

ILLINOIS
AND
TRAFFIC
PEDESTRIAN
STOP STUDY

2016
ANNUAL
REPORT

Traffic Stop Analysis

Submitted by Alexander Weiss Consulting, LLC



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Illinois Department
of Transportation

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Illinois Traffic Stop Study 2016 Annual Report

Introduction

This is the 13th annual report of the Illinois Traffic Stop Study. Alexander Weiss Consulting, LLC prepared this report for the Illinois Department of Transportation (IDOT). This report describes statewide results and related issues. A separate document includes the results from each agency that participated in the study.

This report examines several items:

- Reporting procedures
- Agency participation
- Stop data
- The ratio of stops of minority drivers to the estimated minority driving population
- The reasons for traffic stops
- The duration of traffic stops
- The outcome of traffic stops
- Consent searches
- Dog sniffs

Illinois Traffic Stop Study Procedures

Since January 2004, police agencies in Illinois have been required to submit data about traffic stops to the Illinois Department of Transportation. This requirement is in place through 2019.¹

A “traffic stop” occurs when an officer stops a motor vehicle for a violation of the Illinois vehicle code, or for a local traffic violation. The Traffic Stop Study data does not include traffic citations arising from traffic crashes, or in cases in which an officer stops a vehicle that has been linked to a specific crime, such as a vehicle wanted in connection with a robbery.²

Our analysis of traffic stops in Illinois is based on the following data elements:

- Race of driver
- Reason for the stop
- Duration of the stop
- Outcome of the stop

¹ Public Act 098-0686

² If an officer uses a traffic law violation as a pretext to stop a “suspicious” vehicle, that stop should be reported to IDOT.

- Whether a consent search of the vehicle was requested and conducted
- Whether contraband was found during the consent search
- Whether a dog sniff was conducted and the results of that sniff

Agencies must submit traffic stop data for the calendar year to IDOT prior to March 1 of the following year. After a preliminary analysis is conducted the results are posted on a secure site at IDOT so that each agency may review its own results. Agencies have approximately 10 days to identify possible errors in the report or to submit comments that are attached to agency reports.

Agency Participation

In 2016, 947 law enforcement agencies in Illinois submitted traffic stop data to IDOT. This number is up from 2015 when 938 agencies submitted data. The complete list of non-complying agencies appears in Appendix “B”.

Traffic Stops

In 2016, law enforcement agencies in Illinois reported 2,169,796 traffic stops to IDOT. This represents an increase of 7 percent over 2015. Figure 1 illustrates the number of traffic stops for the period of 2013-2016.³

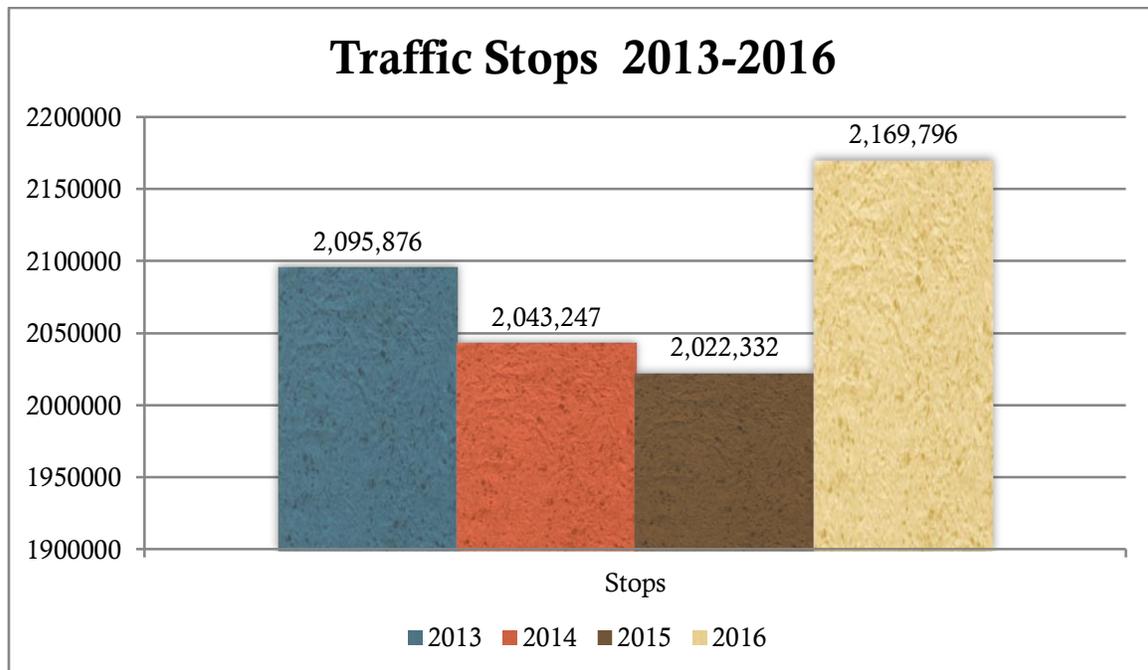


Figure 1 Traffic Stops 2013-2016

³ Among the more significant changes in stops was in Chicago where stops went from 85,965 in 2015 to 187,133 in 2016.

In Figure 2 we illustrate the percentage of stops for minority and white drivers.

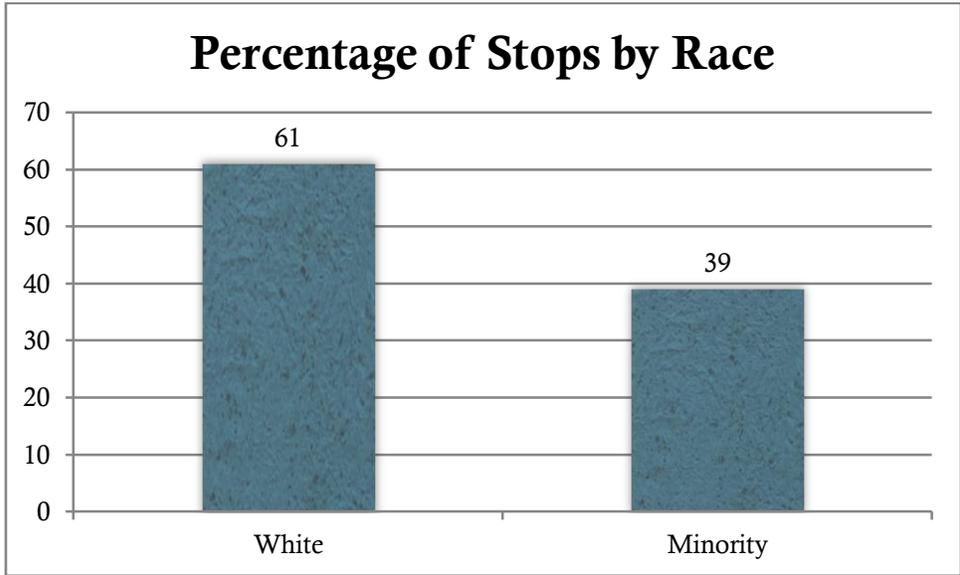


Figure 2 Statewide Traffic Stops by Race 2016

Figure 3 shows traffic stops for each of the six racial categories:

- White (WH)
- African American (AA)
- American Indian (AI)
- Hispanic (HIS)
- Asian (ASN)
- Native Hawaiian or Pacific Islander (NH)

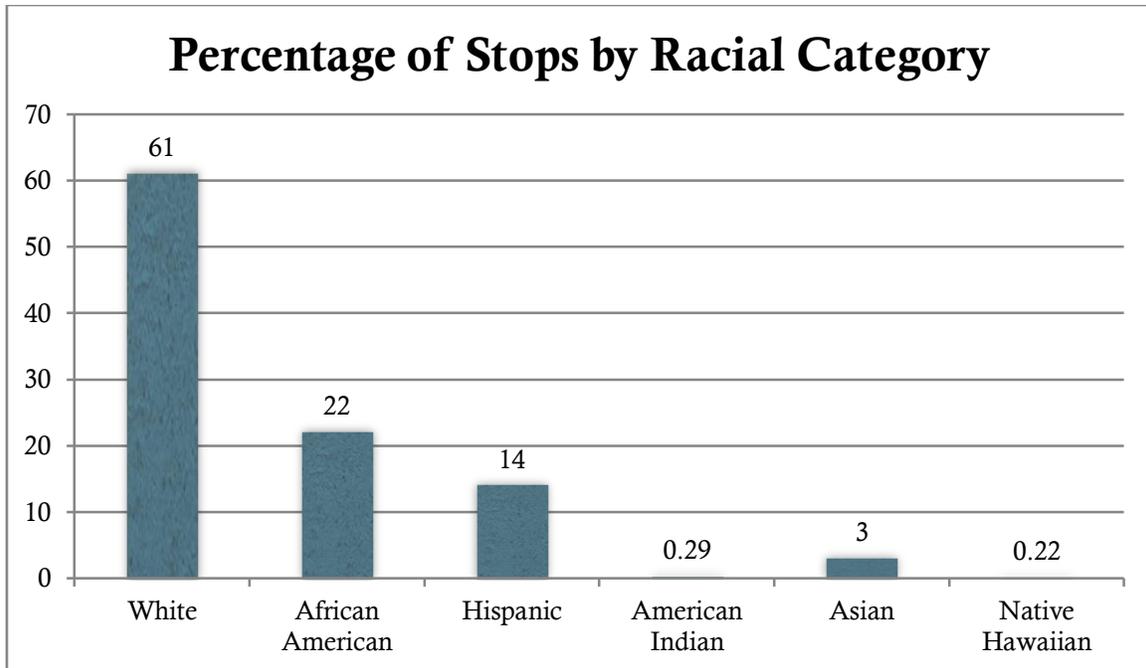


Figure 3 Percentages of Stops by Individual Race

Ratios

Our analysis uses several measures to test the extent to which race plays a part in traffic stops. We have classified these measures as “pre-stop” measures and “post-stop” measures. Pre-stop measures examine behaviors related to the stopping of the vehicle, and post-stop measures illustrate what happens after the vehicle has been stopped and the officer contacts the driver.

The first pre-stop measure is the “ratio.” This measure looks at the likelihood that minority drivers will be stopped by a law enforcement agency. To quantify this likelihood, we calculate the ratio between the percentage of minority stops of an agency and that community’s estimated minority driving population, or as it is often called, the “benchmark.”⁴

To illustrate this idea, consider an agency in which 22 percent of traffic stops involved minority drivers. In this same community the estimated minority driving population was 20 percent. The ratio for this agency would be $22/20$ or 1.1. In other words, in this community, a minority driver is 10 percent more likely to be stopped than we would expect based on the estimated minority driving population.

⁴ For a detailed description of the construction of the estimated driving population, see the 2004 Annual Report available from IDOT.

A ratio of 2, for example, would indicate that a minority driver was twice (100 percent) as likely to be stopped than we would expect.⁵

In 2016, the statewide ratio was 1.38, up slightly from 2015 when the ratio was 1.25. Figure 4 illustrates the distribution of ratios across the reporting agencies. As we can see, 64 percent of the law enforcement agencies had ratios below 1.25, while 16 percent had ratios of 2 or greater.

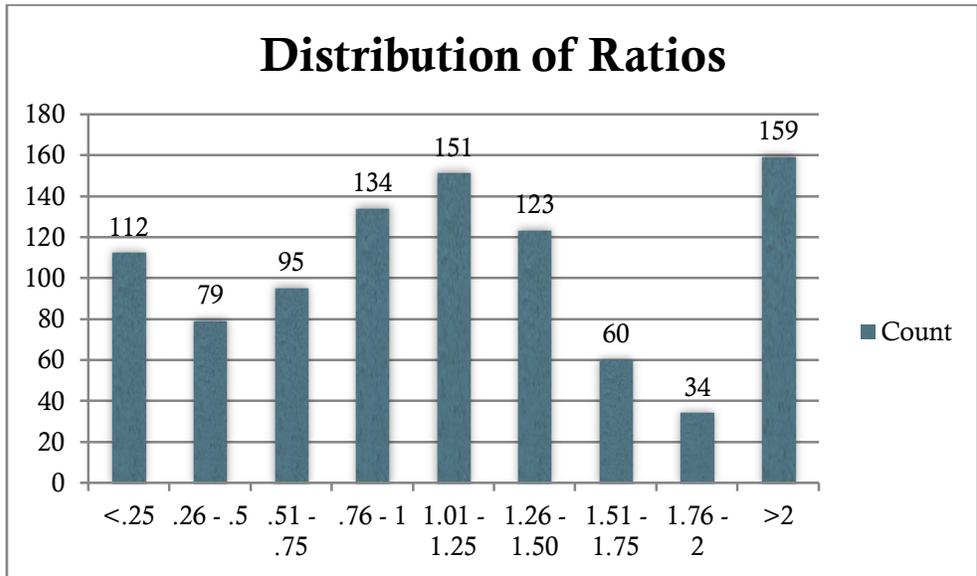


Figure 4 Distributions of Ratios by Agency

Reason for Stop

The second pre-stop measure is the reason for the stop. We are seeking to determine whether race is a determinant factor in the decision to make a traffic stop. To do this we examine the distribution of reasons within race, assuming that if race is not a factor the distribution of reasons within each race will be similar. This is illustrated in Figure 5. In this figure we see the reason for the stop as expressed as a percentage of all the stops for that race.

⁵ A ratio of zero occurs when an agency makes no stops of minority drivers.

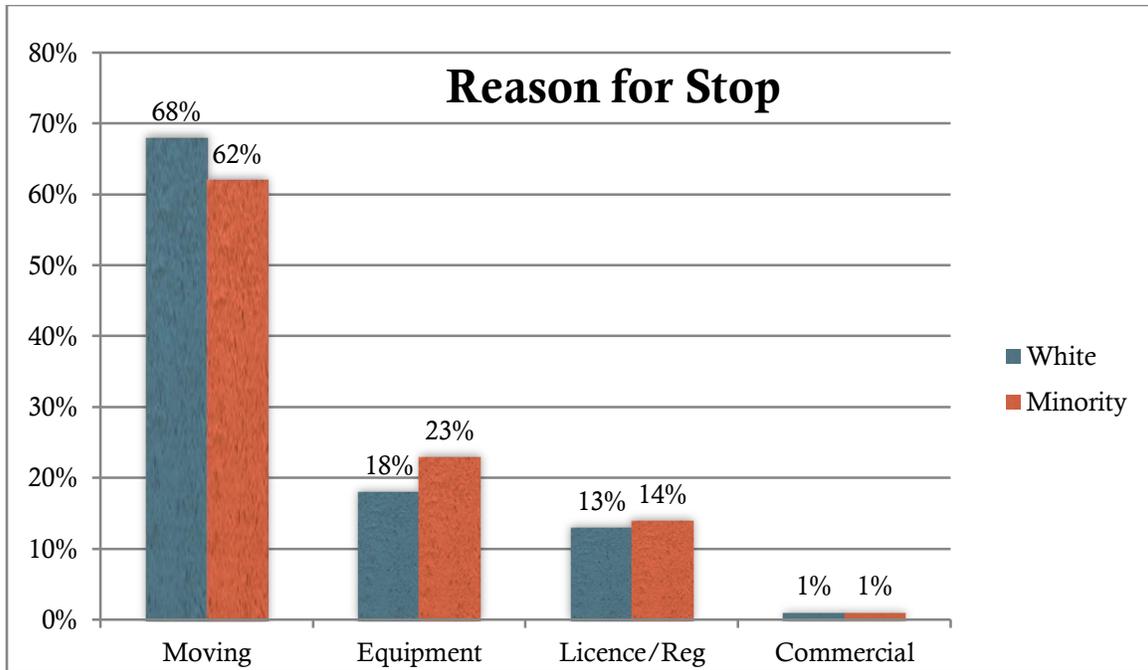


Figure 5 Reasons for Stop by Race

Duration of Stop

Our first post-stop measure is the duration of the stop. Post-stop measures may be more instructive because by this point in the encounter the officer has contacted the driver and drawn a conclusion about the driver's race.

In our analysis we included two measures of average duration, the *mean* and *median*. The mean is calculated by summing the total time for all traffic stops and then dividing by the number of stops. The mean is susceptible to extreme values. That is, an unusually long traffic stop can cause the mean to be larger, and thus it may not be representative of a central or average value. If we take the times for all the stops and place them in order we can derive the median. The median represents the value *in the middle* of the ordered distribution. Another way of explaining this is that half of the values in the distribution are below the median and half are above. In agencies with a large number of stops the mean is less likely to be skewed by extreme values.

In 2016, the mean duration for stops of white drivers was 11 minutes and for minority drivers it was 12 (unchanged from 2015). The median duration for both groups was 10 minutes.

Table 1 illustrates the mean duration times by race for statewide data. It is instructive to note that when compared with 2015, the mean duration for African Americans decreased by one minute and the mean duration for Hispanics was the same as in 2015.

Race	Mean Duration in Minutes
All Drivers	11
White	11
African American	12
American Indian	11
Hispanic	12
Asian	10
Native Hawaiian	10

Table 1 Mean Traffic Stop Duration

Outcome of Stop

The next post-stop measure is the outcome of the stop. We use three categories to define the outcome: citation, written warning and verbal warning/stop card.⁶ Table 2 compares white drivers and minority drivers on the three possible outcomes. It illustrates the percentage of drivers in the racial category to receive that outcome. For example, 40 percent of white drivers were cited and 43 percent of minorities were cited.

	White	Minority
Citation	40%	43%
Written Warning	38%	27%
Verbal Warning/Stop Card	22%	30%

Table 2 Traffic Stop Outcomes by Race

⁶ Not all agencies issue written warnings.

In 2016, there were 891,765 traffic stops in which a citation was issued (a 4 percent reduction from 2015). A citation was issued in 41 percent of all stops (down from 46 percent in 2015).

Figure 6 shows the relationship between race and whether a citation was issued during a stop.

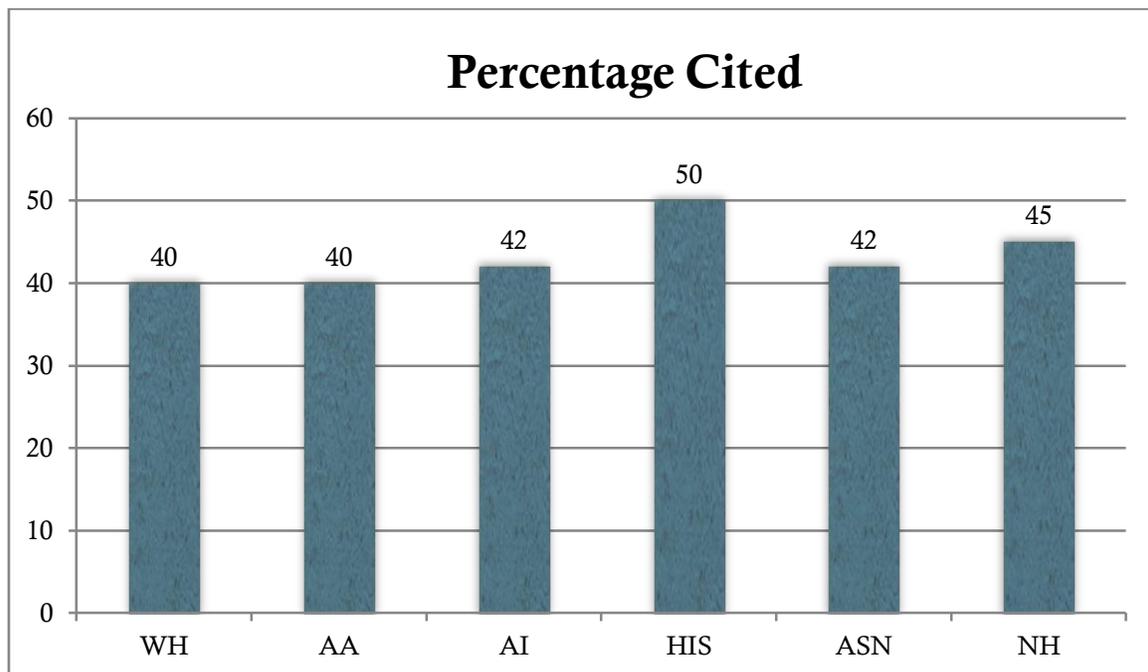


Figure 6 Percentage Cited by Race

Consent Searches

The next post-stop analysis examines vehicle consent searches⁷. Consent searches are an important element in the examination of bias in traffic stops. Police officers have many legal justifications for searching motor vehicles without a warrant. Courts have, in general, given police officers wide latitude in conducting such searches, because when the vehicle is “released” any evidence in the vehicle may be unrecoverable. We are particularly interested in consent searches, those in which the decision to request a search is largely that of the individual officer.

In our analysis we treat the consent search as a four step-process:

1. Was a consent search requested?
2. Was permission to conduct the search granted?
3. Was the search conducted?

⁷ Data is also collected concerning consent searches of drivers and passengers; however, this analysis only examines consent searches of vehicles.

4. Was contraband found during the consent search?

In 2016, police officers performed 20,316 vehicle consent searches (down by 15 percent over 2015). This equates to a consent search occurring in about one percent of all stops.

The following table illustrates consent searches performed by race.

Race	Number of Vehicle Consent Searches
WH	10,582
AA	5,991
AI	41
HIS	3,441
ASN	228
NH	33

Table 3 Vehicle Consent Searches by Race

Most law enforcement agencies perform few, if any vehicle consent searches. In fact, in 2016, only 36 agencies (about 4 percent of the participating agencies) performed 100 or more vehicle consent searches. Table 4 illustrates the agencies that conducted more than 100 vehicle consent searches.

ILLINOIS STATE POLICE	2,221
SPRINGFIELD POLICE	1,002
CHICAGO POLICE	633
AURORA POLICE	606
GRUNDY COUNTY SHERIFF	382
POSEN POLICE	349
MCHENRY COUNTY SHERIFF	347
BELLEVILLE POLICE	292
OAK LAWN POLICE	261
WAUKEGAN POLICE	245
ROCK ISLAND COUNTY SHERIFF	241
HANOVER PARK POLICE	238
ROCKFORD POLICE	210
MCLEAN COUNTY SHERIFF	203
JACKSONVILLE POLICE	195

COOK COUNTY SHERIFF	194
ELGIN POLICE	185
MUNDELEIN POLICE	175
MORRIS POLICE	172
BEDFORD PARK POLICE	166
MCDONOUGH COUNTY SHERIFF	148
COOK COUNTY FOREST PRESERVE POLICE	133
OAKBROOK TERRACE POLICE	131
BLOOMINGTON POLICE	127
EFFINGHAM COUNTY SHERIFF	125
EFFINGHAM POLICE	124
SCHAUMBURG POLICE	123
MARION POLICE	121
CHICAGO HEIGHTS POLICE	120
NAPERVILLE POLICE	119
BOLINGBROOK POLICE	117
FAIRVIEW HEIGHTS POLICE	113
BLUE ISLAND POLICE	112
JOLIET POLICE	112
COLLINSVILLE POLICE	108
LEMONT POLICE	103
MORTON GROVE POLICE	103
BRIGHTON POLICE	101
DANVILLE POLICE	100

Table 4 Agencies that Conducted More Than 100 Vehicle Consent Searches

In Table 5, we examine more closely the consent search data by individual race for 2016. There is important information in these findings. First, we observe how infrequently consent searches are conducted. Second, we observe the decision to permit consent does not vary much by race, whereas in the past there were marked differences. Third, African American and Hispanic drivers are more likely to be the subject of a vehicle consent search than other drivers, relative to how frequently they are stopped.

	White	African American	American Indian	Hispanic	Asian	NH
Stops	1,313,994	468,641	6,350	308,419	67,596	4,796
Requested	12,955	7,083	50	3,876	259	37
Granted (% Of Requested)	10,996 (85%)	6,141 (87%)	45 (90%)	3,529 (91%)	237 (89%)	34 (92%)
Performed (% of Stops)	10,582 (.8%)	5,991 (1.28%)	41 (.65%)	3,441 (1.1%)	205 (.33%)	33 (.69%)

Table 5 Consent Search Process by Race

Next, we examine whether a consent search resulted in a seizure of contraband, defined as drugs, drug paraphernalia, weapons, stolen property, alcohol or “other” contraband. Knowing whether or not contraband is found allows us to calculate the “hit rate,” or the likelihood that a consent search results in the seizure of contraband.

In 2016 when the vehicle of a white driver was consent searched, police officers found contraband **30 percent** of the time. By contrast, when a vehicle driven by a minority driver was consent searched, officers found contraband **24 percent** of the time. A similar outcome has occurred in each year since we started collecting hit rate data but the difference is smaller for 2016.

In Figure 7, we illustrate the relationship between driver race for the three largest categories and whether contraband was found. For example, white drivers were involved in 52 percent of all stops in which a consent search was performed, but 58 percent of the time contraband was found during a stop it was in a vehicle driven by a white driver. By contrast, Hispanic drivers were involved in 17 percent of consent searches but in 16 percent of the cases in which contraband was found.

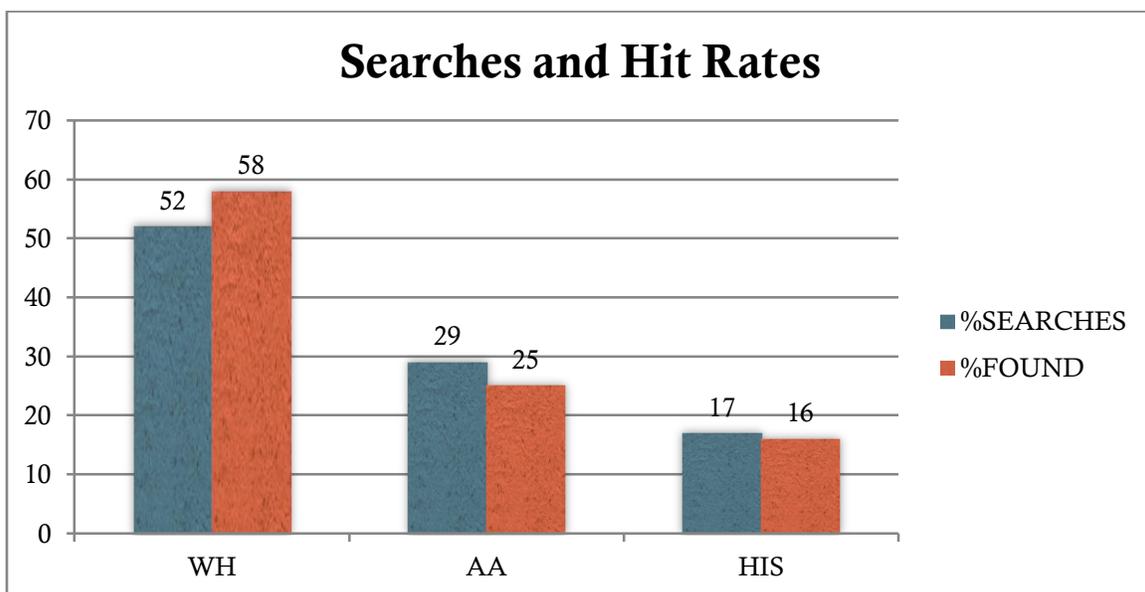


Figure 7 Search and Hit Rates

Dog Sniffs

In 2016, agencies reported 8,001 dog sniffs. Dog sniffs were conducted in .36 percent of stops with white drivers, and .38 percent of stops in which the driver was a minority. Three hundred and fifty-eight agencies reported having conducted at least one dog sniff. Table 6 lists agencies that conducted 100 or more dog sniffs.

AGENCY NAME	DOG SNIFFS
ILLINOIS STATE POLICE	1,774
BUREAU COUNTY SHERIFF	443
AURORA POLICE	262
MCLEAN COUNTY SHERIFF	173
DECATUR POLICE	162
GALESBURG POLICE	156
BLOOMINGTON POLICE	153
DANVILLE POLICE	143
BELVIDERE POLICE	123
PEORIA COUNTY SHERIFF	122
PERU POLICE	117
ELGIN POLICE	105
NORMAL POLICE	102
EAST PEORIA POLICE	101

Table 6 Agencies with More Than 100 Dog Sniffs

In addition to the number of sniffs conducted, data is also gathered to identify how often the dog alerts, how often a subsequent search of the vehicle is conducted and whether or not contraband is found. The results are shown in Table 7. It is interesting to observe that the results of searches based on dog sniffs are more productive (that is the hit rate is higher) than those of consent searches, and that like those of consent searches dog sniffs of vehicles driven by white drivers yield a higher proportion of contraband.

	White	Minority
Total Dog Sniff Searches	4,755	3,246
Dog Alerts (% of Searches)	3,317 (69.76%)	2,311 (71.2%)
Search Performed (% Alerts)	3,215 (96.92 %)	2,241 (96.97%)
Contraband Found (% Performed)	2,070 (64.39%)	1,322 (58.99%)

Table 7 Results of Dog Sniff Searches

Appendix A: Interpreting Agency Reports

In this section, we illustrate how to interpret an agency report. There are two components to each report. The first provides a comparison by race on several measures. The second part provides the “raw” data that is used to conduct the analysis. We begin with the analysis section. The first part of the report provides summary information on the number of stops of white and minority drivers, the estimated minority driving population for that community, and the ratio.

The next part of the report provides information about the reason for the stop. The percentages provided describe the distribution *within each race*. For example, we observe that there were 202,840 stops of minority drivers for equipment violations. This represented about 23 percent of all the minority stops.

In the third section, we describe the outcome of the stop. You will observe that not all agencies issue written warnings, and thus each stop will be classified as either a citation or a verbal warning/stop card.

Next, we can see information about consent searches. Although we include consent search data for all agencies, readers should take great care in drawing conclusions when an agency has fewer than 50 consent searches per year.

Finally, we can observe data about the use of drug detection dogs.

ILLINOIS TRAFFIC STOP STUDY, 2016	
Agency:	ILLINOIS STATE WIDE

Stops		
	White Drivers	Minority Drivers
Total Stops	1313994	855802
Percentage Stops	60.56	39.44
Duration (Mean\Median)	11\10	12\10
Estimated Minority Driving Population		28.48
Ratio		1.38

Reason for Stop				
	White Drivers		Minority Drivers	
Total Stops	1313994		855802	
Moving Violations	897126	68.27%	532833	62.26%
Equipment Violations	234484	17.85%	202840	23.70%
Licensing / Registration Violations	176810	13.46%	116281	13.59%
Commercial Vehicle Violations	5574	0.42%	3848	0.45%

Outcome of Stop				
	White Drivers		Minority Drivers	
Total Stops	1313994		855802	
Citation	524354	39.91%	367411	42.93%
Written Warning	493680	37.57%	228185	26.66%
Verbal Warning/ Stop Card	295960	22.52%	260206	30.40%

Vehicle Consent Searches				
	White Drivers		Minority Drivers	
Total Stops	1313994		855802	
Requested	12955	0.99%	11305	1.32%
Granted	10996	84.88%	9986	88.33%
Performed	10582	96.23%	9734	97.48%
Found	3213	30.36%	2333	23.97%

Dog Sniff Searches				
	White Drivers		Minority Drivers	
Total Stops	1313994		855802	
Vehicle Dog Sniff Searches	4755	0.36%	3246	0.38%
Dog Alerts	3317	69.76%	2311	71.20%
Search Performed	3215	96.92%	2241	96.97%
Contraband Found	2070	64.39%	1322	58.99%

Key Indicators	Total	WH	AA	AI	HIS	ASN	NH	N/S
Stops	2169796	1313994	468641	6350	308419	67596	4796	0
Duration(Mean/Median)	11\10	11\10	12\10	11\10	12\10	10\10	10\10	0\0
Reason For Stop	Moving	1429959	897126	280382	4461	196144	48489	3357
	Equipment	437324	234484	117164	1181	72450	11148	897
	License	293091	176810	70033	701	37130	7896	521
	Commercial Vehicle	9422	5574	1062	7	2695	63	21
	N/S	0	0	0	0	0	0	0
Outcome of Stop	Citation	891765	524354	188736	2681	145434	28389	2171
	Written Warning	721865	493680	119399	1883	82824	22844	1235
	Verbal Warning/SC	556166	295960	160506	1786	80161	16363	1390
	NS	0	0	0	0	0	0	0
Vehicle Consent Searches	Requested	24260	12955	7083	50	3876	259	37
	Granted	20982	10996	6141	45	3529	237	34
	Performed	20316	10582	5991	41	3441	228	33
	Found	5546	3213	1393	9	865	61	5
Dog Sniff Searches	Sniffs	8001	4755	2188	22	938	90	8
	Alerts	5628	3317	1634	14	601	57	5
	Alert Search	5456	3215	1582	14	585	55	5
	Found	3392	2070	953	7	330	29	3

Appendix B: Non-complying Agencies

APPLE RIVER POLICE
ASHKUM POLICE
BRADFORD POLICE
BRIDGEPORT POLICE
BUFFALO-MECHANICSBURG POLICE
CERRO GORDO POLICE
DONGOLA POLICE
EWING POLICE
FARINA POLICE
FITHIAN POLICE
FREEMAN SPUR POLICE
GREAT LAKES NAVAL STATION
GREENVIEW POLICE
HILLCREST POLICE
HINCKLEY POLICE
HINDSBORO POLICE
HURST POLICE
HUTSONVILLE POLICE
IRVING POLICE
KILBOURNE POLICE
LOSTANT POLICE
LUDLOW POLICE
MEREDOSIA POLICE
NEPONSET POLICE
NEW BOSTON POLICE
ODIN POLICE
PRAIRIE DU ROCHER POLICE
RIDGWAY POLICE
SAN JOSE POLICE
SIDELL POLICE
SPAULDING POLICE
ST. FRANCISVILLE POLICE
ST. JOHNS POLICE
SUMMERFIELD POLICE
TAYLOR SPRINGS POLICE
TILDEN POLICE
TISKIL WA POLICE
TREMONT POLICE
US VA POLICE HINES HOSPITAL
VILLA GROVE POLICE
WAMAC POLICE
WATERMAN POLICE

WAYNE CITY POLICE
WESTFIELD POLICE