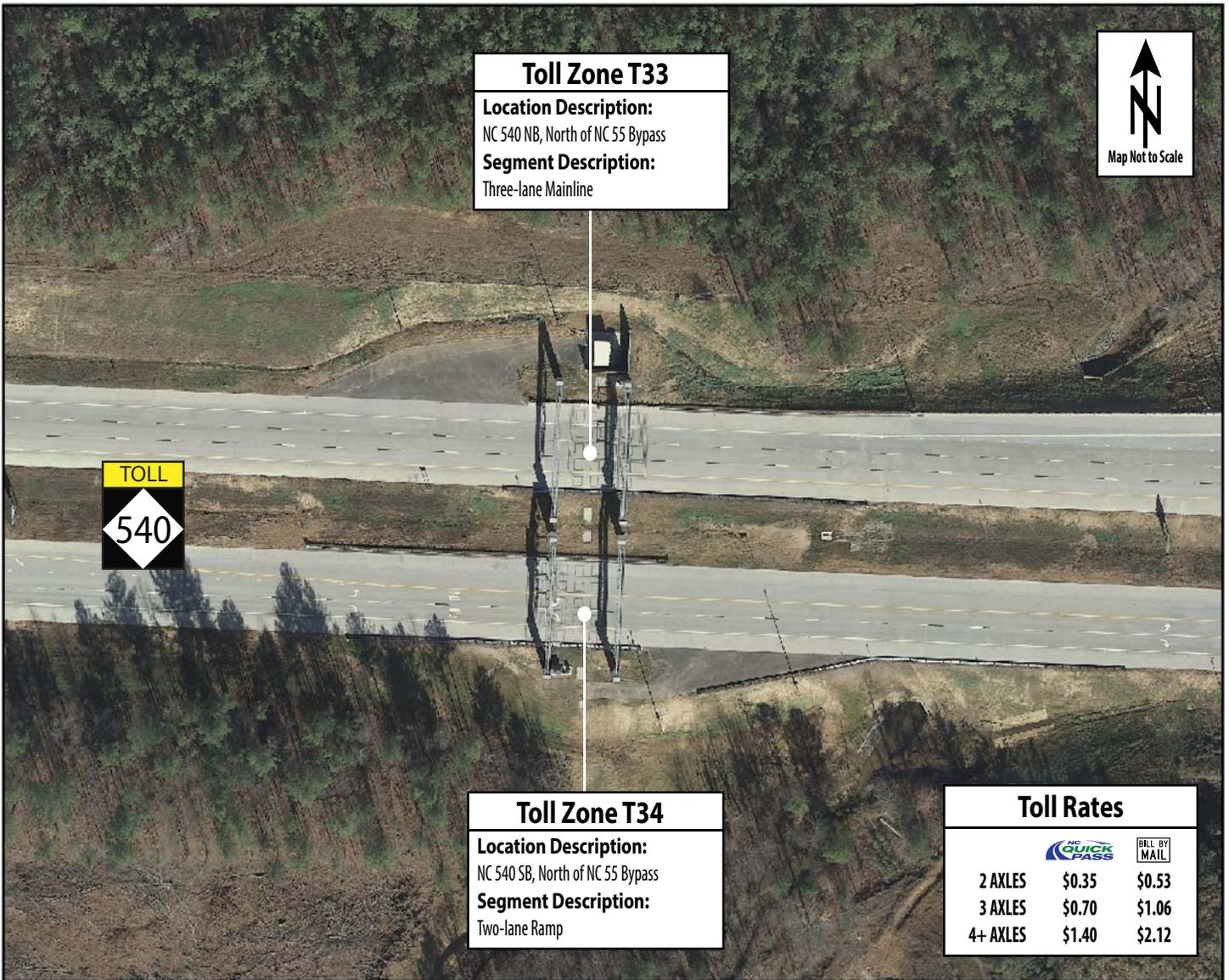
NC Quick Pass Percentage

Month	T29	T30
January	61%	60%
February	63%	63%
March	64%	64%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



South Salem Street Ramp Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 26



Toll Zone T33
Location Description:
 NC 540 NB, North of NC 55 Bypass
Segment Description:
 Three-lane Mainline

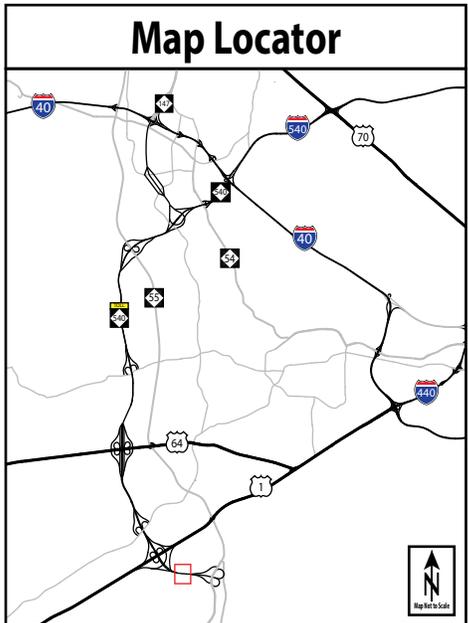


Toll Zone T34
Location Description:
 NC 540 SB, North of NC 55 Bypass
Segment Description:
 Two-lane Ramp

Toll Rates		
2 AXLES	\$0.35	\$0.53
3 AXLES	\$0.70	\$1.06
4+ AXLES	\$1.40	\$2.12

Transactions by Direction		
Month	T33	T34
January	3,290	3,240
February	3,620	3,520
March	3,920	3,870
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-

NC Quick Pass Percentage		
Month	T33	T34
January	51%	51%
February	55%	56%
March	59%	59%
April	-	-
May	-	-
June	-	-
July	-	-
August	-	-
September	-	-
October	-	-
November	-	-
December	-	-



NC-540 Holly Springs Mainline Toll Zones
 First Quarter 2013 Average Weekday Toll Transactions

Figure 27

Roadway Operations

ROADWAY OPERATIONS

Operations statistics are collected by the NCTA State Highway Patrol (SHP) and Incident Management Assistance Patrol (IMAP) for the NCTA Toll Safety Patrol program. This program consists of dedicated State Highway and Incident Management Assistance Patrols, which provides one patrolman and one IMAP responder to the facility at all times from Monday through Friday. This section also presents response and traffic information for incidents that occurred during the first quarter of 2013.

The Turnpike Authority manages traffic and activities along the Triangle Expressway at the recently opened, state-of-the-art Traffic Management Center located in the North Carolina National Guard's Joint Force Headquarters in Raleigh.

Highly trained operators monitor the entire length of the Triangle Expressway via closed-circuit TV, microwave speed detectors and interoperable 800MHz radio dispatch from local 911 and statewide Highway Patrol communications, as well as the Turnpike Authority's security cameras and Roadway Weather Information System.

More than 200 cameras are located along the Expressway to monitor traffic operations, ensure security of the toll gantries and collect license plate images used for Bill by Mail toll collection. Operators monitor the roadside technology and toll facilities and are able to quickly dispatch maintenance personnel to address any equipment issues or roadway traffic incidents.

Roadway updates are provided to motorists via 10 full-color Dynamic Message Boards (the first full-color message boards in the state), as well as through NCDOT's 511 system and Traveler Information Management System (TIMS) website.

The SHP officers and IMAP can be dispatched to respond to any incidents that occur, ranging from disabled motorists and debris to major traffic wrecks that could be detrimental to both motorist safety and toll collection.

Table 7 presents operating statistics for the State Highway Patrol and Incident Management Assistance Patrol.

Table 7: SHP and IMAP Statistics

Charge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Speed Violations	88	97	109										294
Alcohol Violations	0	0	0										0
Seat Belt Violations	9	14	17										40
Child Restraint Violations	0	0	1										1
Other Violations	58	81	80										219
Total Charges	155	192	207										554
Warnings	125	127	150										402
Vehicles Towed	0	0	0										0
Crashes Investigated	5	3	1										9

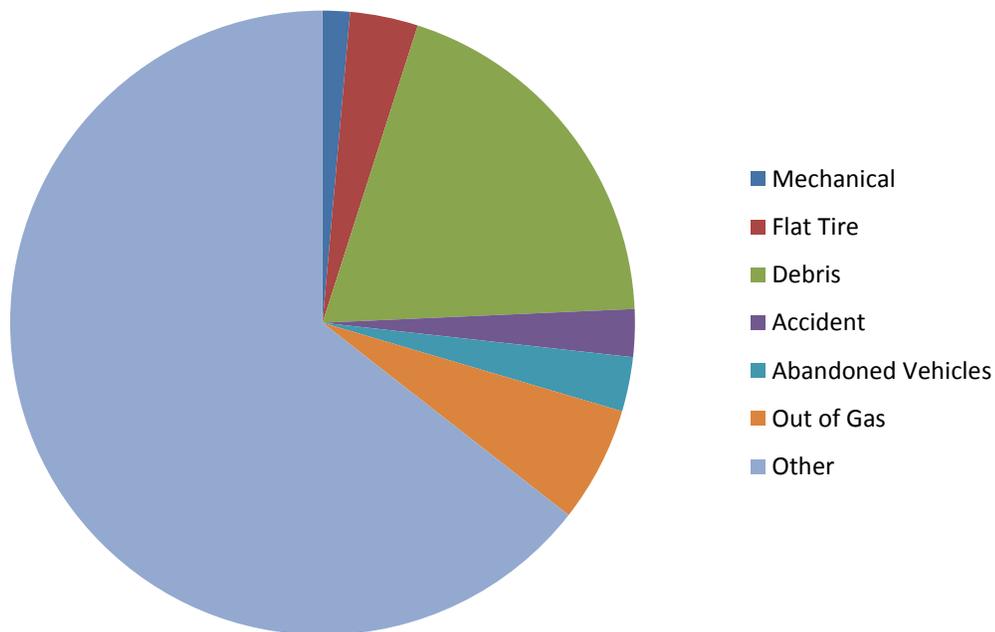
The IMAP assists with stranded motorists and incident clearance, thereby maintaining the flow of traffic along the roadway. IMAP drivers had a total of 284 assists in the first quarter of 2013. *Table 8* and *Figure 28* present the monthly IMAP assists, by type, for the Triangle Expressway. The “other” category includes the reporting categories of traffic control, assist other unit, secured load, called for assistance, directions, transported, unable to locate and no assistance.

Table 8: Monthly IMAP Assistance by Type

Assist Type	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Mechanical	0	2	2										4
Flat Tire	5	2	3										10
Debris	18	17	20										55
Accident	4	1	2										7
Abandoned Vehicles	3	2	3										8
Out of Gas	9	3	5										17
Other	46	66	71										183
Total Charges	85	93	106										284

Figure 28: IMAP Assistance by Type and 10-Code

First Quarter 2013 IMAP Assistance by Type



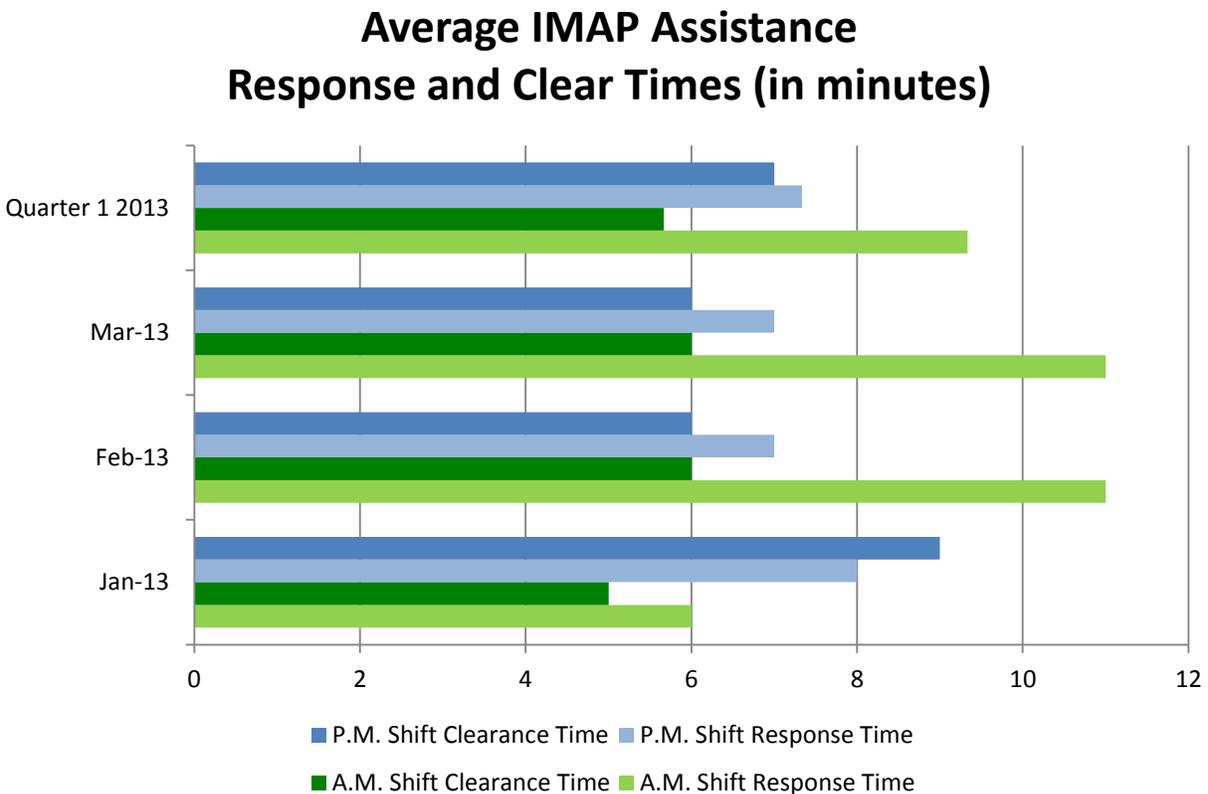
The response and clear times for all IMAP assists are logged by IMAP and provided to the NCTA. Response time is the time from which a responder receives a call to the time they arrive on the scene. Clear time is the time from which it takes the responder to clear the incident and return the roadway to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

Table 9 and Figure 29 present the average IMAP assistance response and clear times, in minutes, for the Triangle Expressway. This data was not recorded by the TMC until July 2012. N/A has been entered for months that did not record data.

Table 9: Monthly Average IMAP Assistance Response and Clear Times (in Minutes)

Response Type	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	2013
A.M. Shift Response	6	11	11										
A.M. Shift Clearance	8	7	7										
P.M. Shift Response	5	6	6										
P.M. Shift Clearance	9	6	6										

Figure 29: Average IMAP Assistance Response and Clear Times (in Minutes)



Roadway Maintenance

ROADWAY MAINTENANCE

This section outlines the NCTA Maintenance Rating Program (MRP), which is a maintenance evaluation program for roadway features and toll facilities on the NCTA system. 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 survey 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 relationship 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 Limits

The Triangle Expressway extends for approximately 18.8 miles from the interchange of I-40 and NC-147 on the north end to the NC-55 Bypass near Holly Springs, North Carolina on the south end. It includes an approximately one mile segment on NC-540 extending north from the NC-540 / NC-147 interchange to the NC-54 interchange. The Triangle Expressway consists of ten interchanges and eighteen all-electronic toll collection zones.

Assessment Schedule

As part of the NCTA MRP, a "baseline" assessment is scheduled to be completed for each newly opened roadway, soon after opening to toll collection. The baseline assessments include complete inventory data collection and assessment on 100% of the roadway assets.

Once the initial baseline assessment is completed, future assessments for that segment will switch over to a statistical sampling assessment. This statistical analysis is 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. Inspections are performed during the months of February, May, August, and November to account for dynamic changes in assets during the various seasons.

The assessment schedule is provided on the following page in *Table 10*.

Table 10: MRP Assessment Schedule

	Operational Turnover Date	Baseline Assessment	February 2013 Statistical Assessment	May 2013 Statistical Assessment	August 2013 Statistical Assessment	November 2013 Statistical Assessment
Segment A	Completed January, 2013	Completed July, 2013	Completed February, 2013	Scheduled	Scheduled	Scheduled
Segment B	Completed August, 2013	Completed September, 2013				
Segment C	Scheduled January, 2013	Completed February, 2013				

Assessment Results

A table consisting of the results from the 2013 MRP Assessments is provided below in *Table 11*.

Table 11: MRP Assessment Results

Element	Segment C Baseline Assessment Rating	First Quarter Statistical Assessment Rating
Road Surface	95.8	97.4
Unpaved Shoulders	95.9	98.8
Drainage	93.3	91.4
Roadside	99.7	99.3
Traffic Control Devices	90.7	93.0
Overall MRP Performance Rating	94.6	95.7