ITSMR Research Note

KEY FINDINGS

BAC TESTING RATES

➢ 78% of drivers ticketed for alcohol-impaired (A-I) driving and 76% of drinking drivers in fatal crashes had their BAC level tested.

➢ Of drivers ticketed for A-I driving, the New York City (NYC) and Upstate regions had the highest BAC testing rates, 79% and 76%, respectively; Long Island's testing rate was 62%.

➢ Of drinking drivers in fatal crashes, the Long Island and Upstate regions had the highest BAC testing rates, 79% and 77%, respectively; NYC had a testing rate of 57%.

➢ 73% of male drivers and 75% of female drivers ticketed for A-I driving were tested; of the drinking drivers in fatal crashes, 76% of men vs. 64% of women were tested.

➢ Of drivers ticketed and tested for A-I driving, driver ages 60 and over had the highest testing rate (77%); of drinking drivers in fatal crashes, drivers in the 50-59 age group had the highest testing rate (87%).

BAC LEVELS

➢ Largest proportion of drivers arrested for A-I driving had a BAC of 0.08%-0.14% (47%); the largest proportion of drinking drivers in fatal crashes had a BAC of 0.18% or above (39%);

➢ Drinking drivers in fatal crashes in NYC had a lower average BAC than drinking drivers in the Upstate or Long Island regions (0.12% vs 0.16%).

➢ Male and female drivers ticketed for A-I driving had the same average BAC (0.15%). Male and female drinking drivers in fatal crashes also had the same average BAC (0.16%).

➢ Of the drinking drivers in fatal crashes, drivers ages 50-59 had the highest average BAC (0.19%), whereas of the drivers ticketed for A-I driving, drivers ages 30 and above had the highest and the same average BAC of 0.15%.

CONCLUSION

➢ Neither the BAC testing rate nor the average BAC level has changed substantially over the three years in the two groups of drivers studied. This finding provides support for the state's Advisory Council on Impaired Driving in developing and implementing new programs and policies to combat the continuing problem of alcohol-impaired driving.

BAC Testing Rates and BAC Levels of Alcohol-Impaired Drivers on New York Roadways: 2015 – 2017

INTRODUCTION

Because of concern in recent years related to whether BAC levels are dropping among alcohol-impaired drivers, as well as concerns related to the level of BAC reporting, the Institute for Traffic Safety Management and Research (ITSMR) recently completed a study on the issue of BAC testing rates and BAC levels. Funded by the NYS Governor's Traffic Safety Committee (GTSC), the study focused on two groups of drivers: 1) drivers ticketed for alcohol-impaired driving and 2) drinking drivers involved in fatal crashes.

The study examined the BAC testing rates and BAC levels of the drivers in each of these two groups. This Research Note provides the following information on BAC testing rates and BAC levels:

➢ Overview
➢ Geographic location
➢ Driver gender and age

Focusing on the three-year period, 2015-2017, the crash and ticket data for the study were obtained from ITSMR's TSSR system, the NYS DMV Accident Information System (AIS) and Traffic Safety Law Enforcement and Disposition system (TSLED), the New York City Police Department (NYPD) and the Last Drink Location file maintained by the New York State Police. For analysis purposes, the data were aggregated for the three years, 2015-2017. It should be noted that due to limitations in the data available from the NYPD, some of the analyses with regard to drivers ticketed for alcohol-impaired driving focused on the data solely from the TSLED system.

OVERVIEW

BAC Testing Rates

Over the three years, 2015-2017, 78% of the drivers ticketed for alcohol-impaired driving were tested to measure their BAC level (Table 1). During the same three-year time period, BAC data were reported for 76% of the drinking drivers involved in fatal crashes each year.

TABLE 1 BAC Testing Rates				
	2015	**2016**	**2017**	**2015-2017**
Drivers Ticketed for Alcohol-Impaired (A-I) Driving	**41,606**	**42,005**	**40,921**	**124,532**
# / % Tested	*32,448 (78.0%)*	*32,932 (78.4%)*	*32,296 (78.9%)*	*97,676 (78.4%)*
Drivers in Alcohol-Related Fatal Crashes	**382**	**336**	**298**	**1,016**
Drinking Drivers	**201**	**174**	**158**	**533**
# / % with BAC	*157 (78.1%)*	*125 (71.8%)*	*124 (78.5%)*	*406 (76.2%)*

Further analyses were conducted to determine the extent to which the results of the BAC tests are known. As shown in Table 2, 93% of the drivers ticketed and tested for alcohol-impaired driving and 97% of the drinking drivers in fatal crashes had a reported BAC greater than 0.0% during the three years, 2015-2017.
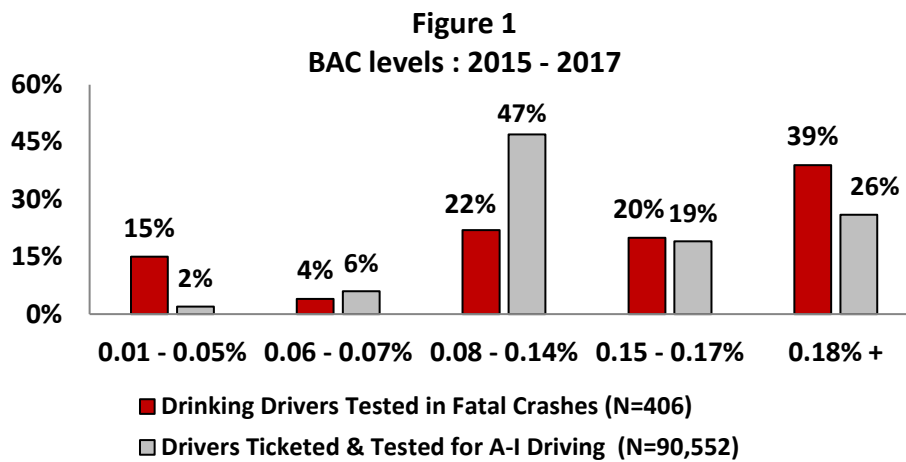
TABLE 2 Results of BAC Testing of Drivers: 2015 - 2017				
	Drivers Ticketed for A-I Driving (N = 97,676)		**Drinking Drivers in Fatal Crashes (N = 406)**	
BAC = 0.0%	2,357	2.4%	**11**	**2.7%**
BAC > 0.0%	90,552	92.7%	395	97.3%
BAC Unk	4,767	4.9%	0	0.0%

BAC Levels

As shown in Table 3, in each of the three years, the average BAC level of drinking drivers involved in fatal crashes varied slightly from year to year. Among drivers ticketed for alcohol-impaired driving, the average BAC level dropped slightly each year when compared to the previous year.   Over the three-year period, 2015-2017, the average BAC among drivers arrested and tested for alcohol-impaired driving was 0.15%, compared to an average BAC of 0.16% among drinking drivers involved in fatal crashes.

TABLE 3 Average BAC Levels of Drivers Tested				
	2015	**2016**	**2017**	**2015-17**
Drivers Ticketed for Alcohol-Impaired Driving (TSLED Only)	0.1483%	0.1476%	0.1469%	0.1475%
Drinking Drivers Involved in Fatal Crashes	0.1595%	0.1650%	0.1451%	0.1568%

Of the drinking drivers involved in fatal crashes who had a reported BAC greater than 0.0%, the largest proportion had a BAC equal to or greater than 0.18% (39%) (Figure 1). In comparison, the largest proportion of drivers ticketed for alcohol-impaired driving had a reported BAC of 0.08% - 0.14% (47%).
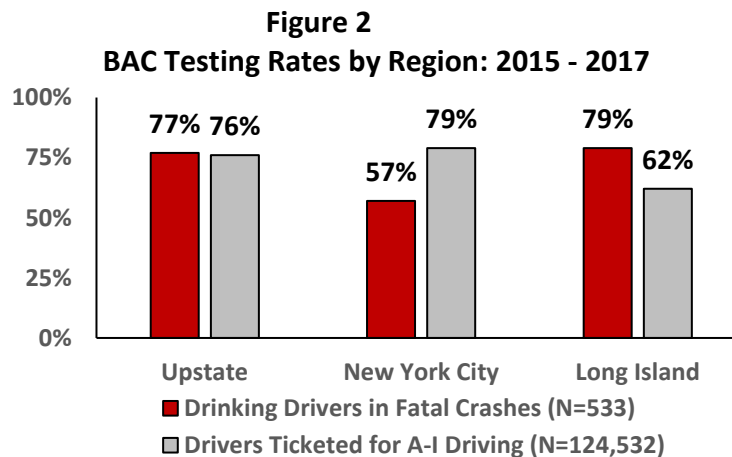
Figure 1
BAC levels : 2015 - 2017

Drinking Drivers Tested in Fatal Crashes (N=406)
Drivers Ticketed & Tested for A-I Driving (N=90,552)

GEOGRAPHIC LOCATION

BAC Testing Rates

To determine whether BAC testing rates vary by geographic location, analyses were conducted by the state's three main geographic regions (New York City, Long Island, and Upstate) and by county. As shown in Figure 2, the Upstate and Long Island regions had very similar BAC testing rates for drinking drivers involved in fatal crashes over the three years (77% and 79%, respectively), while New York City's testing rate was much lower (57%).

For the drivers ticketed for alcohol-impaired driving, the BAC testing rate was highest in New York City (79%), followed by the Upstate region (76%). It was lowest in the Long Island region (62%).

Figure 2
BAC Testing Rates by Region: 2015 - 2017

Drinking Drivers in Fatal Crashes (N=533)
Drivers Ticketed for A-I Driving (N=124,532)

BAC Levels

As shown in Figure 3, the Upstate and Long Island regions had a very similar average BAC level for drinking drivers involved in fatal crashes over the three-year period, 2015–2017 (0.16%). In comparison, the average BAC level in New York City was much lower (0.12%).

Of the drivers who were ticketed and tested for alcohol-impaired driving, the average BAC in the Upstate region was 0.15% and the average BAC for the Long Island region was 0.14%. Because of limitations in the data available for the NYC region, the average BAC could not be determined.

Figure 3
Average BAC Level by Region: 2015 - 2017

■ Drinking Drivers Tested in Fatal Crashes (N=406)
□ Drivers Ticketed & Tested for A-I Driving (TSLED Only) (N=72,498)
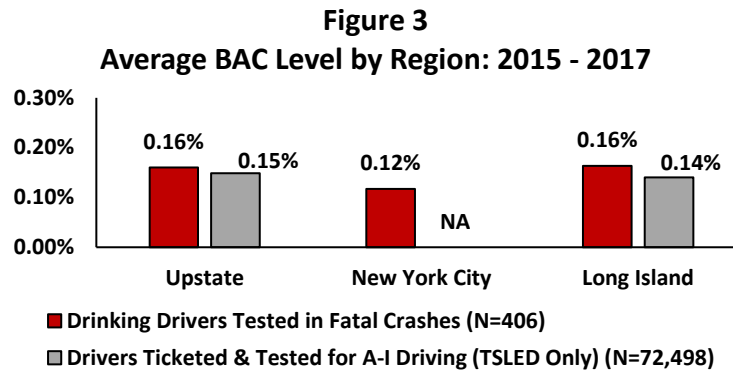
BAC Testing Rates and Levels by County

Analyses of the data on drinking drivers involved in fatal crashes and drivers ticketed for alcohol-impaired driving over the three years were also conducted by county. For the three-year period, 2015-2017, Suffolk County had the highest numbers of drivers ticketed for alcohol-impaired driving and of drinking drivers involved in fatal crashes, followed by Queens and Nassau Counties. Of the almost 8,000 drivers ticketed for alcohol-impaired driving in Suffolk County, 60% were tested, and of the 76 drinking drivers in fatal crashes, 78% were tested. A list of all the counties with their corresponding BAC testing rates and average BAC levels is provided in Appendix A.
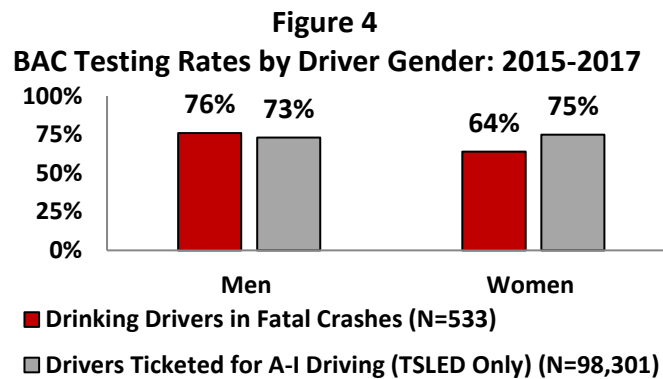
DRIVER GENDER AND AGE

As indicated in Table 4, 87% of the drinking drivers involved in fatal crashes and tested over the three years were men compared to 74% of the drivers ticketed and tested for alcohol-impaired driving.   Table 4 also shows that for both groups of drivers, the largest proportion of drivers tested were ages 21-29 (33% and 36%, respectively).

TABLE 4 Drivers Tested for BAC Level Age and Gender: 2015 - 2017		
	Drinking Drivers in Fatal Crashes: (N=406)	**Drivers Ticketed for A-I Driving (TSLED Only): (N=72,498)**
Gender		
Men	87.2%	73.7%
Women	10.1%	26.3%
Unknown	2.7%	<0.1%
Age		
16-20	3.9%	4.5%
21-29	32.8%	35.7%
30-39	21.2%	24.3%
40-49	16.0%	16.5%
50-59	15.0%	13.3%
60+	8.4%	5.7%
Unknown	2.7%	<0.1%

BAC Testing Rates

Of the drinking drivers involved in fatal crashes, men were much more likely than women to have their BAC level tested (76% vs. 64%, respectively) (Figure 4). Of the drivers ticketed for alcohol-impaired driving, women were slightly more likely than men to have their BAC level tested (75% vs. 73%, respectively).

Figure 4
BAC Testing Rates by Driver Gender: 2015-2017

Drinking Drivers in Fatal Crashes (N=533)
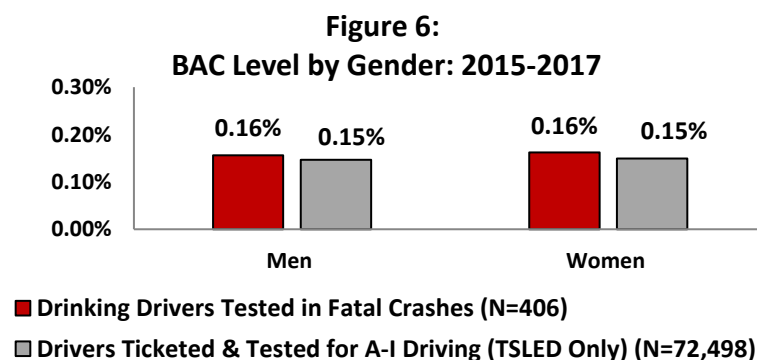Drivers Ticketed for A-I Driving (TSLED Only) (N=98,301)

As shown in Figure 5, the BAC testing rate for drinking drivers involved in fatal crashes was highest among drivers ages 50-59 (87%), followed by drivers ages 40-49 (78%) and above 60 years of age (76%). The BAC testing rate among drivers ticketed for alcohol-impaired driving under TSLED was highest among drivers ages 60 and over (77%), followed closely by drivers ages 16-20 and 21-29 (both 76%).

Figure 5
BAC Testing Rates by Driver Age: 2015 - 2017

Drinking Drivers in Fatal Crashes (N=533)
Drivers Ticketed for A-I Driving (TSLED Only) (N=98,301)
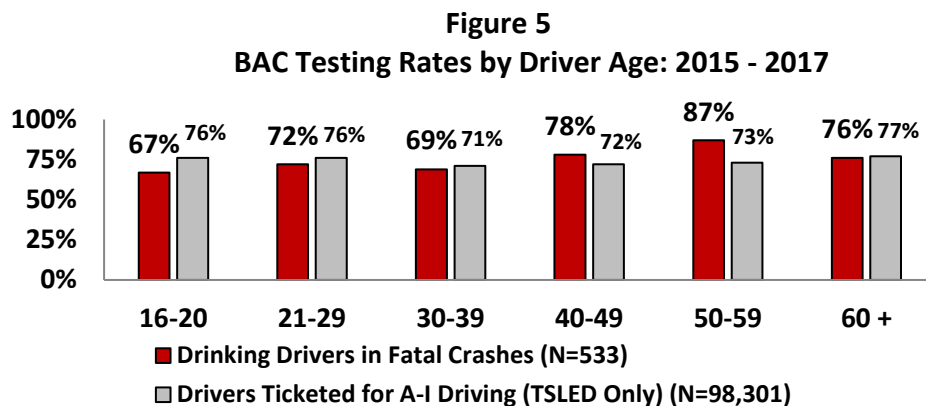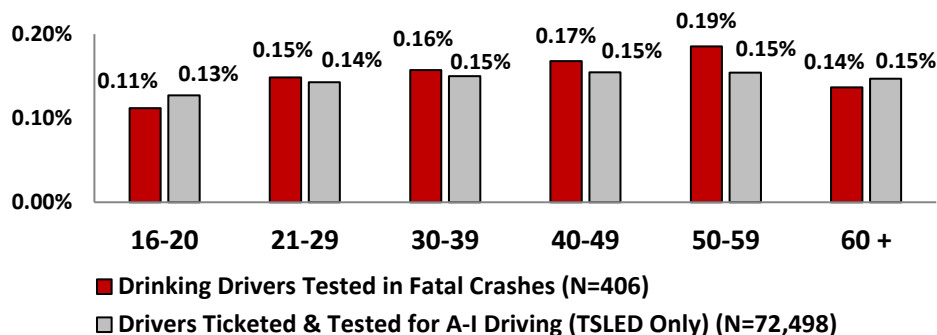
BAC Levels

Of the drinking drivers in fatal crashes, the average BAC for men and women was the same (0.16%) (Figure 6). Men and women ticketed and tested for alcohol-impaired driving under TSLED also had a similar average

Figure 6:
BAC Level by Gender: 2015-2017

Drinking Drivers Tested in Fatal Crashes (N=406)
Drivers Ticketed & Tested for A-I Driving (TSLED Only) (N=72,498)

As indicated in Figure 7, except for the age group 60 and over, the average BAC for drinking drivers involved in fatal crashes generally rose with driver age, increasing from 0.11% among drivers ages 16-20 to 0.19% for drivers ages 50-59. It dropped to 0.14% for drivers ages 60 and above. The average BAC level followed a somewhat different pattern among drivers ticketed for alcohol-impaired driving, increasing from 13% among young drivers ages 16-20 to 15% among drivers ages 30 and above.

Figure 7
BAC Level by Driver Age: 2015 - 2017

Drinking Drivers Tested in Fatal Crashes (N=406)
Drivers Ticketed & Tested for A-I Driving (TSLED Only) (N=72,498)

SUMMARY

The findings of the analyses to examine the BAC testing rates and BAC levels for *drivers ticketed for alcohol-impaired driving* and for *drinking drivers involved in fatal crashes* are summarized in Table *6*. The findings that the BAC testing rate and BAC levels have remained relatively constant over the past three years indicate that much work still needs to be done to reduce the incidence of alcohol-impaired driving on New York's roadways. This information should support the continuing efforts of the state's traffic safety community, in particular the state's Advisory Council on Impaired Driving, in developing and implementing new programs and policies to address the continuing problem of alcohol-impaired driving among New York's motorists.

TABLE 6 BAC Testing Rates and BAC Levels: 2015 -2017				
	Drinking Drivers Involved in Fatal Crashes (N=533)		**Drivers Ticketed for Alcohol-Impaired Driving (N=124,532)**	
	Testing Rate	Average BAC level	Testing Rate	Average BAC level
Statewide	76%	0.16%	78%	0.15% (TSLED Only)
Upstate	77%	0.16%	76%	0.15%
New York City	57%	0.12%	79%	NA
Long Island	79%	0.16%	62%	0.14%
	N=533	N=406	N=98,301 (TSLED Only)	N=72,498 (TSLED Only)
Gender				
Men	76%	0.15%	73%	0.15%
Women	64%	0.16%	75%	0.15%
Age				
Ages 16-20	67%	0.11%	76%	0.13%
Ages 21-29	72%	0.15%	76%	0.14%
Ages 30-39	69%	0.16%	71%	0.15%
Ages 40-49	78%	0.17%	72%	0.15%
Ages 50-59	87%	0.19%	73%	0.15%
Ages 60+	76%	0.14%	77%	0.15%

APPENDIX A

BAC Testing Rates and BAC Levels by County: 2015-2017

	Drinking Drivers Involved in Fatal Crashes			Drivers Ticketed for Alcohol-Impaired Driving		
	Total #	Tested %	AVG BAC	Total #	Tested %	AVG BAC
UPSTATE						
Albany	11	64%	0.17%	3,999	82%	0.14%
Allegany	4	100%	0.14%	648	88%	0.15%
Broome	10	60%	0.12%	1,281	70%	0.16%
Cattaraugus	2	0%	NA	1,142	87%	0.16%
Cayuga	7	71%	0.21%	700	84%	0.16%
Chautauqua	7	29%	0.14%	1,861	86%	0.15%
Chemung	1	0%	NA	788	88%	0.16%
Chenango	1	100%	0.18%	347	86%	0.14%
Clinton	0	NA		1,119	89%	0.14%
Columbia	6	83%	0.20%	623	84%	0.14%
Cortland	4	100%	0.18%	536	79%	0.15%
Delaware	5	80%	0.15%	471	88%	0.15%
Dutchess	12	100%	0.17%	3,574	83%	0.14%
Erie	24	88%	0.15%	7,508	65%	0.16%
Essex	2	100%	0.21%	501	90%	0.14%
Franklin	3	33%	0.06%	641	86%	0.15%
Fulton	3	100%	0.21%	652	88%	0.15%
Genesee	5	80%	0.07%	764	87%	0.15%
Greene	4	100%	0.16%	1,214	88%	0.13%
Hamilton	0	NA		69	96%	0.15%
Herkimer	3	100%	0.21%	605	84%	0.15%
Jefferson	7	100%	0.15%	1,180	89%	0.16%
Lewis	3	100%	0.26%	243	90%	0.16%
Livingston	4	75%	0.21%	822	86%	0.15%
Madison	4	100%	0.07%	555	89%	0.15%
Monroe	21	71%	0.10%	7,332	65%	0.15%
Montgomery	0	NA		545	89%	0.14%
Niagara	3	0%	NA	2,363	67%	0.15%
Oneida	17	94%	0.16%	1,810	83%	0.15%
Onondaga	23	78%	0.19%	3,993	88%	0.16%
Ontario	7	71%	0.19%	1,183	84%	0.16%
Orange	18	89%	0.20%	4,340	76%	0.14%
Orleans	0	NA		472	86%	0.15%
Oswego	17	94%	0.18%	1,392	88%	0.15%
Otsego	3	100%	0.15%	660	90%	0.14%
Putnam	6	83%	0.14%	1,476	81%	0.14%
Rensselaer	6	67%	0.15%	1,605	85%	0.14%
Rockland	4	100%	0.15%	2,315	80%	0.15%
St. Lawrence	4	100%	0.13%	1,127	89%	0.15%

APPENDIX A

BAC Testing Rates and BAC Levels by County: 2015-2017

	Drinking Drivers Involved in Fatal Crashes			Drivers Ticketed for Alcohol-Impaired Driving		
	Total #	Tested %	AVG BAC	Total #	Tested %	AVG BAC
Saratoga	9	67%	0.16%	3,024	87%	0.15%
Schenectady	6	83%	0.15%	994	78%	0.15%
Schoharie	0	NA		336	88%	0.15%
Schuyler	1	0%	NA	231	88%	0.15%
Seneca	5	40%	0.18%	487	88%	0.15%
Steuben	3	100%	0.11%	1,130	86%	0.15%
Sullivan	3	100%	0.13%	1,007	88%	0.14%
Tioga	3	33%	0.42%	404	75%	0.15%
Tompkins	1	0%	NA	831	83%	0.15%
Ulster	8	100%	0.16%	2,825	89%	0.13%
Warren	0	NA		931	90%	0.15%
Washington	5	80%	0.20%	808	91%	0.14%
Wayne	5	80%	0.15%	950	85%	0.15%
Westchester	23	74%	0.14%	5,519	70%	0.15%
Wyoming	2	100%	0.32%	446	88%	0.13%
Yates	0	NA		232	83%	0.15%
Unknown	0	NA		57	70%	0.14%
Sub-Total	**335**	**79%**	**0.16%**	**82,668**	**80%**	**0.15%**
Long Island						
Nassau	39	85%	0.14%	7,685	82%	0.14%
Suffolk	76	78%	0.18%	7,948	60%	0.14%
Sub-Total	**115**	**80%**	**0.16%**	**15,633**	**71%**	**0.14%**
New York City						
Bronx	15	67%	0.10%	4,286	81%	NA
Kings	17	41%	0.10%	6,373	75%	NA
New York	13	31%	0.09%	5,597	81%	NA
Queens	31	77%	0.13%	7,689	82%	NA
Richmond	7	43%	0.12%	2,286	73%	NA
Sub-Total	**83**	**58%**	**0.12%**	**26,231**	**79%**	**NA**
STATEWIDE TOTALS	**533**	**76%**	**0.16%**	**124,532**	**78%**	**0.15%***

Based on TSLED data only.

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