



NORTH CAROLINA

Turnpike Authority

2013 Operations Statistics Report

Triangle Expressway

Fourth Quarter

1 S. Wilmington Street
Raleigh, NC 27601



Last Updated:
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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 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

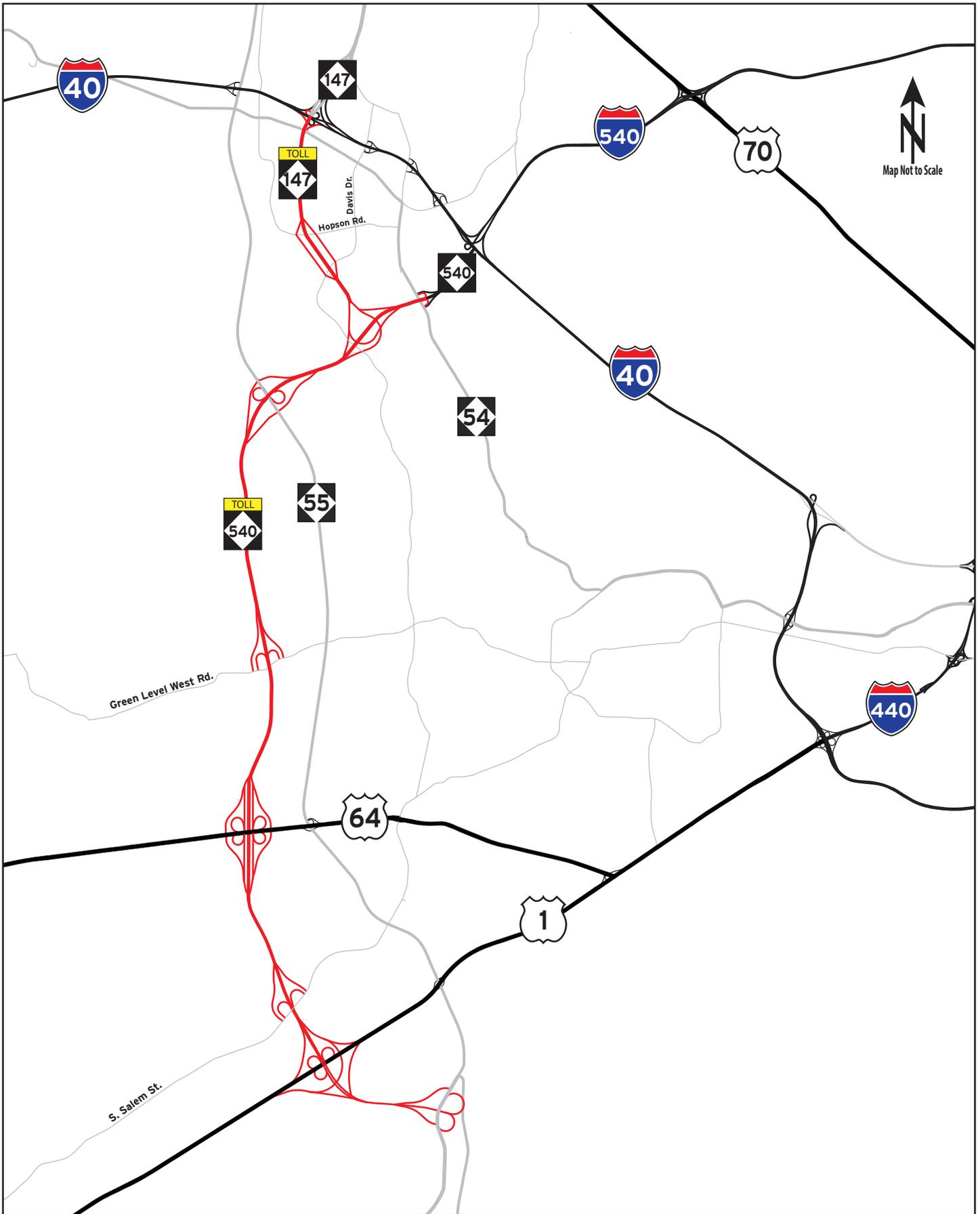
The Triangle Expressway is an 18.8 mile toll road that extends the partially complete “Outer Loop” around the greater Raleigh, North Carolina area from I-40 to the NC-55 Bypass in Holly Springs. The controlled access, six-lane toll facility relieves congestion on the paralleling NC-55 facility, while 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 toll road between I-40 and Toll NC-540. This section of the Triangle Expressway 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, 2012.

Toll NC-540 includes 12.6 miles of toll road between NC-55 in western Cary and the NC-55 Bypass near the Town of Holly Springs. The section from NC-55 to US-64 includes interchanges at 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 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 entire Triangle Expressway can be seen in *Figure 1* on the following page.



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 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 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.

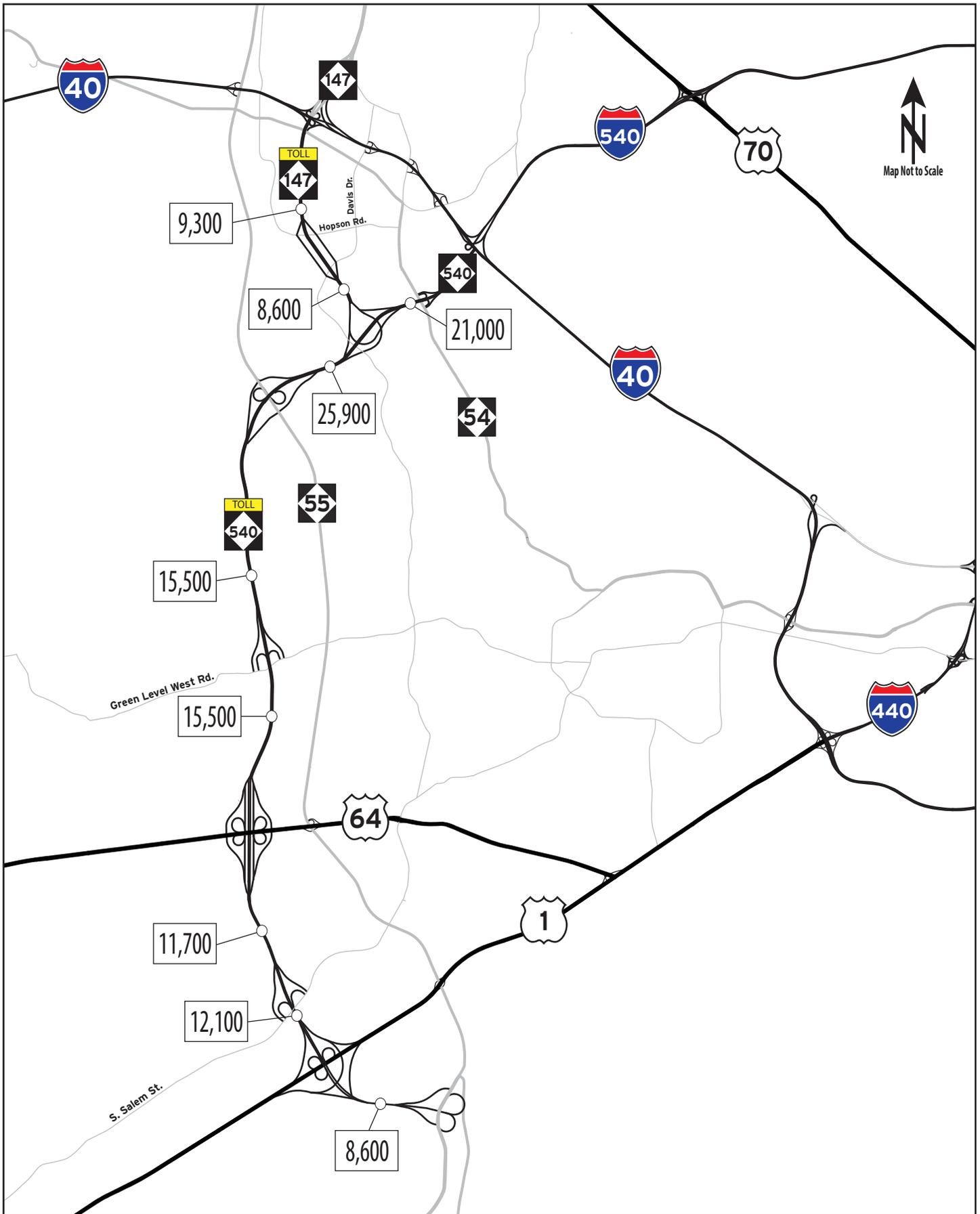
Average Weekday Traffic (AWT)

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, 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.

The following page contains a visual representation of AAWT for all mainline segments for the entire facility in Figure 2.



Triangle Expressway AAWT Map

**Figure
2**

Interchange Statistics

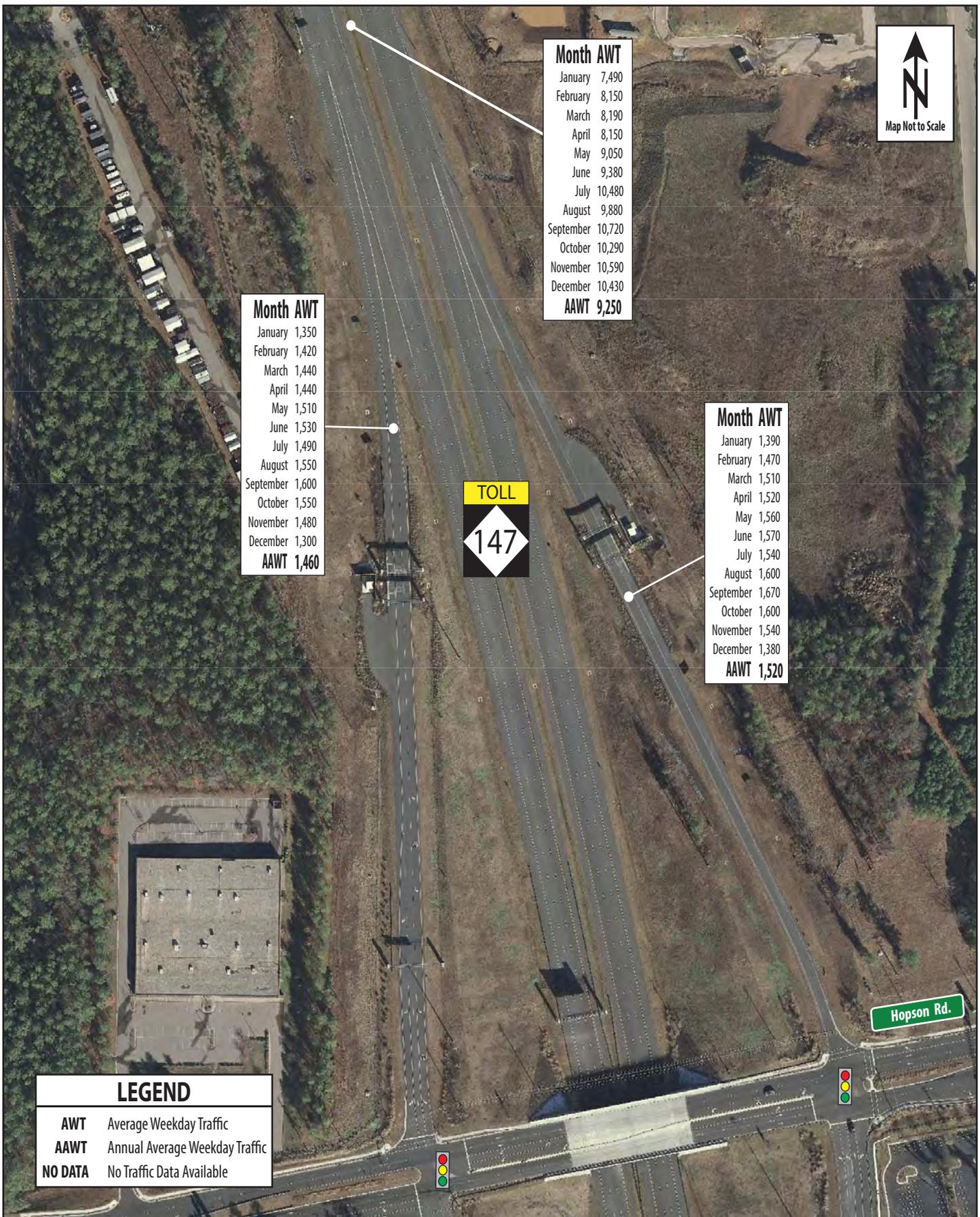
The following pages contain visual representations of AWT for all interchanges along the facility and are representative of NCTA's MVD data.

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."



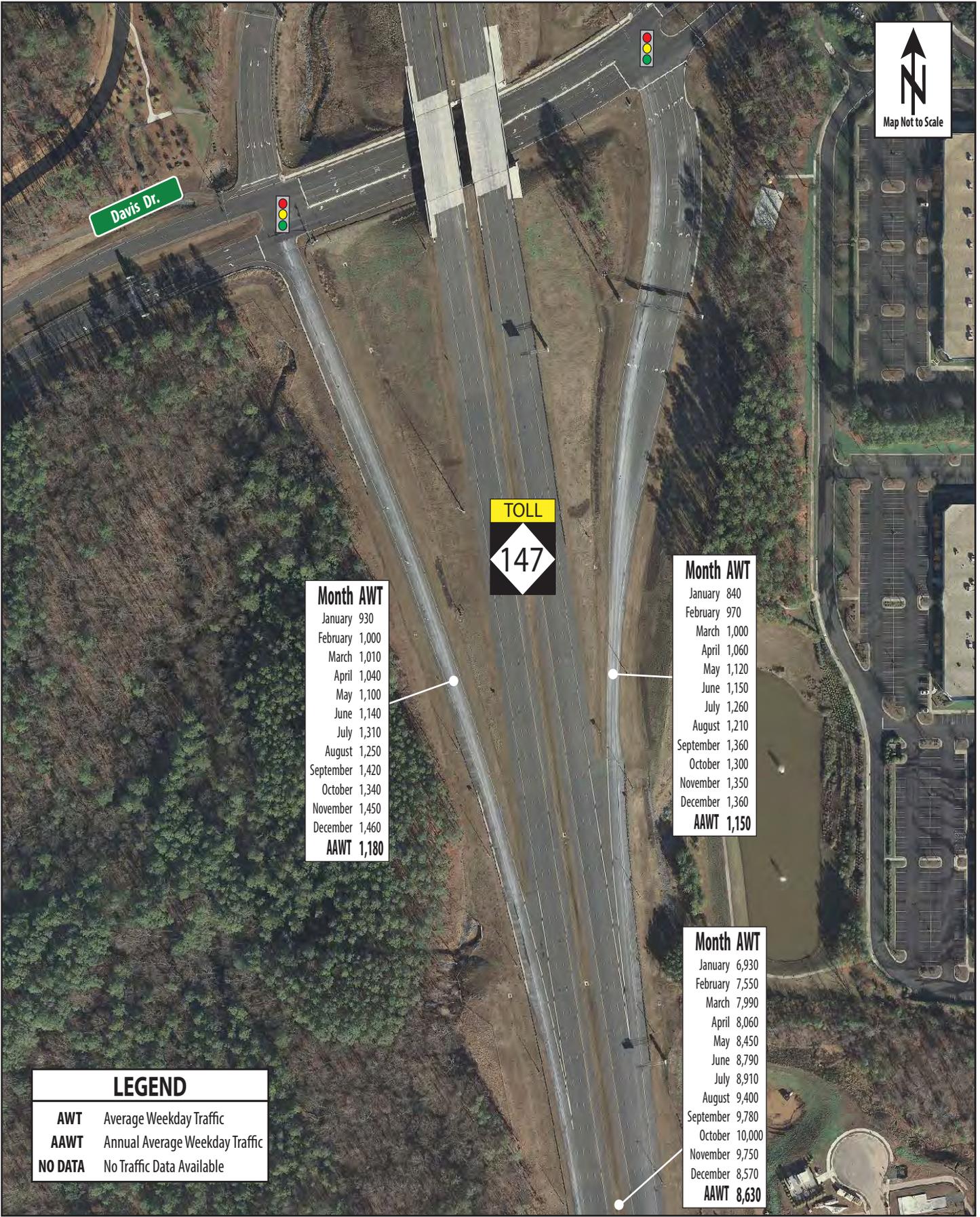
NC-147 at I-40 Interchange
2013 Average Weekday Traffic

Figure
3



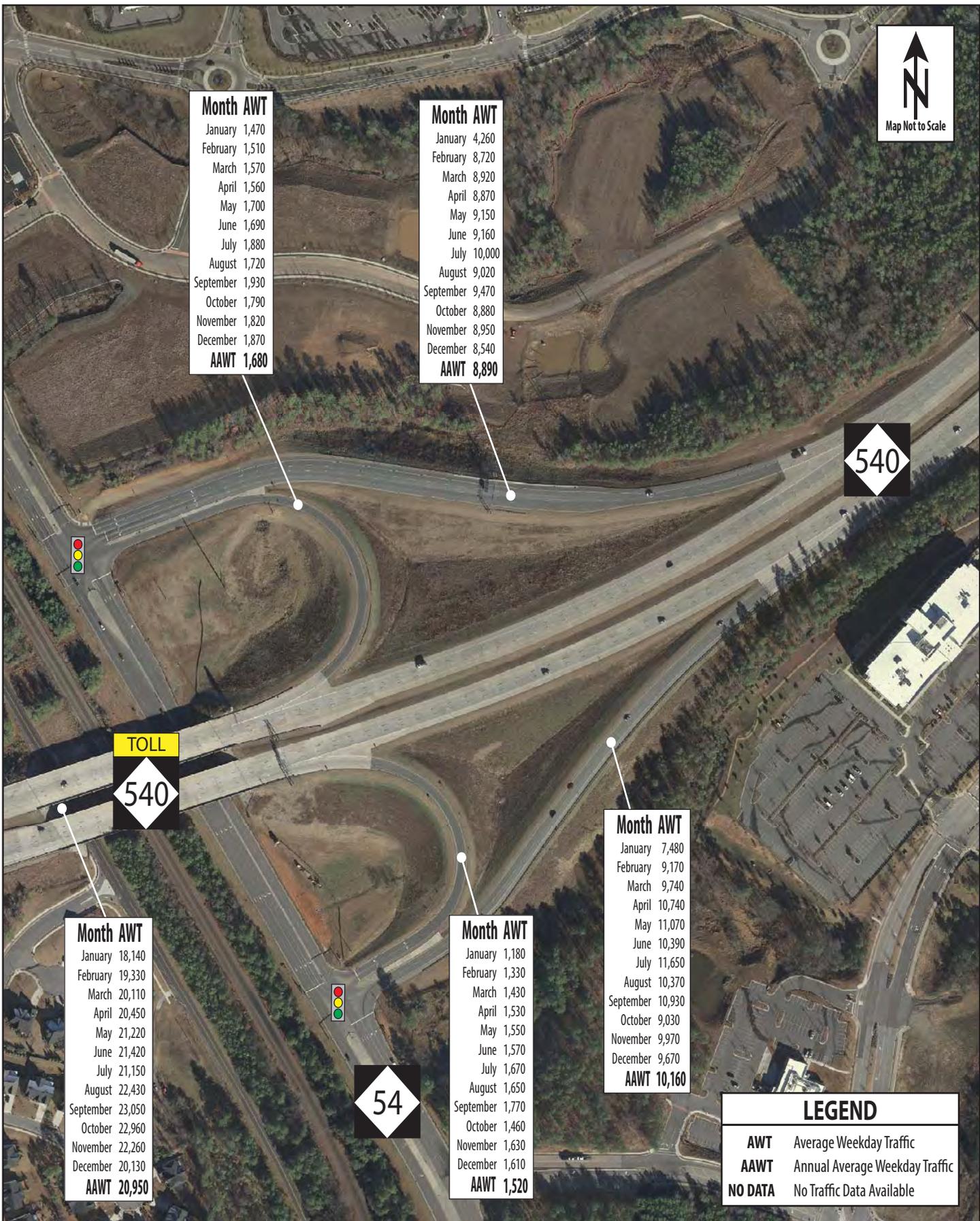
NC-147 at Hopson Rd. Interchange
2013 Average Weekday Traffic

Figure
4



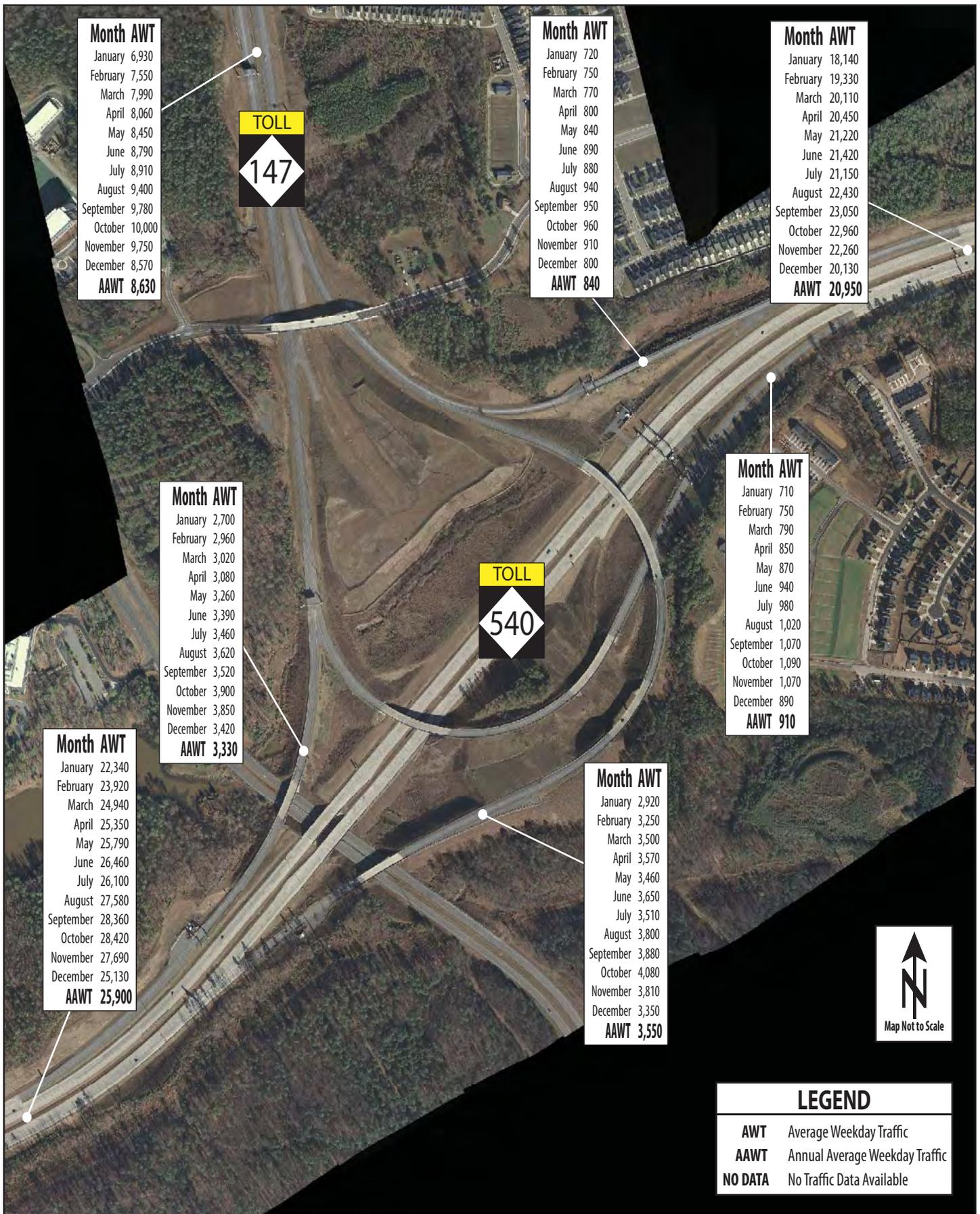
NC-147 at Davis Dr. Interchange
2013 Average Weekday Traffic

Figure
5



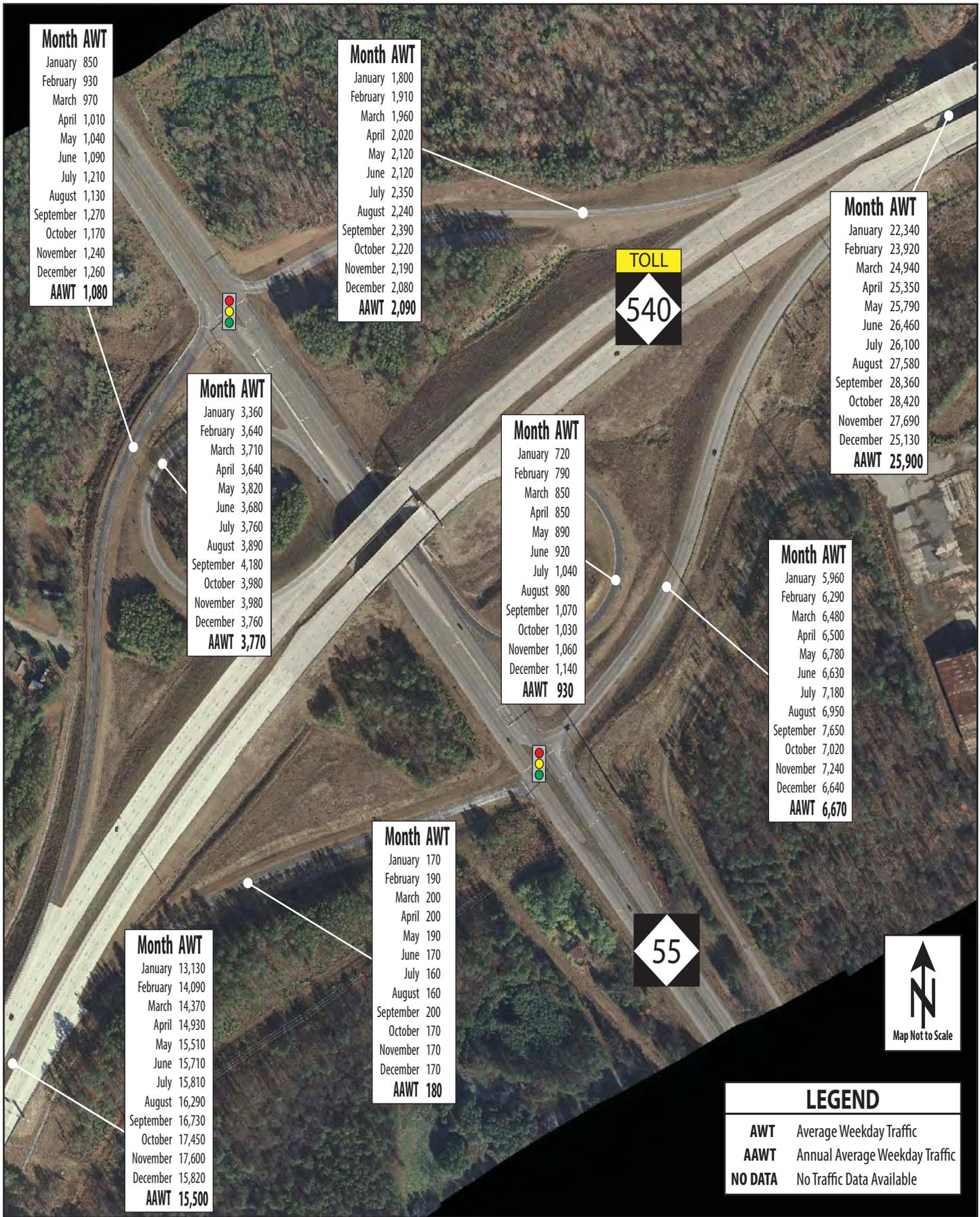
NC-540 at NC-54 Interchange
2013 Average Weekday Traffic

Figure
6



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

Figure
7



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

Figure
8

Month AWT	
January	13,130
February	14,090
March	14,370
April	14,930
May	15,510
June	15,710
July	15,810
August	16,290
September	16,730
October	17,450
November	17,600
December	15,820
AAWT	15,500



Month AWT	
January	490
February	530
March	570
April	590
May	610
June	660
July	720
August	700
September	760
October	710
November	730
December	730
AAWT	640

Month AWT	
January	660
February	690
March	730
April	740
May	800
June	820
July	900
August	870
September	950
October	900
November	940
December	940
AAWT	810

Green Level West Rd.

Month AWT	
January	520
February	620
March	700
April	730
May	710
June	690
July	690
August	690
September	750
October	740
November	730
December	660
AAWT	680

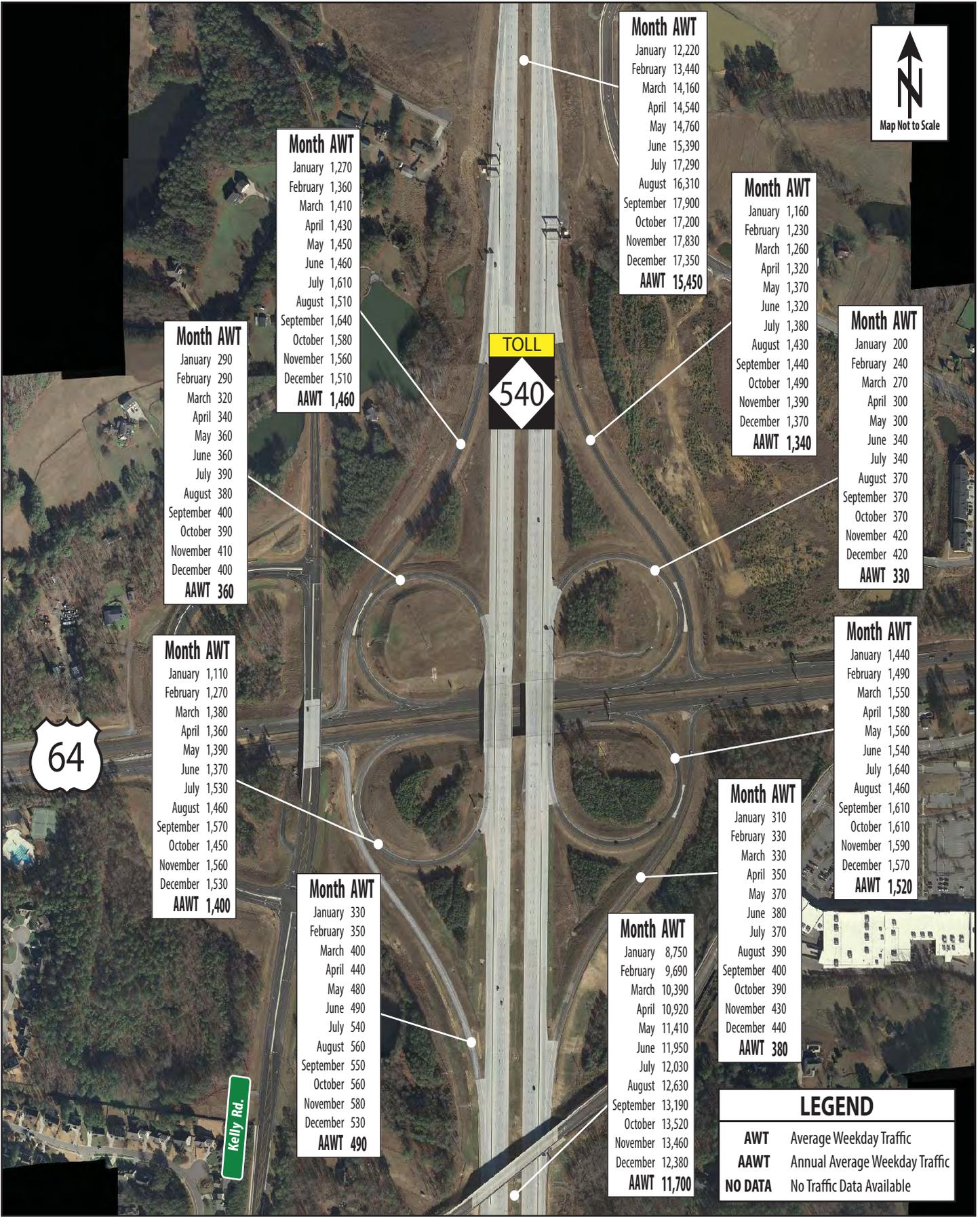
Month AWT	
January	570
February	680
March	780
April	780
May	720
June	710
July	720
August	700
September	780
October	740
November	740
December	680
AAWT	710

Month AWT	
January	12,220
February	13,440
March	14,160
April	14,540
May	14,760
June	15,390
July	17,290
August	16,310
September	17,900
October	17,200
November	17,830
December	17,350
AAWT	15,450

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

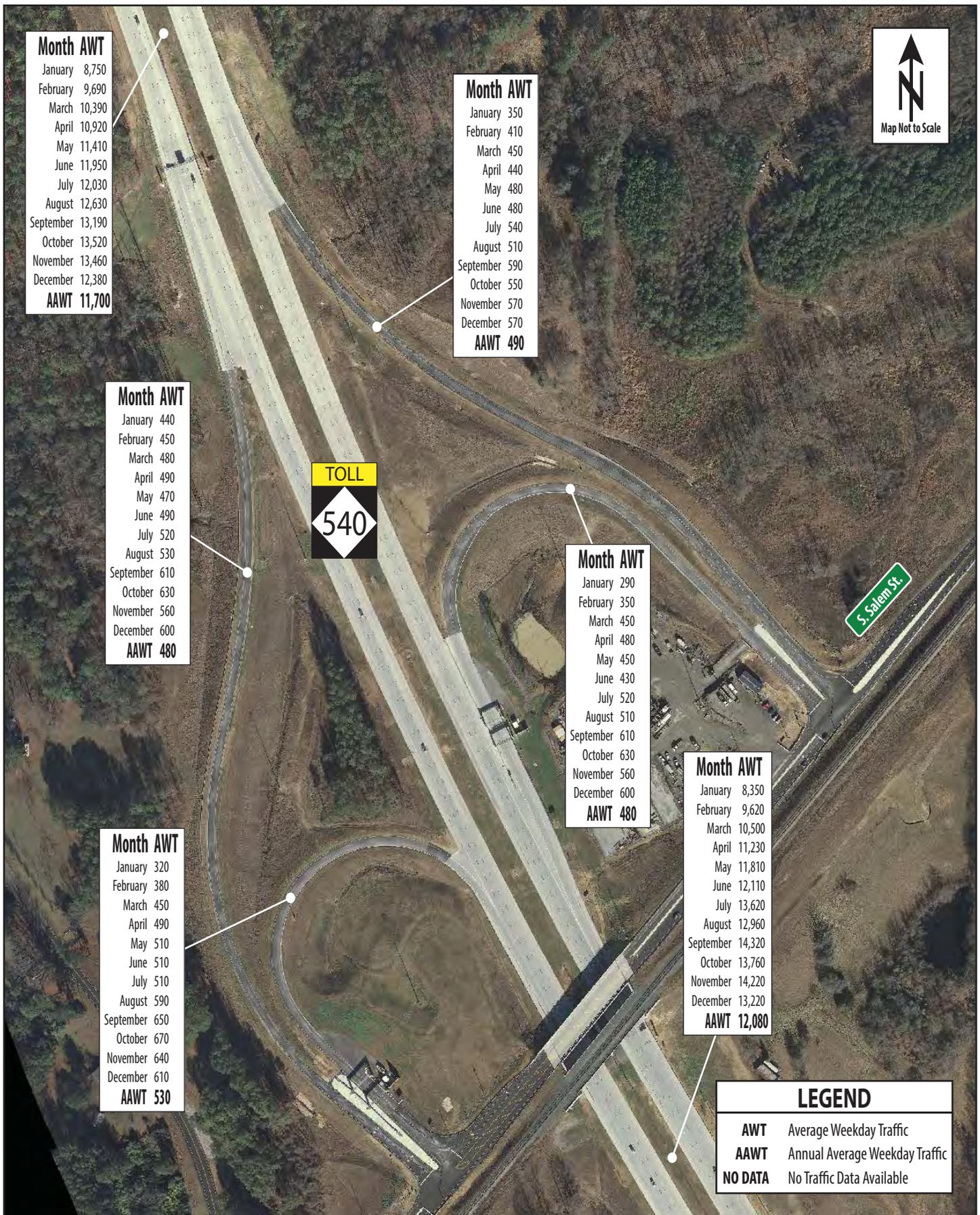
NC-540 at Green Level West Rd. Interchange
2013 Average Weekday Traffic

Figure 9



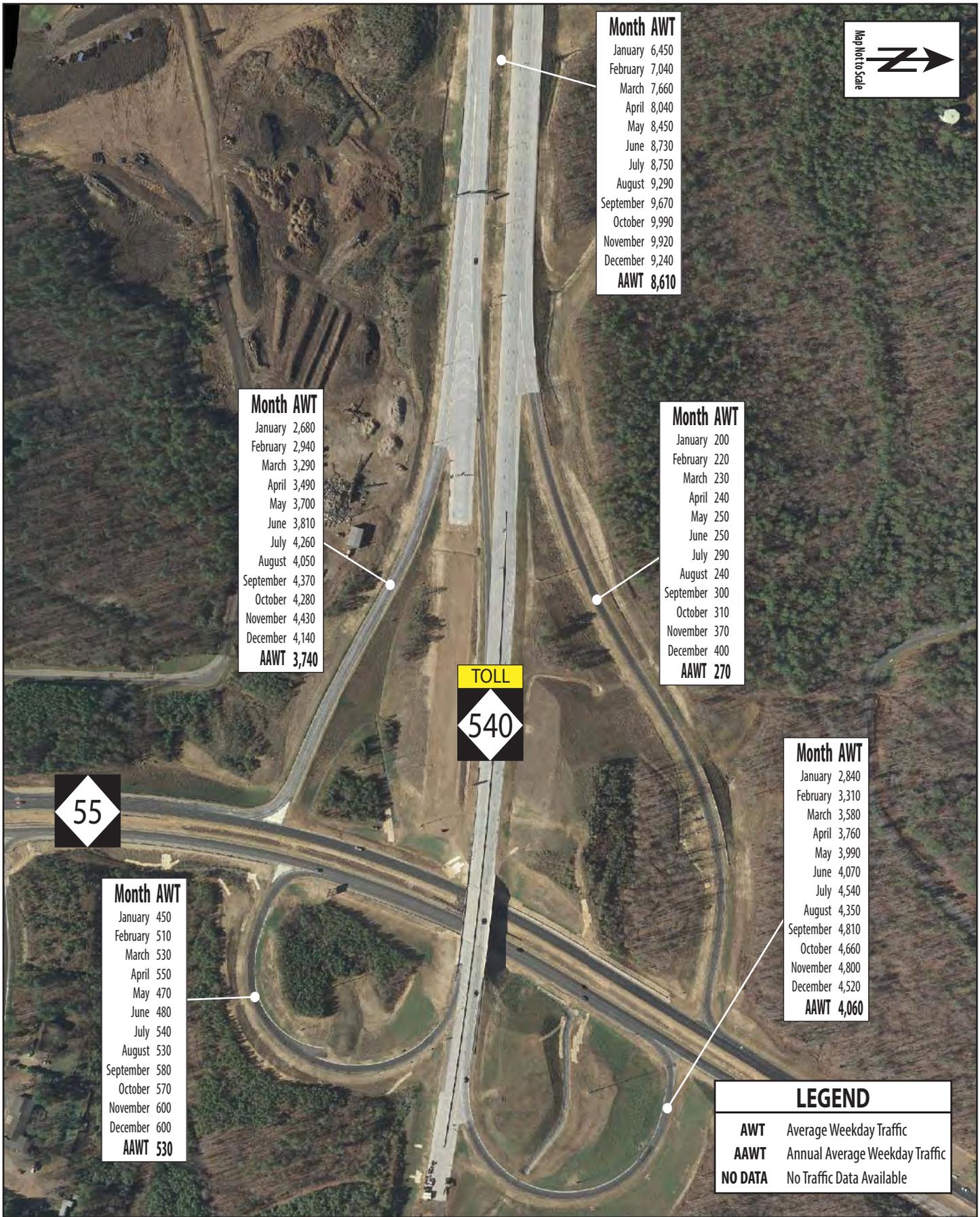
NC-540 at US-64 Interchange
2013 Average Weekday Traffic

Figure
10



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

Figure
11



NC-540 at NC-55 Bypass Interchange
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, Monthly and Year-to-Date (YTD) Statistics

The statistics provided in the following section combine roadway and customer service data and reflect the overall Triangle Expressway facility. Statistics have been provided in weekly, monthly and YTD bins for the datasets listed below:

- Transactions
- Classification
- Accounts
- Transponders

Transactions

The statistics provided in the following section outline the volume and percentage of NCQP users compared to Bill by Mail users. NCQP users have an established account that is identified using the vehicle's onboard transponder, whereas Bill by Mail users do not have an established account and are identified using vehicle recognition software.

Table 1 presents a summary of the total weekly 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
	Transactions	% of Total	Transactions	% of Total	
10/6/2013	292,754	59%	205,406	41%	498,160
10/13/2013	286,946	59%	199,454	41%	486,400
10/20/2013	293,946	58%	208,600	42%	502,546
10/27/2013	303,043	59%	208,227	41%	511,270
11/3/2013	303,287	60%	203,756	40%	507,043
11/10/2013	310,147	60%	206,204	40%	516,351
11/17/2013	305,008	59%	208,873	41%	513,881
11/24/2013	314,369	60%	205,333	40%	519,702
*12/1/2013	212,063	55%	176,129	45%	388,192
12/8/2013	313,698	61%	204,181	39%	517,879
12/15/2013	316,509	61%	203,813	39%	520,322
12/22/2013	318,666	59%	217,600	41%	536,266
**12/29/2013	162,436	52%	151,347	48%	313,783
***12/31/2013	66,974	57%	50,577	43%	117,551

*Week ending includes data from Thanksgiving

**Week ending includes data from Christmas

***Week ending contains data for 12/30 and 12/31

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

Table 2: Total Monthly Transactions

Month	Transponder (NC Quick Pass)		Video (Bill by Mail)		Total
	Transactions	% of Total	Transactions	% of Total	
October	1,339,496	59%	920,059	41%	2,259,555
November	1,214,622	59%	879,721	41%	2,068,186
December	1,195,720	59%	845,766	41%	2,041,496

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

Figure 14: Total Monthly Transactions YTD

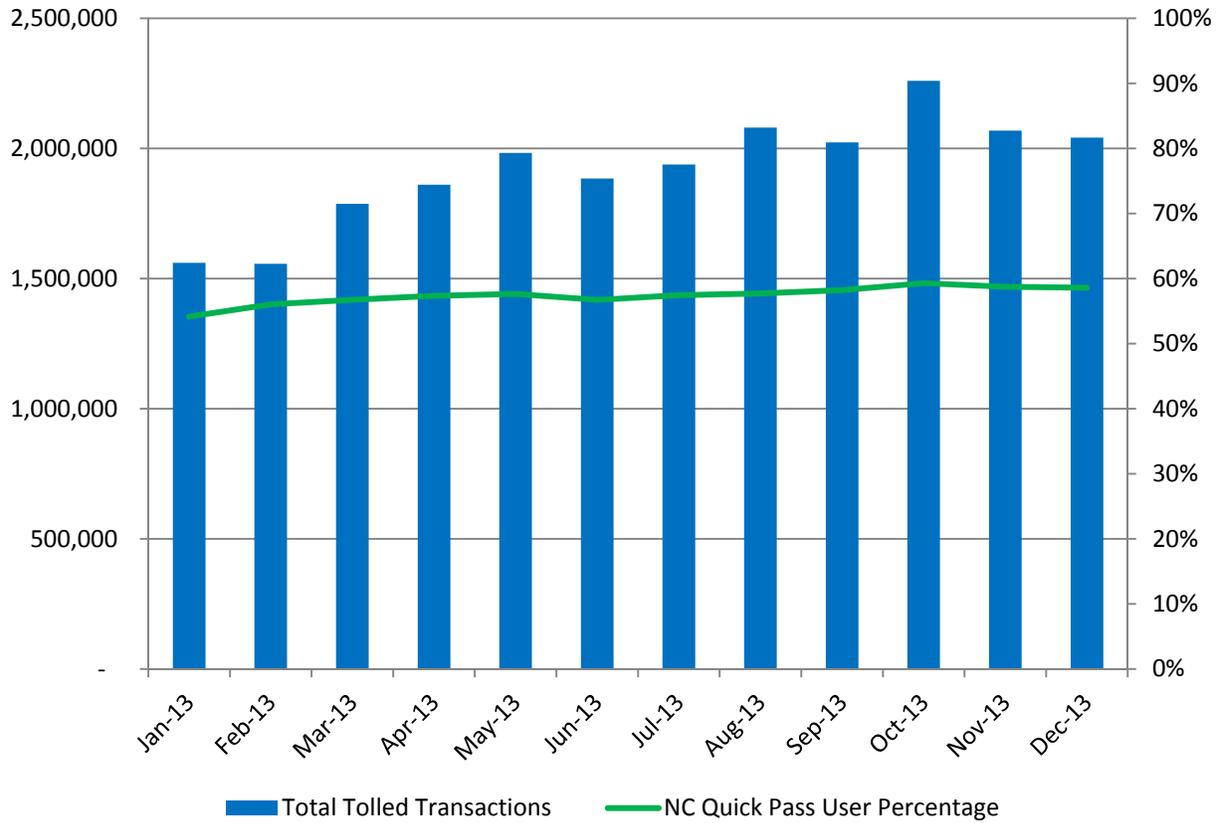


Table 3 presents a summary of the total yearly transactions for NC Quick Pass and Bill by Mail transactions. Project to date is the total number of transactions since the opening of the project.

Table 3: Total Yearly Transactions

Year	Transponder (NC Quick Pass)		Video (Bill by Mail)		Total
	Transactions	% of Total	Transactions	% of Total	
2012	2,803,043	49%	2,892,496	51%	5,695,539
2013	13,249,972	58%	9,792,975	42%	23,042,947
Project to Date	16,053,015	56%	12,685,471	44%	28,738,486

Classification

The statistics provided in the following section outline the volume and percentage of users based on classification. The classification system used by NCTA contains three classifications designated by the number of axles that a vehicle has.

Table 4 presents a summary of the total weekly 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)	
	Transactions	% of Total	Transactions	% of Total	Transactions	% of Total
10/6/2013	479,523	96%	6,537	1%	12,100	3%
10/13/2013	471,564	97%	5,128	1%	9,708	2%
10/20/2013	484,629	97%	6,617	1%	11,300	2%
10/27/2013	491,941	96%	7,139	1%	12,190	3%
11/3/2013	488,839	97%	6,673	1%	11,531	2%
11/10/2013	498,317	97%	6,465	1%	11,569	2%
11/17/2013	495,131	97%	6,676	1%	12,074	2%
11/24/2013	501,821	97%	6,221	1%	11,660	2%
*12/1/2013	379,131	98%	3,156	1%	5,905	1%
12/8/2013	500,746	97%	5,681	1%	11,452	2%
12/15/2013	505,976	97%	4,622	1%	9,724	2%
12/22/2013	516,800	97%	6,520	1%	12,946	2%
**12/29/2013	306,193	97%	2,407	1%	5,183	2%
***12/31/2013	113,033	96%	1,465	1%	3,053	3%

*Week ending includes data from Thanksgiving

**Week ending includes data from Christmas

***Week ending contains data for 12/30 and 12/31

Table 5 presents a summary of the total monthly classification for Class 1 (2-axle), Class 2 (3-axle) and Class 3 (4+axle) vehicles.

Table 5: Total Monthly Classification

Month	Class 1 (2-axle)		Class 2 (3-axle)		Class 3 (4+axle)	
	Transactions	% of Total	Transactions	% of Total	Transactions	% of Total
October	2,178,172	97%	29,368	1%	52,015	2%
November	2,000,471	97%	24,080	1%	43,635	2%
December	1,978,161	97%	20,824	1%	42,511	2%

Figure 15 presents a visual summary of the total monthly percentage of transactions YTD for Class 1 (2-axle) vehicles.

Figure 15: Total Monthly Class 1 Percentage YTD

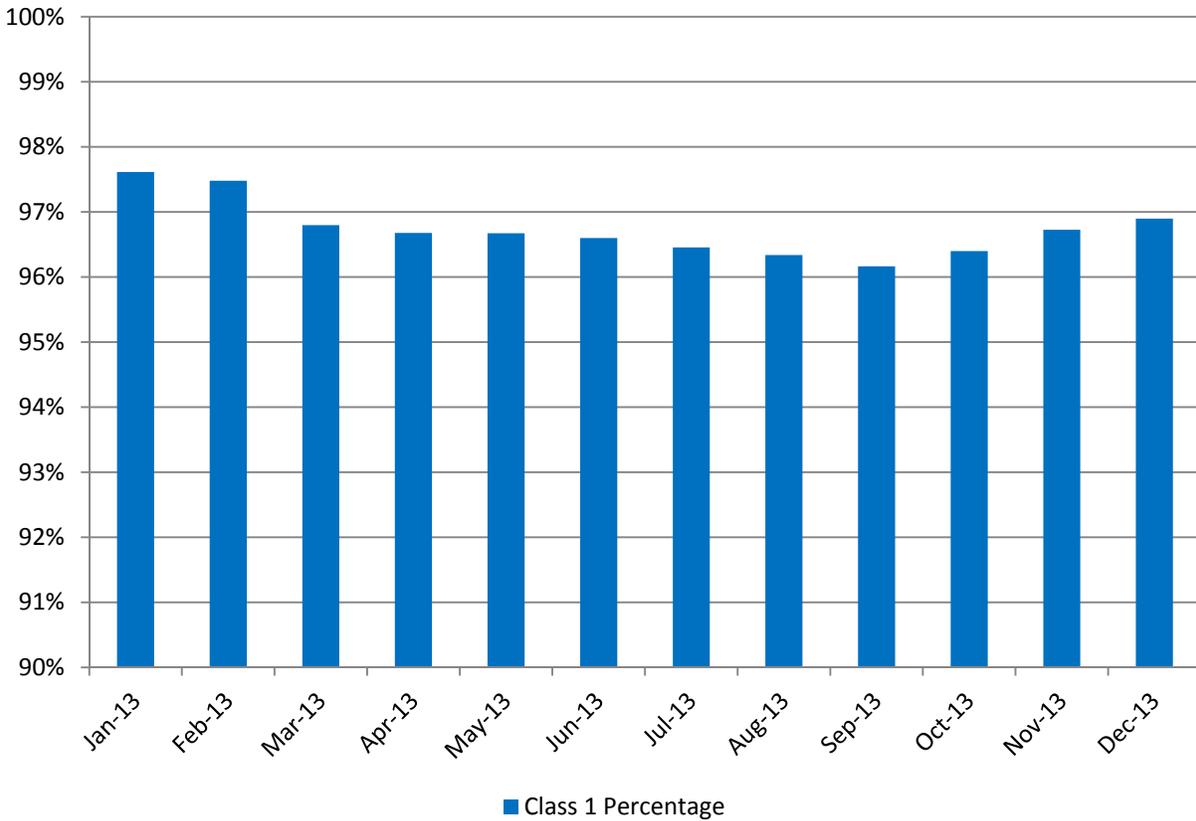


Table 6 presents a summary of the total yearly classification for Class 1 (2-axle), Class 2 (3-axle) and Class 3 (4+axle) vehicles. Project to date is the total number of transactions since the opening of the project.

Table 6: Total Yearly Classification

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%	46,935	1%	86,543	2%
2013	22,282,351	97%	267,558	1%	493,038	2%
Project to Date	27,844,412	97%	314,493	1%	579,581	2%

Accounts

The statistics provided in the following section outline the volume of accounts established and managed by the NCTA CSC.

Table 7 presents a summary of the weekly established accounts being managed by the NCTA CSC. Numbers presented in parentheses represent a reduction in accounts.

Table 7: Total Weekly Established Accounts by Type

Week Ending	Transponder (NC Quick Pass)	Bill by Mail	Registered Video	Non- Revenue	Government	Total
10/6/2013	332	6,366	-	-	-	6,698
10/13/2013	320	6,517	-	-	-	6,837
10/20/2013	328	6,103	-	1	-	6,432
10/27/2013	324	6,136	-	-	-	6,460
11/3/2013	295	5,834	-	-	-	6,129
11/10/2013	332	5,594	1	-	-	5,927
11/17/2013	350	5,922	-	-	-	6,272
11/24/2013	382	5,577	-	1	-	5,960
*12/1/2013	278	5,325	-	-	-	5,603
12/8/2013	383	5,104	-	-	-	5,487
12/15/2013	350	5,873	-	-	-	6,223
12/22/2013	312	5,493	-	-	-	5,805
**12/29/2013	222	5,713	-	1	-	5,936
***12/31/2013	94	1,039	-	-	-	1,133

*Week ending includes data from Thanksgiving

**Week ending includes data from Christmas

***Week ending contains data for 12/30 and 12/31

Table 8 presents a summary of the monthly established accounts being managed by the NCTA CSC. Numbers presented in parentheses represent a reduction in accounts.

Table 8: Total Monthly Established Accounts by Type

Month	Transponder (NC Quick Pass)	Bill by Mail	Registered Video	Non- Revenue	Government	Total
October	1,397	26,668	-	1	-	28,066
November	1,504	24,659	1	1	-	26,165
December	1,309	23,671	-	1	-	24,981

Figure 16 presents a visual summary of the monthly established accounts YTD being managed by the NCTA CSC. The “Other” category includes registered video, non-revenue and government accounts.

Figure 16: Monthly Established Accounts YTD

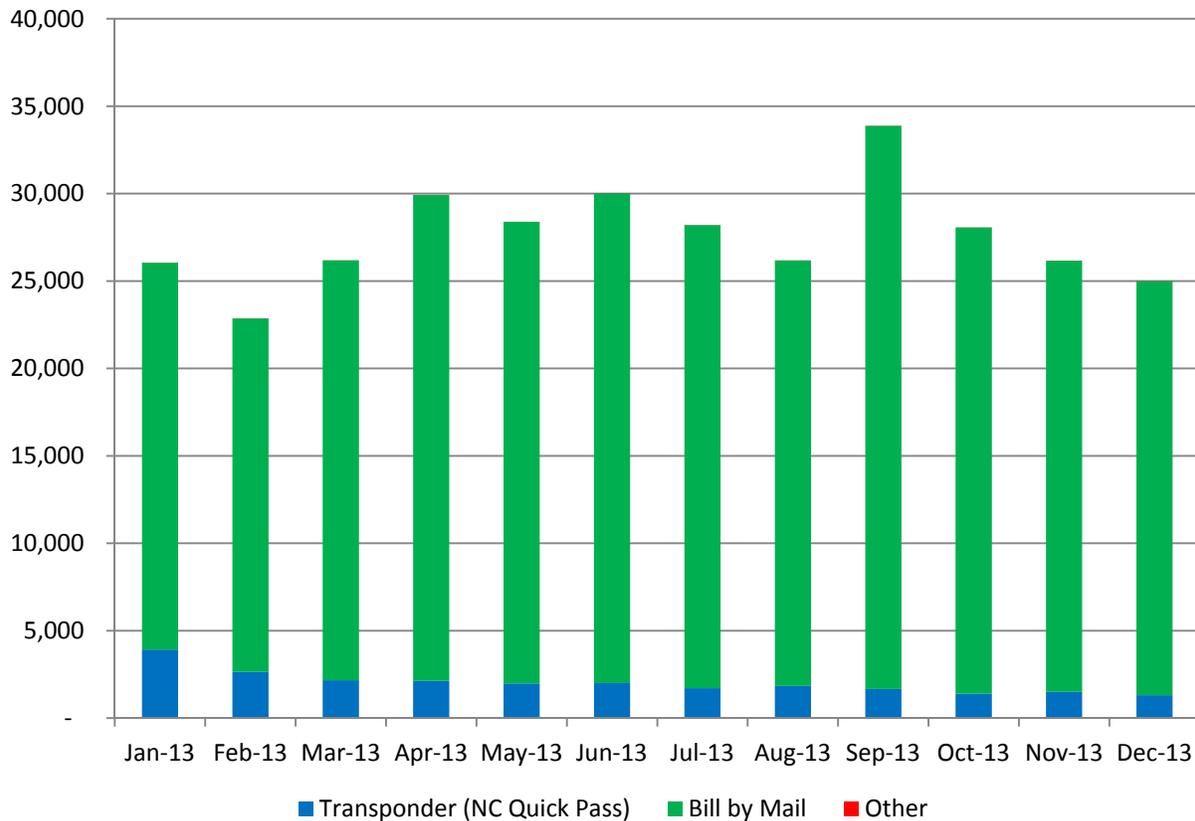


Table 9 presents a summary of the total yearly established accounts being managed by the NCTA CSC. Project to date is the total number of accounts established since the opening of the project. Numbers presented in parentheses represent a reduction in accounts.

Table 9: Total Yearly Established Accounts by Type

Year	Transponder (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
Project to Date	51,447	666,012	4	57	27	717,547

Transponders

The statistics provided in the following section outline the volume of transponders sold by the NC Quick Pass CSC.

Table 10 presents a summary of the total weekly transponders sold.

Table 10: Total Weekly Transponders Sold by Type

Week Ending	Sticker Tag	Hard Case Tag	Exterior Tag	Total
10/6/2013	475	219	6	700
10/13/2013	457	204	-	661
10/20/2013	434	240	41	715
10/27/2013	472	235	6	713
11/3/2013	461	185	5	651
11/10/2013	527	191	2	720
11/17/2013	453	240	4	697
11/24/2013	489	262	3	754
*12/1/2013	330	241	9	580
12/8/2013	565	308	4	877
12/15/2013	422	274	1	697
12/22/2013	394	246	6	646
**12/29/2013	353	178	-	531
***12/31/2013	226	127	1	354

*Week ending includes data from Thanksgiving

**Week ending includes data from Christmas

***Week ending contains data for 12/30 and 12/31

Table 11 presents a summary of the total monthly transponders sold.

Table 11: Total Monthly Transponders Sold by Type

Month	Sticker Tag	Hard Case Tag	Exterior Tag	Total
October	2,051	994	57	3,102
November	1,915	971	18	2,904
December	1,998	1,145	12	3,155

Figure 17 presents a visual summary of the monthly transponders sold YTD.

Figure 17: Total Monthly Transponders Sold by Type YTD

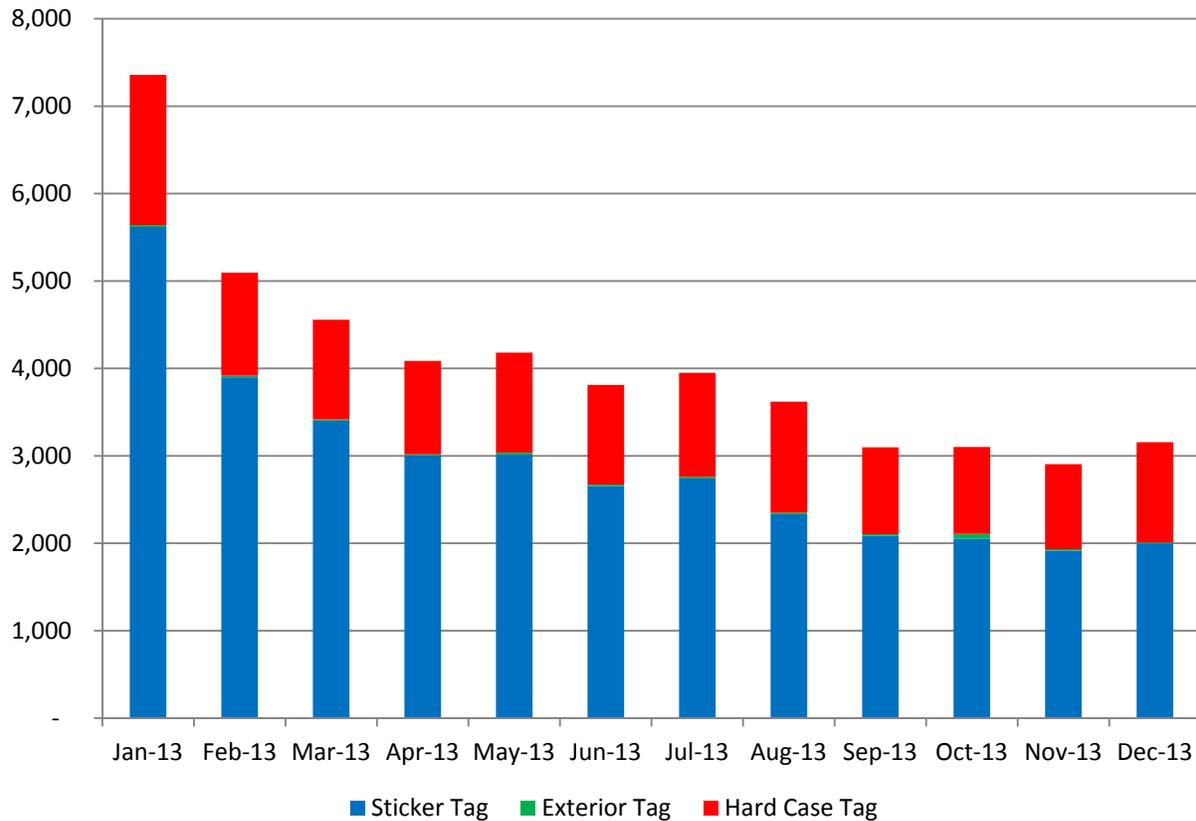


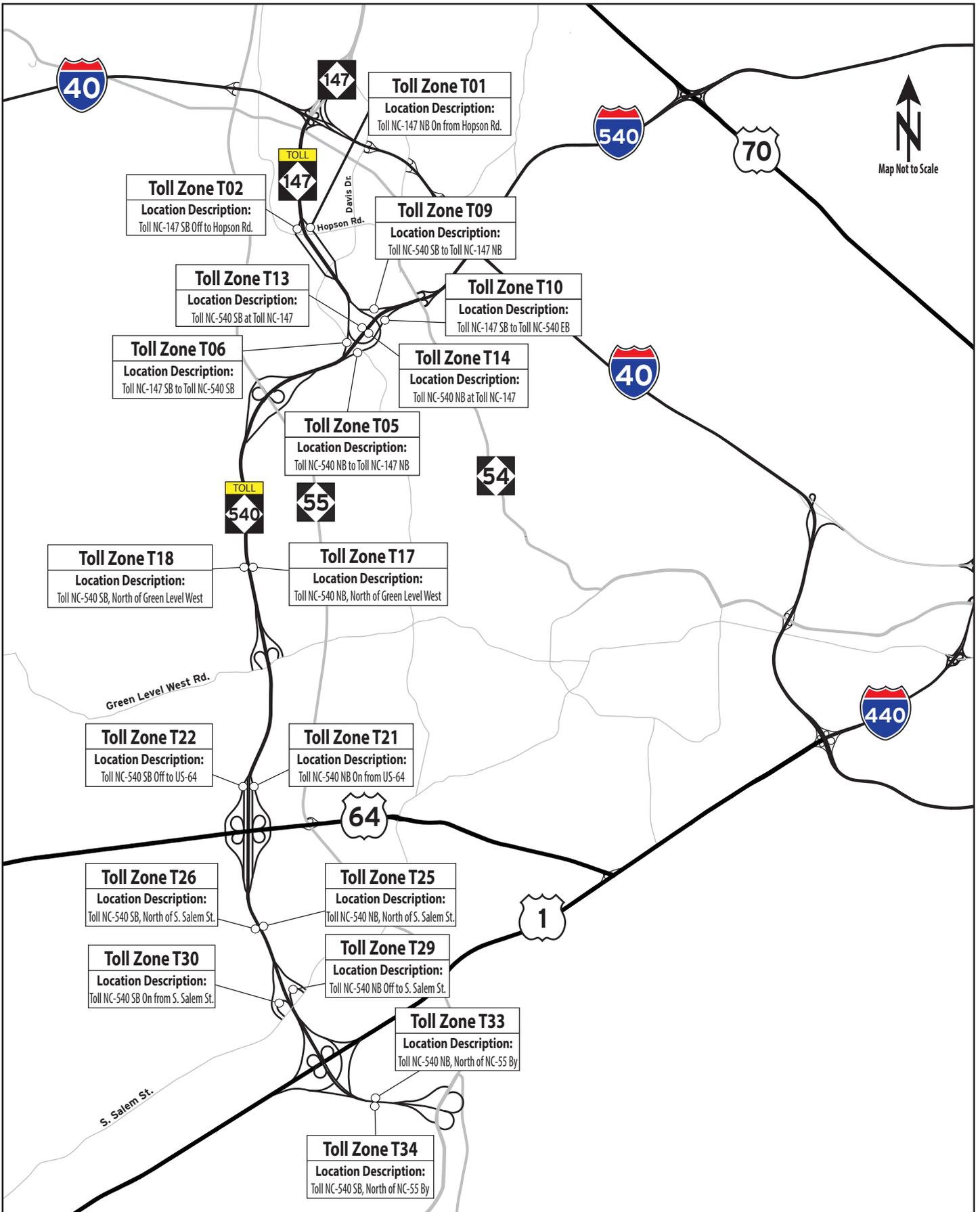
Table 12 presents a summary of the total yearly transponders sold. Transponders went on sale prior to the opening of the roadway to provide potential motorists sufficient time to establish their accounts. Project to date is the total number of transponders sold since the opening of the project and includes these transponders sold prior to the opening of the roadway to traffic.

Table 12: Total Yearly Transponders Sold by Type

Year	Sticker Tag	Hard Case Tag	Exterior Tag	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
Project to Date	77,437	23,647	707	101,791

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*.



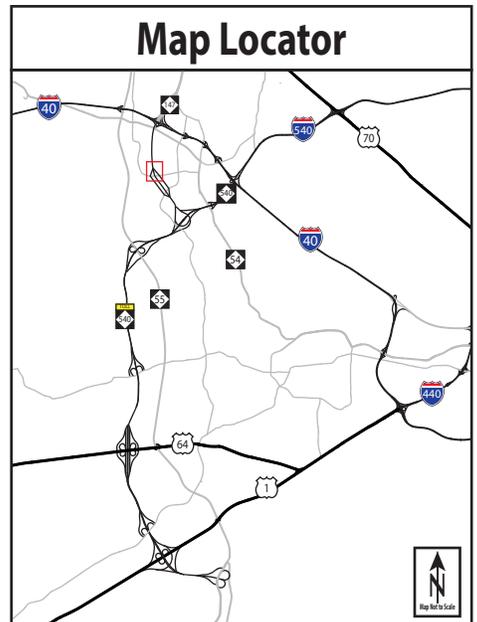
Triangle Expressway Toll Zone Map

Figure 18



Transactions by Direction		
Month	T01	T02
January	1,400	1,360
February	1,500	1,460
March	1,530	1,470
April	1,560	1,480
May	1,600	1,550
June	1,590	1,540
July	1,550	1,500
August	1,600	1,550
September	1,620	1,550
October	1,610	1,550
November	1,670	1,620
December	1,690	1,610

NC Quick Pass Percentage		
Month	T01	T02
January	64%	64%
February	64%	64%
March	64%	64%
April	63%	63%
May	63%	62%
June	62%	60%
July	63%	61%
August	63%	62%
September	63%	62%
October	61%	61%
November	62%	62%
December	63%	63%



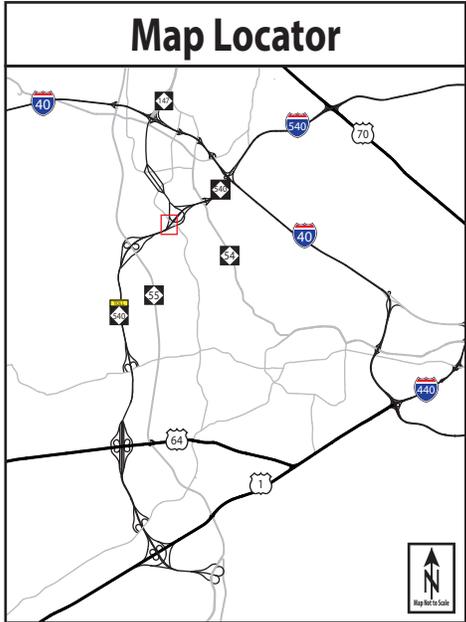
Hopson Road Ramp Toll Zones
2013 Average Weekday Toll Transactions

Figure
19



Transactions by Direction		
Month	T05	T06
January	2,880	2,710
February	3,150	2,970
March	3,310	3,040
April	3,440	3,150
May	3,600	3,370
June	3,620	3,420
July	3,710	3,470
August	3,940	3,660
September	3,940	3,680
October	4,180	3,910
November	4,320	4,100
December	4,360	4,100

NC Quick Pass Percentage		
Month	T05	T06
January	62%	64%
February	64%	65%
March	64%	66%
April	64%	66%
May	64%	65%
June	64%	66%
July	63%	65%
August	63%	65%
September	63%	65%
October	64%	66%
November	65%	66%
December	65%	67%



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

Figure 20



Toll Zone T14
Location Description:
 NC 540 SB Mainline at NC 147
Segment Description:
 Three-lane Mainline

Toll Zone T13
Location Description:
 NC 540 NB Mainline at NC 147
Segment Description:
 Three-lane Mainline

Toll Rates

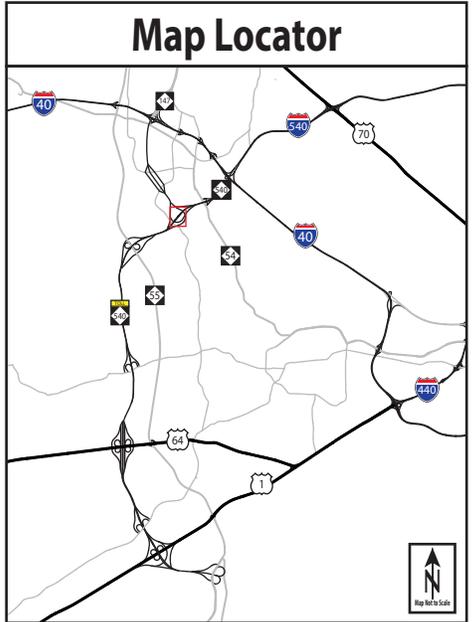
2 AXLES	\$0.52	\$0.80
3 AXLES	\$1.04	\$1.60
4+ AXLES	\$2.08	\$3.20

Transactions by Direction

Month	T13	T14
January	8,230	8,700
February	8,740	9,250
March	9,100	9,640
April	9,200	9,790
May	9,650	10,220
June	9,560	10,080
July	9,380	9,870
August	9,970	10,380
September	9,920	10,310
October	10,190	10,780
November	10,500	10,960
December	10,710	11,190

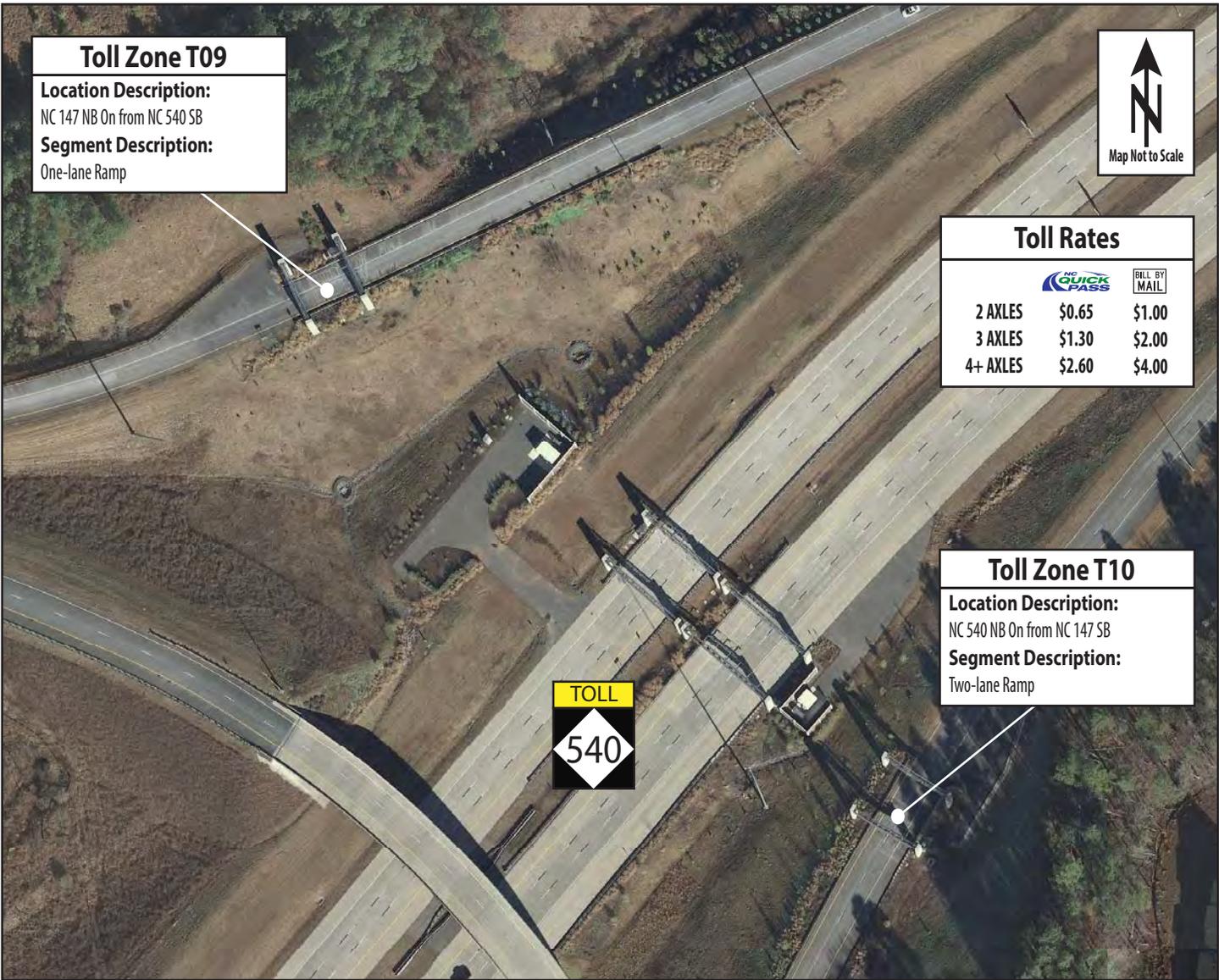
NC Quick Pass Percentage

Month	T13	T14
January	56%	56%
February	57%	58%
March	58%	58%
April	59%	59%
May	59%	59%
June	58%	58%
July	59%	59%
August	57%	59%
September	59%	59%
October	60%	60%
November	60%	60%
December	61%	59%



NC-540 Morrisville Mainline Toll Zones
 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

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

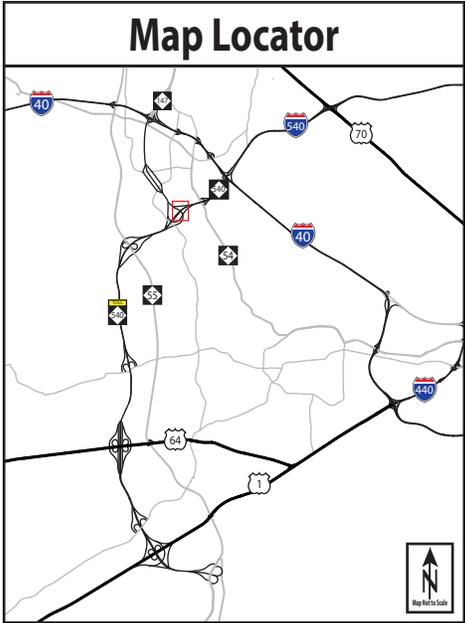


Transactions by Direction

Month	T09	T10
January	720	740
February	770	790
March	780	810
April	820	870
May	850	910
June	880	970
July	880	1,010
August	930	1,050
September	940	1,060
October	990	1,120
November	1,020	1,220
December	1,060	1,180

NC Quick Pass Percentage

Month	T09	T10
January	57%	63%
February	58%	63%
March	58%	63%
April	58%	62%
May	57%	62%
June	56%	59%
July	56%	58%
August	55%	58%
September	56%	60%
October	57%	61%
November	58%	61%
December	58%	62%



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

Figure 22



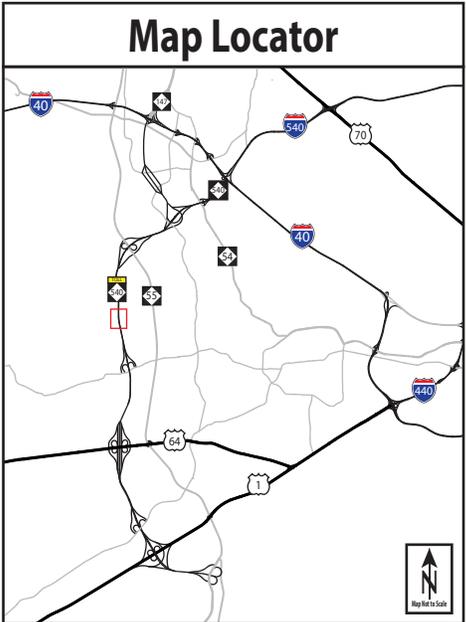
Toll Zone T18
Location Description:
 NC 540 SB, North of Green Level West
Segment Description:
 Three-lane Mainline

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

Toll Rates		
2 AXLES	\$0.65	\$1.00
3 AXLES	\$1.30	\$2.00
4+ AXLES	\$2.60	\$4.00

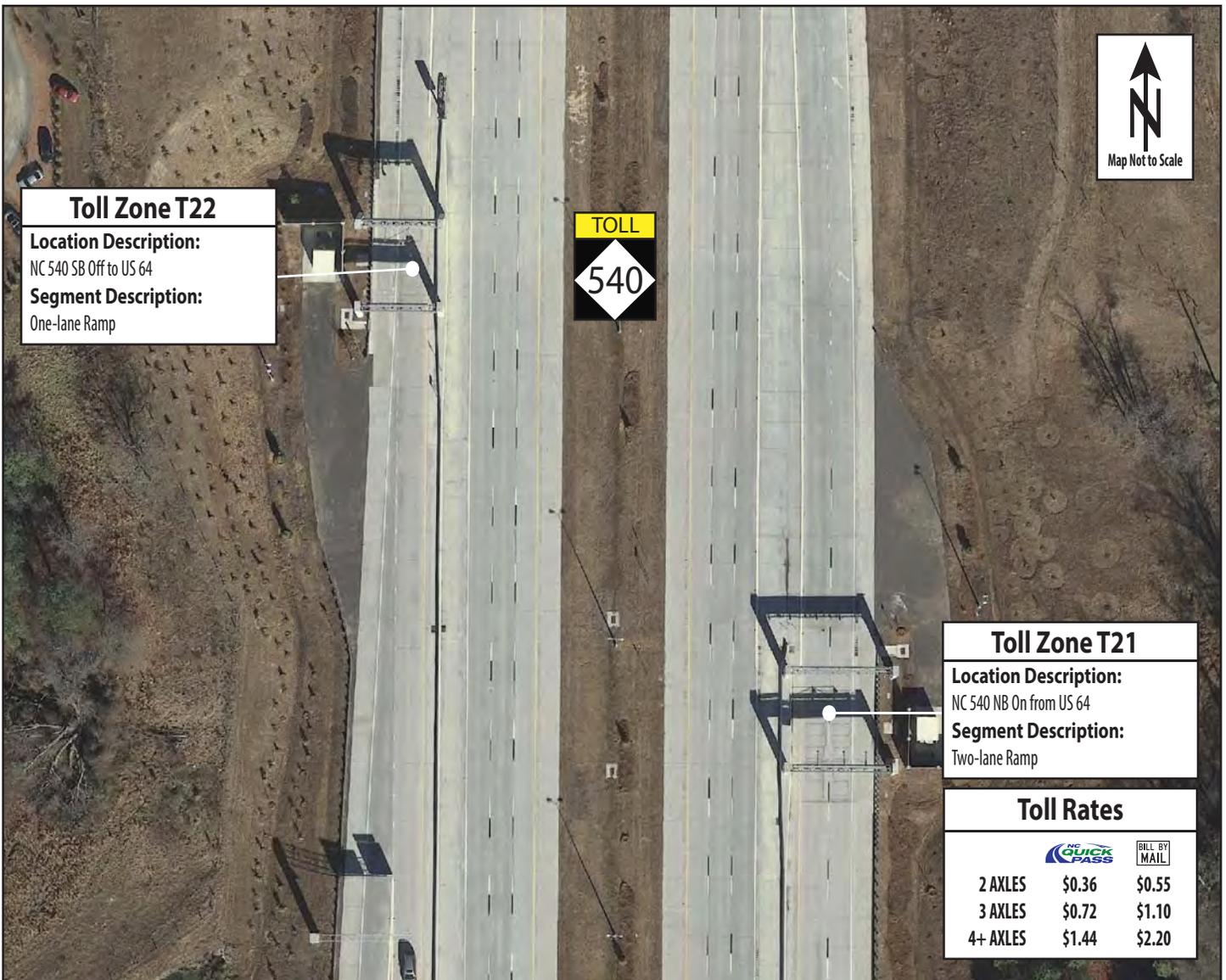
Transactions by Direction		
Month	T17	T18
January	6,360	6,410
February	6,950	6,990
March	7,360	7,270
April	7,580	7,520
May	7,930	7,940
June	8,000	8,120
July	8,080	8,160
August	8,460	8,510
September	8,550	8,540
October	8,950	8,970
November	9,270	9,420
December	9,590	9,570

NC Quick Pass Percentage		
Month	T17	T18
January	54%	57%
February	55%	59%
March	58%	61%
April	58%	61%
May	57%	61%
June	56%	61%
July	56%	61%
August	53%	62%
September	55%	62%
October	59%	62%
November	59%	63%
December	60%	63%



NC-540 Cary Mainline Toll Zones
 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

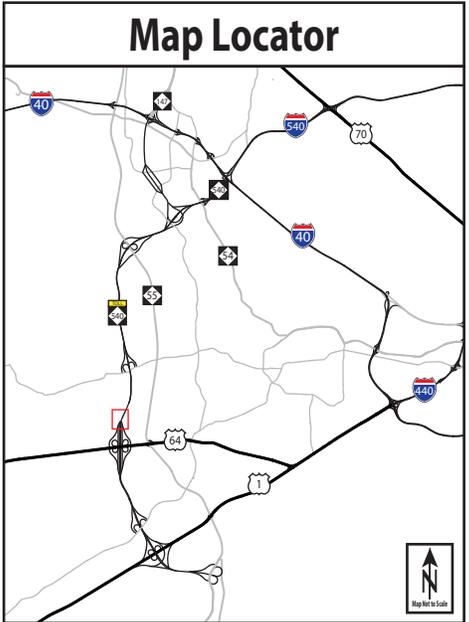
		BILL BY MAIL
2 AXLES	\$0.36	\$0.55
3 AXLES	\$0.72	\$1.10
4+ AXLES	\$1.44	\$2.20

Transactions by Direction

Month	T21	T22
January	2,630	2,600
February	2,780	2,780
March	2,860	2,840
April	2,880	2,840
May	2,910	2,900
June	2,850	2,910
July	2,820	2,840
August	2,970	2,980
September	2,950	2,960
October	3,050	3,080
November	3,090	3,140
December	3,190	3,200

NC Quick Pass Percentage

Month	T21	T22
January	64%	64%
February	65%	65%
March	66%	66%
April	66%	65%
May	64%	64%
June	64%	58%
July	63%	60%
August	64%	64%
September	64%	64%
October	65%	65%
November	65%	66%
December	65%	66%



US-64 Ramp Toll Zones
 2013 Average Weekday Toll Transactions

Figure 24



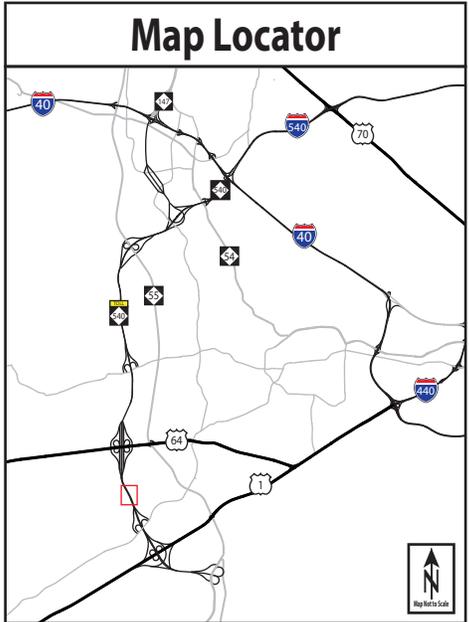
Toll Zone T26
Location Description:
 NC 540 SB, North of S. Salem St.
Segment Description:
 Three-lane Mainline

Toll Zone T25
Location Description:
 NC 540 NB, North of S. Salem St.
Segment Description:
 Three-lane Mainline

Toll Rates		
2 AXLES	\$0.82	\$1.26
3 AXLES	\$1.64	\$2.52
4+ AXLES	\$3.28	\$5.04

Transactions by Direction		
Month	T25	T26
January	4,390	4,350
February	4,960	4,840
March	5,370	5,180
April	5,650	5,460
May	5,970	5,780
June	6,060	5,920
July	6,150	5,990
August	6,440	6,260
September	6,570	6,330
October	6,920	6,670
November	7,190	7,030
December	7,500	7,140

NC Quick Pass Percentage		
Month	T25	T26
January	49%	51%
February	52%	55%
March	54%	57%
April	52%	58%
May	55%	59%
June	55%	59%
July	57%	59%
August	57%	60%
September	57%	59%
October	58%	61%
November	60%	61%
December	60%	61%



NC-540 Apex Mainline Toll Zones
 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

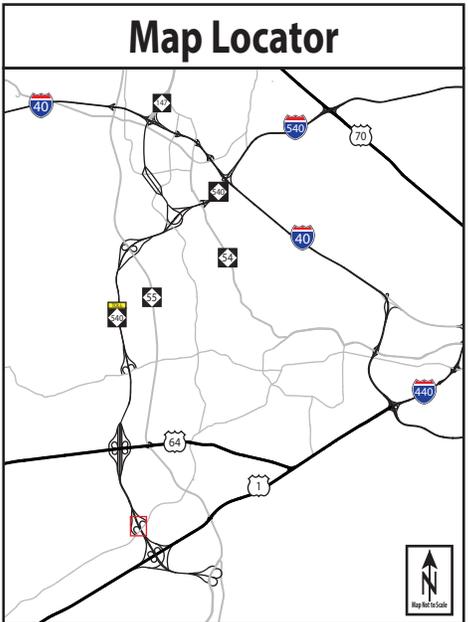
2 AXLES	\$0.21	\$0.32
3 AXLES	\$0.42	\$0.64
4+ AXLES	\$0.84	\$1.28

Transactions by Direction

Month	T29	T30
January	290	320
February	360	390
March	430	460
April	460	490
May	500	530
June	460	520
July	460	510
August	520	590
September	600	640
October	630	670
November	640	680
December	690	740

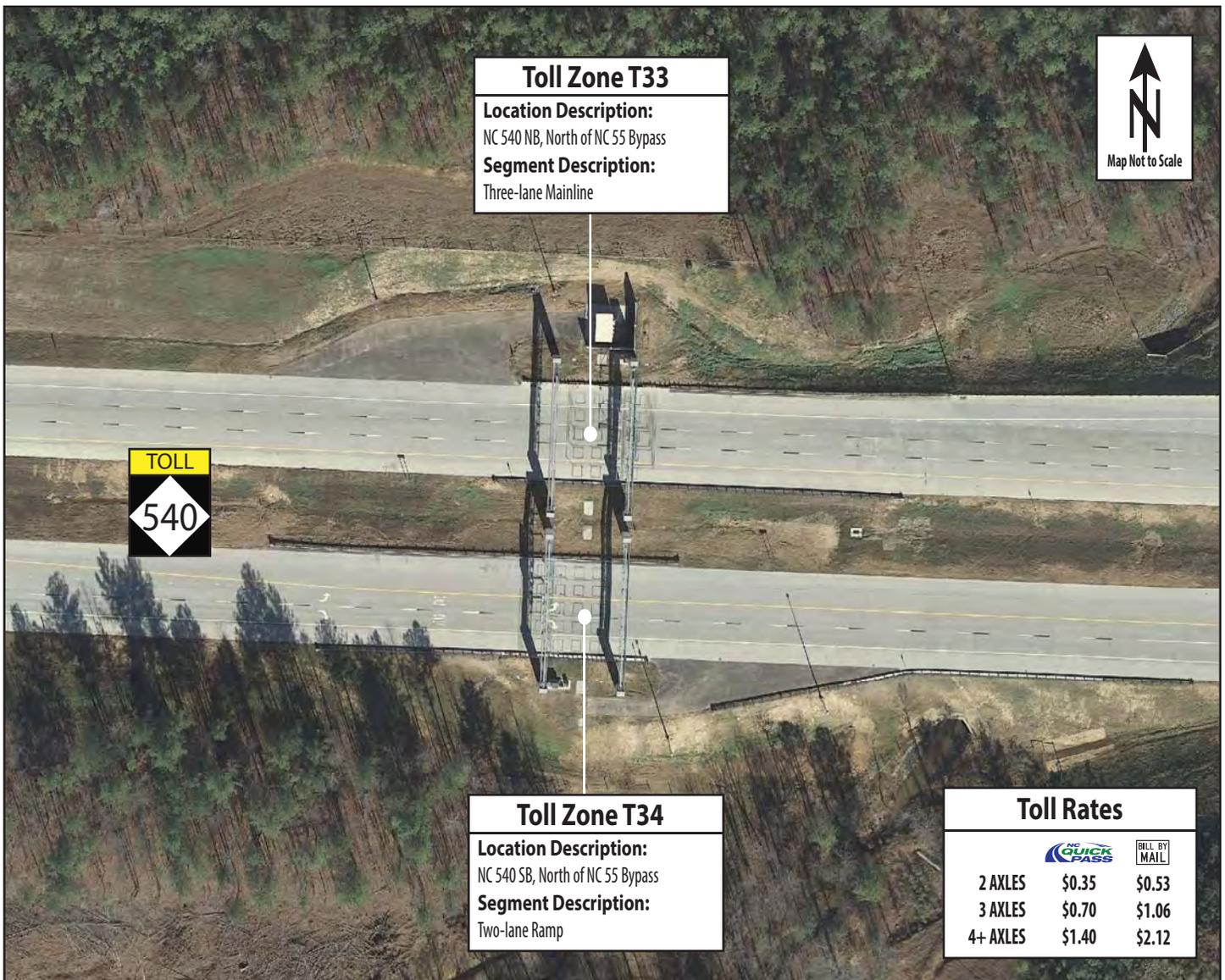
NC Quick Pass Percentage

Month	T29	T30
January	62%	59%
February	64%	63%
March	63%	63%
April	65%	65%
May	68%	66%
June	67%	65%
July	65%	67%
August	69%	68%
September	70%	69%
October	73%	72%
November	72%	71%
December	72%	72%



South Salem Street Ramp Toll Zones
 2013 Average Weekday Toll Transactions

Figure 26



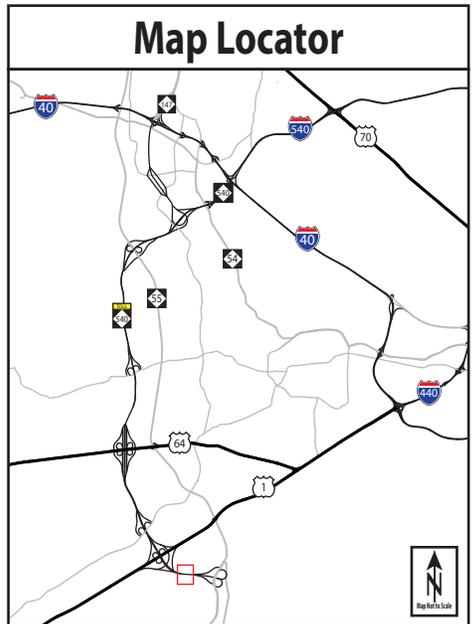
Toll Zone T33
Location Description:
 NC 540 NB, North of NC 55 Bypass
Segment Description:
 Three-lane Mainline

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	4,130	4,060
May	4,400	4,300
June	4,410	4,390
July	4,430	4,380
August	4,700	4,630
September	4,830	4,620
October	5,060	4,900
November	5,250	5,100
December	5,570	5,260

NC Quick Pass Percentage		
Month	T33	T34
January	51%	51%
February	55%	56%
March	59%	59%
April	60%	60%
May	61%	61%
June	61%	61%
July	61%	61%
August	62%	62%
September	63%	63%
October	62%	63%
November	64%	63%
December	64%	63%



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

Figure 27

Roadway Operations

ROADWAY OPERATIONS

Operations statistics are collected by 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 Patrol and Incident Management Assistance Patrol, 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 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 Triangle Expressway also has contracted Highway Patrol officers and a dedicated Incident Management Assistance Patrol (IMAP) that 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 13 presents operating statistics for the State Highway Patrol.

Table 13: SHP Statistics

Charge	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Speed Violations	88	97	109	129	114	118	121	153	110	77	79	96	1,291
Alcohol Violations	0	0	0	1	0	0	0	1	0	1	0	0	3
Seat Belt Violations	9	14	17	24	11	13	14	23	11	12	13	6	167
Child Restraint Violations	0	0	1	0	0	0	1	0	2	0	0	0	4
Other Violations	58	81	80	64	61	65	68	87	53	62	46	70	795
Total Charges	155	192	207	218	186	196	204	264	176	152	138	172	2,260
Warnings	125	127	150	197	117	78	130	173	185	208	127	91	1,708
Vehicles Towed	0	0	0	0	0	0	0	0	0	0	0	0	0
Crashes Investigated	5	3	1	6	6	3	3	3	3	8	13	6	60

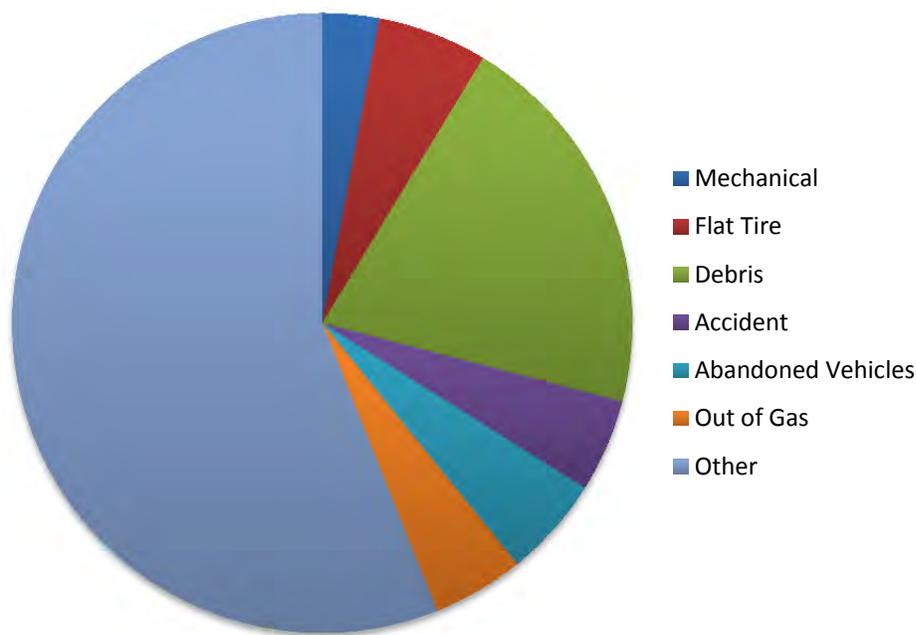
The IMAP assists with stranded motorists and incident clearance, thereby maintaining the flow of traffic along the roadway. *Table 14* and *Figure 28* present the monthly IMAP assists, by type, for the Triangle Expressway. The “other” category includes the reporting categories of traffic control, assist other unit, secured load, called for assistance, directions, transported, unable to locate and no assistance.

Table 14: 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	1	3	4	3	1	1	1	9	31
Flat Tire	5	2	3	5	4	8	8	8	4	3	3	7	60
Debris	18	17	20	32	32	15	30	15	7	14	12	2	214
Accident	4	1	2	4	4	4	4	4	1	6	10	7	51
Abandoned Vehicles	3	2	3	6	5	4	5	4	4	6	6	7	55
Out of Gas	9	3	5	3	3	5	4	5	3	5	2	3	50
Other	46	66	71	76	54	52	39	52	35	56	24	17	588
Total Charges	85	93	106	130	103	91	94	91	55	91	58	52	1,049

Figure 28: IMAP Assistance by Type

2013 IMAP Assistance by Type



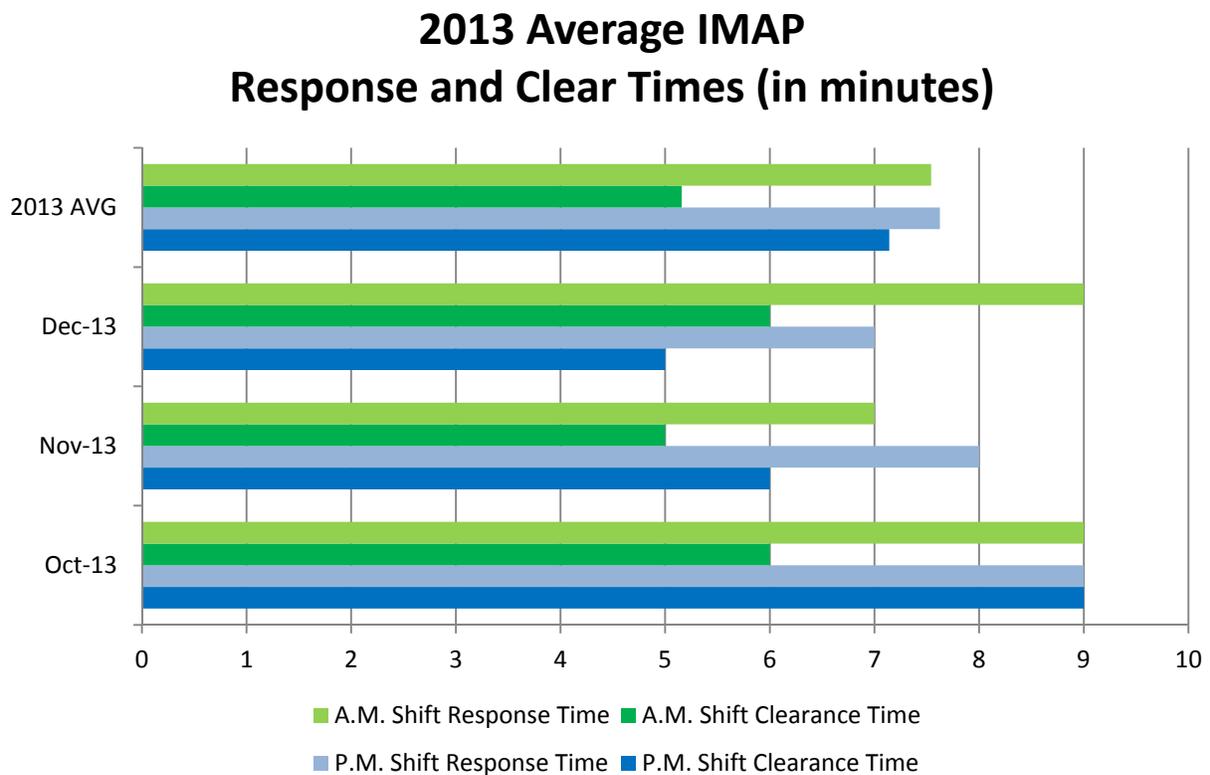
The response and clear times for all IMAP assists are logged by IMAP and provided to the NCTA. Response time is the time from which a responder receives a call to the time they arrive on the scene. Clear time is the time from which it takes the responder to clear the incident and return the roadway to 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 15 and Figure 29 present the average IMAP assistance response and clear times, in minutes, for the Triangle Expressway.

Table 15: 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 Average
A.M. Shift Response	6	11	11	8	6	5	6	6	7	9	7	9	8
A.M. Shift Clearance	8	7	7	10	7	6	6	6	11	9	8	7	8
P.M. Shift Response	5	6	6	5	6	5	4	4	4	6	5	6	5
P.M. Shift Clearance	9	6	6	7	7	7	7	7	10	9	6	5	7

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 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 changes in assets during the various seasons. 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

A table consisting of the Quarterly and Year to Date MRP Assessments results is provided below in *Table 16*. The rating provided for YTD 2013 for each of the elements is a weighted average of the quarters rather than a simple average to balance the occasional unequal sample sizes.

Table 16: MRP Assessment Results

Element	Q1 2013 MRP Rating	Q2 2013 MRP Rating	Q3 2013 MRP Rating	Q4 2013 MRP Rating	2013 MRP Rating
Road Surface	97.4	98.3	98.1	91.5	96.3
Unpaved Shoulders	98.8	96.4	97.9	96.3	97.3
Drainage	91.4	89.2	91.0	90.7	92.2
Roadside	99.3	96.2	83.9	93.6	93.4
Traffic Control Devices	93.0	88.4	94.7	93.4	92.4
Overall MRP Performance Rating	95.7	93.4	93.6	92.9	94.2