



Urbana Police Department Memorandum

TO: Mayor and Council

FROM: Interim Chief Bryant Seraphin

RE: Traffic Stop Study Report – Introduction

DATE: April 18, 2019

Attached to this memorandum is the next in a series of Urbana Traffic Stop Study Reports. The report, authored by Urbana Police Department Crime Analyst Melissa Haynes, is 28-pages long and dissects a variety of issues. Please refer to her report for in-depth analysis. Allow this memo to provide a very brief overview of the ratio calculation and the ratios by race of the stopped drivers.

Ratios are used to discuss traffic stops in the context of this study. The ratio is calculated by dividing the percentage of stops of a particular group by the estimated percentage of a particular group's makeup of the driving population. The percentage of stops is an easily identified number as it comes directly from the data gathered by the police department. The makeup of the driving population is a bit more difficult to ascertain. Urbana has elected to determine this benchmark by using the percentage of drivers involved in traffic crashes as counted by race. Then, the last three years of those percentages are averaged to determine the benchmark percentage that is used to calculate the ratio for a particular year.

The current ratio numbers for 2018 are in a table on page 9. Trends over time with regards to disparity ratios can be found on page 11. Readers are encouraged to review the attached report, as well as view the council presentation, to gain a fuller understanding of this topic.



2018 IDOT Annual Report

This is the annual traffic stop report prepared for Urbana City Council analyzing the traffic stop data collected by the Urbana Police Department and reported to the Illinois Department of Transportation.

This report contains information from ten years of traffic stops conducted by the Urbana Police Department January 1, 2009 to December 31, 2018. It provides a closer look at the following categories:

- All traffic stops
- Benchmarks
- Officers' decisions to stop
- Outcomes of traffic stops

The preceding five years of data will serve as a baseline and compared to the most recent data, by year, to monitor substantial changes over time. Ten years of data is included in this report for a historical picture of UPD traffic stops.

Please note that some level of human error is possible at every point in the data – from individuals providing data to the officers, to officers reporting data, to representatives entering data, and to the crime analyst querying and analyzing the data. Every effort has been made to ensure the accuracy of the data.

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Introduction

Beginning in January 2004, Illinois police agencies have been required to collect and submit information about traffic stops to the Illinois Department of Transportation (IDOT) on a yearly basis.¹ The IDOT definition for a traffic stop is, “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

The information submitted includes the reasons for stops, outcomes of stops, lengths of time of stops, the race of the driver, as well as information on vehicle consent searches and dog sniffs. IDOT compiles this information in an annual report and presents the information for the entire state as well as by agency.

Urbana city council members and citizen groups have been interested in further analysis beyond what is presented in the yearly IDOT report, and UPD traffic stop data has been examined by multiple entities, including a committee established by City Council, the Urbana Traffic Stop Data Task Force committee.³ The main focus of these analyses has been on *racial disparities*. Racial disparities can be examined at two decision points using the traffic stop data: pre-stop and post-stop. The “decision to stop” analysis relies on a benchmark of the driving population of the jurisdiction. The IDOT study utilizes US Census data to establish an adjusted baseline (benchmark), which is simply the racial makeup of the population of individuals aged 14 and over residing in Urbana as counted in the Census. There is questionable reliability for utilizing an adjusted census figure as the baseline, as over half of the individuals stopped in Urbana do not reside in Urbana. Therefore, after extensive discussions in 2016 and 2017, the benchmark for this report utilizes the racial breakdown of drivers involved in traffic accidents for the previous three years.

Decisions made after the stop include the issuance of a warning or citation, asking to perform a consent search, and performing a canine sniff. A benchmark is not required to analyze this data. The following report presents data from all traffic stops conducted by UPD from January 1, 2009 to December 31, 2018. Particular attention is paid to racial disparities in pre-stop and post-stop decision-making.

¹Public Act 096-0658

²Alexander Weiss Consulting. 2016. *Illinois Traffic Stop Study: 2015 Annual Report*. Springfield, IL: Illinois Department of Transportation.

³The final report from the Traffic Stop Data Task Force can be found [here](#) and the statistical tables [here](#).

Section 1. Measuring Traffic Stops

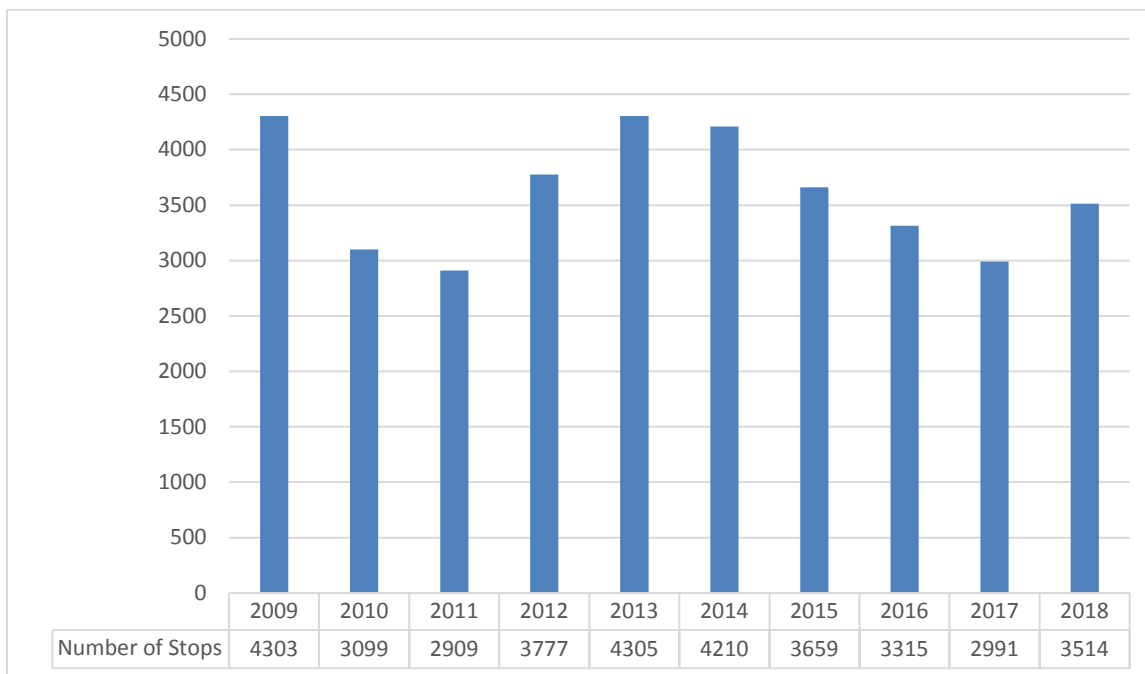
Before beginning a detailed analysis of the traffic stop data, it is important to consider traffic stops as a whole. When a police officer makes the decision to initiate a traffic stop, from that moment on, data is collected that is required by IDOT (i.e., reason for stop, type of moving violation, result of stop, information on searches requested or performed, and the outcome of searches). The Urbana Police Department also collects information for the citation or warning, including information on the driver of the vehicle, information about the vehicle, the location of the violation, and the type of violation. This information is collected on a traffic citation or warning sheet, then entered by Police Services Representatives (PSRs) into the Area-Wide Records Management System (ARMS) program.

This information can be queried and extracted utilizing the IBM program DB2 by the stop, by the violation, or by the person. Unless otherwise noted, the unit of analysis is the traffic stop.

Section 1.1. All Traffic Stops

In the last ten years, UPD has conducted a total of 37,194 traffic stops. The yearly totals have been between 2911 and 4306 vehicles per year, which averages to about 8 to 12 stops per day. Figure 1 presents the yearly number of traffic stops conducted.

Figure 1. Traffic Stops by Year, 2009 -2018



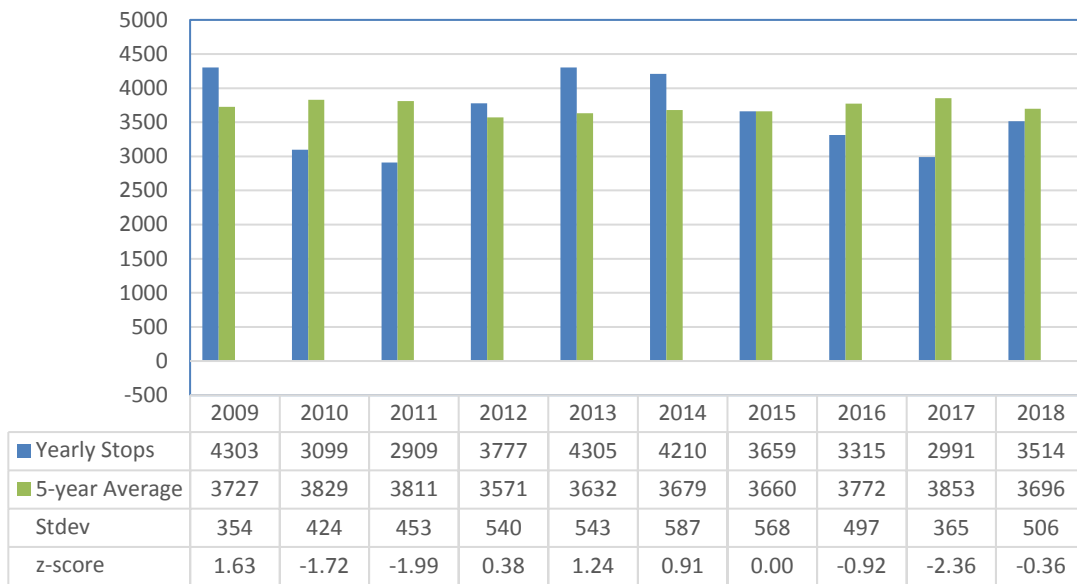
While this is informative, no meaningful trends are apparent. To better understand an individual year's traffic stop numbers compared to previous years, Figure 2 compares single years to a

rolling five-year average. The rolling five-year average includes the previous five years (for example, in 2009, the five-year average is 2004-2008, and in 2018, the five-year average is 2013-2017). To examine this data further, *standard deviations* and *z-scores* were considered to measure dispersion. Because there will be variance in the number of stops in any given year, this analysis allows us to consider whether this variance is within or outside of a normal range.

The standard deviation statistic was determined using the variance from the mean. The z-score is the number of standard deviations of each year’s traffic stops from the rolling five-year average of traffic stops.⁴ The most meaningful z-scores in the below table are those that are greater than one, or less than negative one, which indicates that in those years, UPD conducted more or fewer traffic stops than would be expected based on the rolling five-year average.

As shown in Figure 2, in 2009 and 2013, UPD officers conducted more traffic stops than would be expected, and in 2010, 2011, and 2017, fewer were conducted. In 2012, 2014, 2015, 2016, and 2018, the number of traffic stops conducted was within the normal range.

Figure 2. Traffic Stops by Year and 5-Year Average, 2009 – 2018



⁴In a *normal curve*, about 68% of the values will fall within one standard deviation of the mean. About 26% of values will fall within two standard deviations of the mean, and about 4% within three standard deviations of the mean.

Section 1.2. Demographics of Drivers

The race of the driver is collected in all traffic stops. The percentage by drivers' races of the total number of traffic stops for each year is presented in Table 1. While there is some variation across years, African American and Caucasian drivers account for approximately 85% of all traffic stops.

Table 1. Race of Drivers in Traffic Stops, 2009 - 2018

	African American	American Indian	Asian	Hispanic	Caucasian	Unknown	Total Stops
2009	34.16%	0.05%	9.13%	4.39%	52.27%	0.00%	4303
2010	38.17%	0.06%	9.45%	4.49%	47.82%	0.00%	3099
2011	34.62%	0.03%	8.80%	4.64%	51.91%	0.00%	2909
2012	29.68%	0.13%	8.92%	3.55%	57.72%	0.00%	3777
2013	29.71%	0.19%	11.45%	3.69%	54.94%	0.02%	4305
2014	28.03%	0.29%	10.52%	4.89%	56.27%	0.00%	4210
2015	29.54%	0.14%	10.63%	4.59%	55.10%	0.00%	3659
2016	28.33%	0.27%	10.86%	4.86%	55.69%	0.00%	3315
2017	29.42%	0.20%	9.76%	4.55%	56.07%	0.00%	2991
2018	30.02%	0.26%	8.96%	5.41%	55.35%	0.00%	3514

Section 2. Benchmarks

There has been considerable discussion surrounding the issue of *benchmarks*. To attempt to determine if minority drivers are overrepresented in traffic stops, it is necessary to compare the racial makeup of stopped drivers to the racial makeup of drivers on the roads in Urbana Police Department’s jurisdiction. There has been considerable discussion in the literature regarding the limitations of varying techniques of statistical analysis and benchmark methodologies, which can include utilizing Census data, accident data, and observation data. Additionally, the assumption with nearly any baseline calculation is that police law enforcement activities are equally distributed across all roadways in a jurisdiction, which is not the case, as police requests for service and police patrols are geographically concentrated.

The IDOT traffic study utilizes the population figures from the decennial Census to create an adjusted figure for the driving population by including all individuals age 14 and older, as a proxy measure for the driving population in a jurisdiction.⁵ Table 3 presents the population numbers used for the IDOT traffic study from the 2010 Census. This methodology facilitates comparative analysis among jurisdictions throughout Illinois (e.g., Champaign, Decatur, Springfield, Rantoul, etc.).

Table 3. IDOT Figures Estimating the Urbana Driving Population

	Population	Percent
American Indian/Alaskan Native	55	0.15%
Asian	6925	19.22%
Native Hawaiian/OPI⁶	57	0.16%
African American	5344	14.83%
Hispanic	1853	5.14%
Caucasian	21799	60.50%
Total Population	36033	100.00%

However, not everyone 14 and older has access to a vehicle. Furthermore, approximately half of drivers stopped by the Urbana Police Department do not live in Urbana. This raises questions about the validity of using the Census figures as proxy measure of the population of drivers on Urbana roadways. Urbana has a large student population that may not be counted by the Census.

⁵ Weiss, A. (2005). *Illinois Traffic Stop Statistics Act: Report for the Year 2014*. Springfield, IL: Illinois Department of Transportation.

⁶ UPD does not capture this category.

There are a number of regional employers in Urbana, including Carle Hospital, the University of Illinois, and the County of Champaign. Furthermore, there are sporting events at the U of I that draw thousands of drivers through Urbana.

The Urbana Police Department utilizes an adjusted benchmark using drivers involved in traffic accidents. For each accident that is reported (either through a 911 call, a non-emergency line call, in person at the police department, or if an officer witnesses an accident) that occurs within UPD jurisdiction, an accident report is created by an officer. The officers collect a great deal of information on the accident report, including race of the drivers. For hit-and-run accidents, the race is entered as unknown, unless witnesses are able to provide the race of the driver. All individuals involved in the accident are entered into ARMS, and this includes their relationship with the vehicle (e.g., driver, passenger, etc.). In a traffic accident, the possible roles for drivers are *arrestee*⁷ (ticketed drivers), and *other* (drivers of vehicles involved in crashes who are not ticketed). It should be noted that this process of tracking changed significantly in 2013. Information entered in ARMS prior to 2013 is incomplete, and therefore cannot be used for comparison.

Due to relatively low numbers of traffic accidents, a rolling three-year average is considered for driver demographics. A thorough data audit was conducted this year, cross-checking METCAD calls for service with police reports, and the benchmarks for previous years were adjusted slightly. This allowed for the inclusion of drivers in hit and run accidents that were issued an NTA at a later date.

The racial breakdown of drivers for both ticketed and non-ticketed drivers is included in Table 4. Because the decision to write a ticket involves a certain amount of officer discretion, all drivers in traffic accidents are considered for calculating the benchmark.

Traffic accident information is not a perfect indicator of drivers on all Urbana streets. Some people, in their commute to work, home, or leisure activities, may be more likely to travel on accident-prone roadways. There is no discretion on the part of officers on which accidents get reported; however, accidents are likely concentrated by location, so still should be interpreted with caution. While this is a fair representation of all drivers involved in accidents, it is not without error. However, it is a suitable proxy measure for the driving population and seemingly more accurate compared to the Census population.

⁷ This does not indicate that the driver was placed under custodial arrest. The terminology is used to denote the recipient of a traffic citation, NTAs, and individuals who are placed under arrest.

Table 4. Drivers Involved in Reported Traffic Accidents, 2013 - 2018

	2013 - 2015	2014 - 2016	2015 - 2017	2016 - 2018
Asian	9.96%	9.91%	9.07%	8.37%
African American	18.07%	18.56%	20.36%	22.26%
Hispanic	3.52%	4.04%	4.40%	4.84%
American Indian	0.18%	0.24%	0.24%	0.24%
Unknown	1.01%	1.68%	2.20%	1.99%
Caucasian	67.26%	65.54%	63.70%	62.23%
Total Drivers Involved in Accidents	3974	3866	3828	3682

Section 2.1 Disparity Ratios

These figures are then used as the denominator to create the disparity ratio, as shown in Table 5. Ratios larger than one indicate that a given racial group is stopped at higher rate than would be expected based on the estimated population of drivers.

Table 5 presents the range of the 2018 disparity ratios using the accidents from 2015 – 2018

Table 5. Traffic Stop Disparity Using Traffic Accidents, 2018

	Disparity Ratio
Asian	1.07
African American	1.35
Hispanic	1.12
Caucasian	0.89

Example Calculation:

$$\frac{\text{Hispanic Drivers 5.41\% of Stops}}{\text{Hispanic Drivers 4.84\% of Driving Population}} = 1.12 \text{ Disparity Ratio}$$

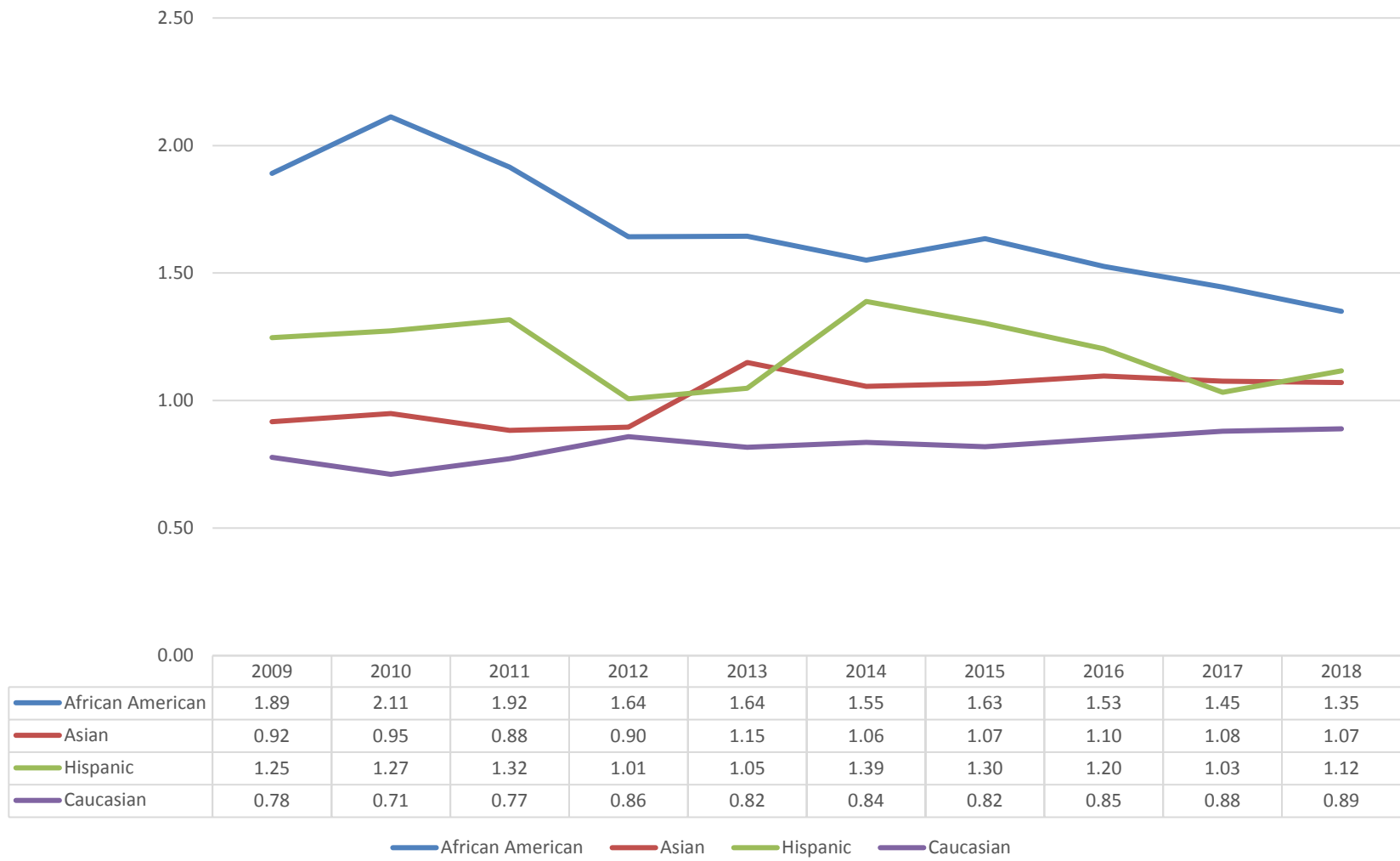
Figure 4 uses the average of all drivers involved in traffic accidents from 2013-2015 for the benchmark for 2008 – 2015⁸ stops, the average from 2014 – 2016 accidents for 2016 stops, the average from 2015 – 2017 accidents as a benchmark for 2017 stops, and the average from 2016 – 2018 accidents as a benchmark for 2018 stops.

As shown below, the disparity ratio for Asian drivers has increased over time. The disparity ratio for African American drivers has decreased from a high of 2 to about 1.5; the African American

⁸ This assumes that the driving population did not change significantly from 2004 – 2012, which may or may not be the case, but due to data limitations, this is the best estimate.

disparity ratio is consistently higher than other races. The Caucasian disparity ratio is usually slightly above or below 0.80. The American Indian ratio is not reported as the percentage of stops is less than 0.5% of all drivers, and the Hispanic ratio fluctuates considerably due to the low number of stops of Hispanic drivers (with a range of 135 – 209 per year). This should be interpreted with caution, as a small increase in the number of stops would cause a large change in the ratio.

Figure 4. Traffic Stop Disparity Ratios by Year



Section 3. Decision to Stop

There are two different points to examine potential disparities in traffic stops. The first is at the decision to stop a vehicle, and the second is at the decision(s) made after the vehicle is stopped (e.g., warning vs. citation, requesting consent to search, etc.). Section 3 focuses on the decision to stop, and Sections 4, 5, and 6 on the outcomes of the stop.

Section 3.1. Motivation for Stops

The motivations for stop categories are as follows:

Traffic Problem – With the motivation of reducing the number and severity of motor vehicle crashes, an officer conducts a static patrol in an area with a disproportionate number of crashes.

Targeted Patrol – With the motivation of investigating a specific incident, an officer conducts a targeted stop.

Community Caretaking – With the motivation of educating a driver, an officer stops a vehicle.

A pretextual stop can be defined as a stop conducted for a lawful reason (observed violation) for the purpose of investigating further suspected criminal activity. In a clear-cut traffic stop, such as the below example, targeted patrol was marked.

ON 05/07/2016 AT APPROXIMATELY 2203 HOURS, I WAS PATROLLING THE AREA OF LIERMAN AND WASHINGTON, WHEN I OBSERVED TWO MALES STANDING IN FRONT OF EACH OTHER INSIDE THE PHILLIP 66 GAS STATION, 1511 E WASHINGTON. I NOTICED ONE OF THE MALES HAD MONEY IN HIS HAND AND WAS ABOUT TO GIVE IT TO THE OTHER MALE UNTIL HE SAW MY SQUAD CAR. THE MALE WITH THE MONEY IMMEDIATELY TURNED AROUND AND WENT INSIDE OF THE STORE. THE OTHER MALE QUICKLY GOT INTO A BLACK FORD FUSION, AND BEGAN DRIVING OUT OF THE PARKING LOT. IT SHOULD BE NOTED, THE PHILLIP 66 IS A HIGH DRUG ACTIVITY AREA TO THE UPD. I ALSO BELIEVED I POSSIBLY INTERRUPTED A HAND TO HAND DRUG TRANSACTION.

AS THE VEHICLE EXITED THE PHILLIP 66 PARKING LOT, THE DRIVER STOPPED AT THE STOP SIGN AT LIERMAN AND WASHINGTON. I NOTICED THE DRIVER FAILED TO USE HIS TURNING SIGNAL BEFORE TURNING WEST BOUND ONTO WASHINGTON. I THEN ACTIVATED MY OVERHEAD EMERGENCY LIGHTS TO ADDRESS THESE ISSUES AND THE DRIVER PULLED INTO THE ENTRANCE OF THE COVE APARTMENT, 1507 E WASHINGTON.

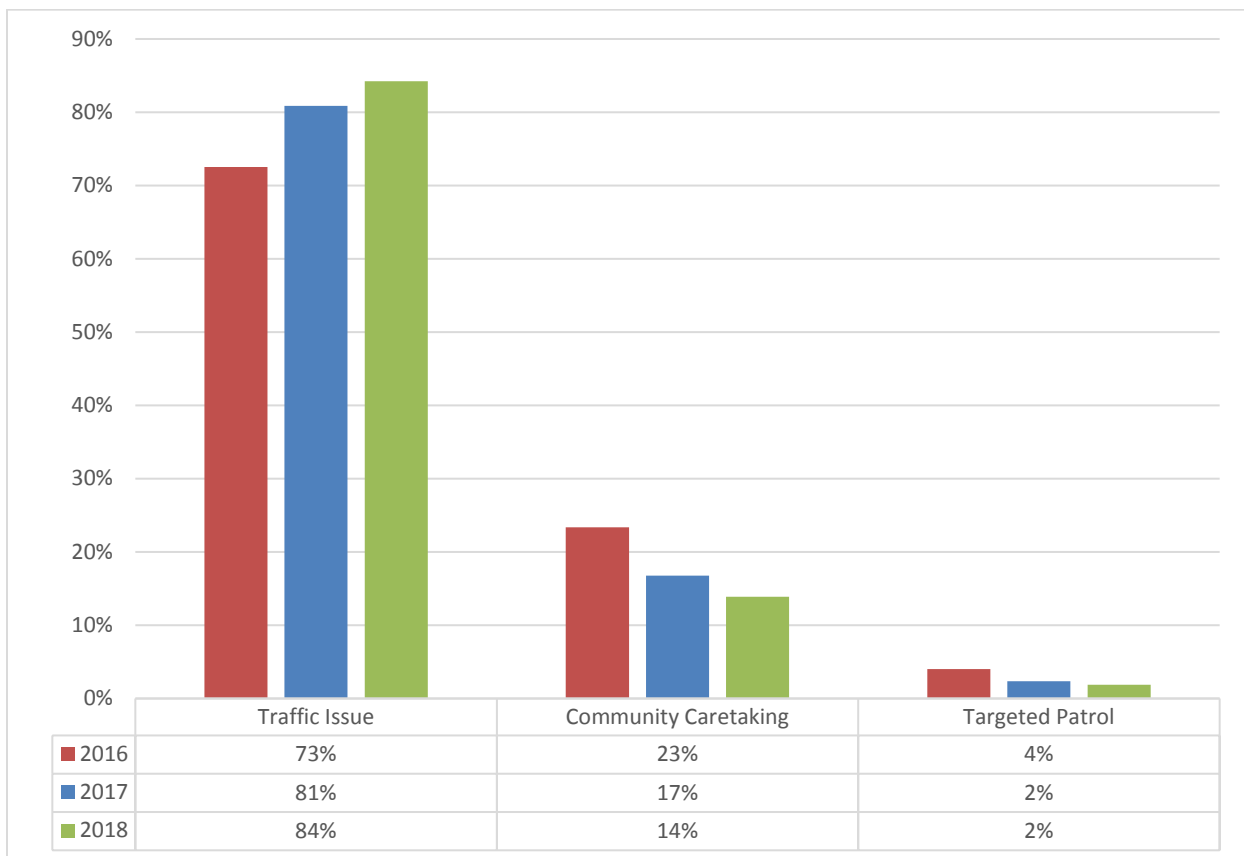
The above is an example of a purely pretextual stop, which would be objectively defined as a targeted patrol. However, not all pretextual stops are so clear, so it's possible that pretextual

stops may be marked as community caretaking or traffic issues and not targeted patrol. In either case, if the officer questioned the driver beyond the scope of the traffic stop, regardless of the motivation, UPD officers now indicate this on the ticket. As of January 1, 2018, tickets that indicate questioning beyond the scope of the traffic stop now denote this in the electronic record. This data will be presented at the City Council meeting on April 22, 2019.

The unit of analysis for the following information is the *stop* to capture the motivation of each time an officer makes the decision to initiate a traffic stop.

UPD officers began consistently tracking the motivation for stops in January 2016. As shown in Figure 5, over 73-84% of traffic stops have been motivated by traffic issue (increasing in percentage each year), followed by community caretaking motivations. In 2016, 4.04% (134) of traffic stops were motivated by targeted patrol, in 2017, 2.37% (71), and in 2018, 1.88% (66) were motivated by targeted patrol.

Figure 5. Motivation for Traffic Stop by Year



Tables 6 and 7 provide the race details of the driver by the motivation for each stop. While all stops are motivated by traffic issues 68 – 82% of the time, Hispanic and Caucasian drivers have the highest percentage of stops with this motivation. Community caretaking is the motivation in 15 – 29% of stops; this is highest for Asian drivers. The percentages of each race stopped for targeted patrol is between 1.5-5%; a higher percentage of stops of African American drivers are motivated by targeted patrol (48 stops with African American drivers in 2016, and 29 stops in 2017, and 34 stops in 2018).

Tables 6 & 7. Race of Drivers by Motivation for Stops, 2016 - 2018

2016				
	Community Caretaking	Targeted Patrol	Traffic Issue	Total
Asian	29.44%	2.22%	68.33%	360
African American	25.08%	5.10%	69.61%	941
Hispanic	18.01%	4.35%	77.64%	161
Caucasian	21.67%	3.79%	74.54%	1846

2017				
	Community Caretaking	Targeted Patrol	Traffic Issue	Total
Asian	20.89%	1.71%	77.40%	292
African American	18.34%	3.30%	78.36%	878
Hispanic	17.52%	1.46%	81.02%	137
Caucasian	15.15%	2.09%	82.71%	1677

2018				
	Community Caretaking	Targeted Patrol	Traffic Issue	Total
Asian	13.97%	0.32%	85.71%	315
African American	15.26%	3.22%	81.52%	1055
Hispanic	11.58%	2.63%	85.79%	190
Caucasian	13.37%	1.34%	85.30%	1945

Section 3.2. Reason for Stops

For each traffic citation or warning, an officer must indicate not only his or her motivation for initiating the stop, but also the reason for the stop. These reasons include moving violations, equipment violations, license/registration violations, and commercial violations. Table 8 illustrates the percentages of traffic stops by reason. Moving violations consistently represent over 60% of all stops, and for the last three years, comprise over 71% of all stops. Drivers are stopped for equipment violations in 18 – 26% of stops, and for license/registration violations in 6 – 10% of stops, with lower percentages in recent years. Commercial violations represent a very small percentage of all stops, with none since 2011, and are excluded from analysis.

Table 8. Traffic Stops by Reason, 2009 - 2018

	Moving Violation	Equipment Violation	License/Reg Violation	Total Stops
2009	64.21%	26.26%	9.04%	4303
2010	65.09%	25.04%	9.42%	3099
2011	70.30%	19.87%	9.49%	2909
2012	73.44%	19.46%	7.10%	3777
2013	67.76%	21.86%	10.38%	4305
2014	68.55%	21.50%	9.95%	4210
2015	71.41%	19.16%	9.43%	3659
2016	73.63%	18.16%	8.21%	3315
2017	71.15%	20.93%	7.92%	2991
2018	68.13%	23.39%	8.48%	3514

Notably, equipment violations increased in 2018. A new pilot program began in July of 2018 in which Urbana police officers distribute fix-it vouchers for low-level equipment violations. These vouchers can be redeemed at Advance Auto Parts for up to \$25 toward the repair of a headlight bulb, taillight bulb, or registration light bulb. A quarterly breakdown of equipment violations is presented in Figure 6, demonstrating a large increase in stops initiated for equipment violations in the second half of the year.

Figure 6. Stops for the Reason of Equipment Violation by Quarter, 2018

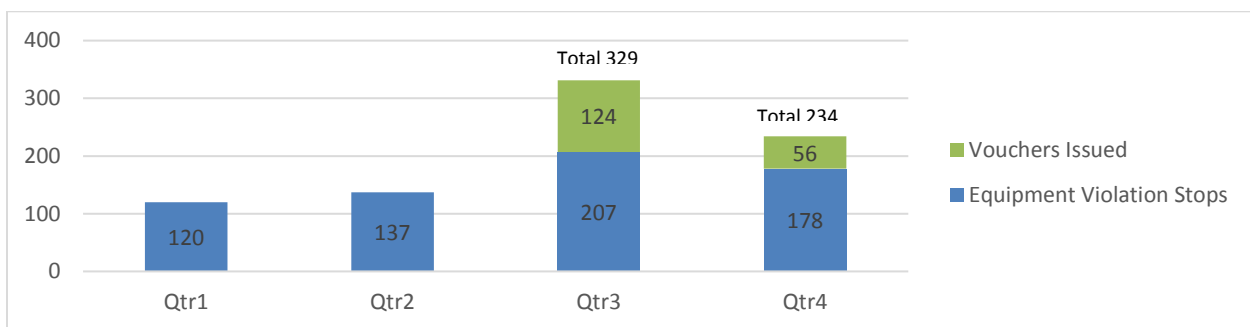


Table 9 presents the racial breakdown of reasons for traffic stops for moving violations, equipment violations, and license/registration violations, disaggregated by year.

Some of these percentages are disproportionately higher than would be expected, particularly the rate at which African Americans are stopped for Equipment Violations, with a notable increase in 2018. This is likely due (in small part) to the Fix-It Voucher program, and (in larger part) to reallocation of STEP patrol locations (see Section 3.3).

License/registration violations have more variation across all minority races, and a higher percentage of stops for African American drivers are license/registration violations when compared to other races. This represents 93 out of 1055 stops for African American drivers.

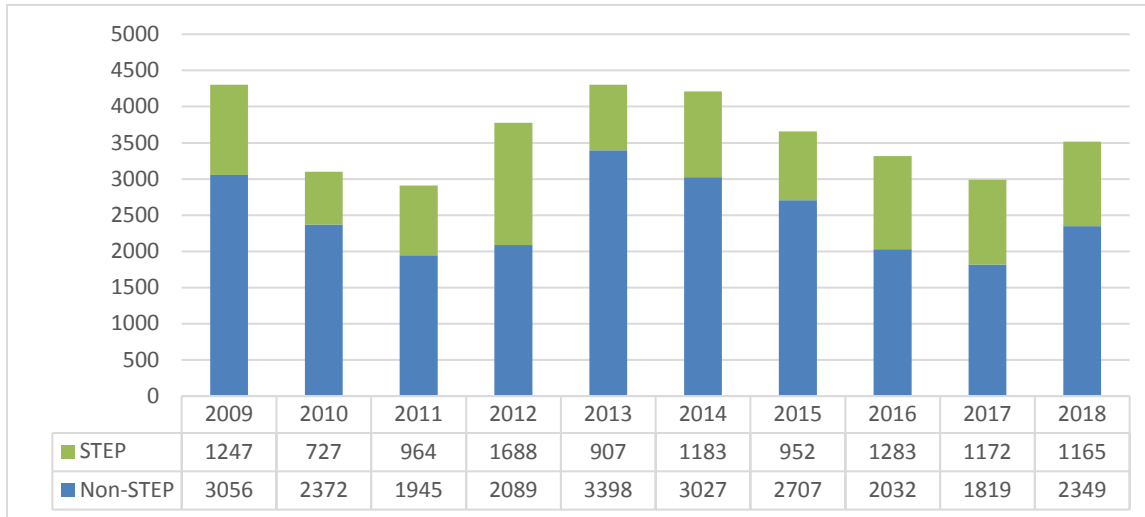
Table 9. Race of Drivers of Stopped Vehicles, by Year

Moving Violations	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Asian	70.74%	78.84%	75.00%	77.15%	70.39%	69.07%	68.12%	67.78%	68.15%	69.84%
African American	52.52%	55.20%	61.07%	63.96%	58.95%	60.76%	63.83%	71.03%	66.36%	59.62%
Hispanic	58.73%	66.19%	68.89%	71.64%	57.86%	69.90%	74.40%	80.75%	68.38%	72.11%
Caucasian	71.14%	70.11%	75.76%	77.94%	72.56%	72.27%	75.84%	75.51%	74.48%	72.19%
Equipment Violations	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Asian	23.16%	19.11%	22.27%	19.88%	23.12%	24.38%	26.22%	24.44%	25.68%	26.35%
African American	34.69%	31.19%	25.62%	25.25%	26.66%	25.93%	23.50%	21.51%	23.07%	30.90%
Hispanic	28.57%	23.02%	19.26%	16.42%	25.16%	22.82%	20.24%	12.42%	27.21%	22.11%
Caucasian	21.12%	21.52%	15.70%	16.51%	18.86%	18.57%	15.38%	15.66%	18.37%	18.82%
License/Registration Violations	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Asian	6.11%	2.05%	2.73%	2.97%	6.49%	6.55%	5.66%	7.78%	6.16%	3.81%
African American	12.04%	12.51%	12.71%	10.79%	14.39%	13.31%	12.67%	7.45%	10.57%	9.48%
Hispanic	11.11%	10.79%	11.11%	11.94%	16.98%	7.28%	5.36%	6.83%	4.41%	5.79%
Caucasian	7.43%	8.30%	8.34%	5.55%	8.58%	9.16%	8.78%	8.83%	7.16%	9.00%

Section 3.3 STEP and Non-STEP Stops

Considering stops from the Selective Traffic Enforcement Program (STEP) separately from regular patrol stops allows for another avenue of analysis. Approximately 31% of the 36082 traffic stops conducted from 2009 – 2018 were STEP traffic stops, and STEP stops represented 32.5% of traffic stops in the last five years. As shown in Figure 6, the number of STEP stops varied significantly from 1668 – 727 per year.

Figure 6. STEP and Non-STEP Traffic Stops by Year



STEP and non-STEP stops also vary in disparity ratios, as shown in Table 10. The disparity is higher for minorities in non-STEP traffic stops. African American drivers have the highest disparity in both categories in nearly all years, indicating African American drivers are more likely than expected to be stopped based on the driving population. These results are expected based on the overall disparity ratio, but disaggregating by stop type allows for a better understanding of where the highest levels of disparity exist. The locations of STEP details were reevaluated in 2018 and were relocated to areas of concentration of traffic accidents, particularly accidents with injuries. This has been the driver of the decrease in the overall disparity ratio.

Table 10. Disparity Ratios of Step and Non-STEP Traffic Stops, by Race and Year

STEP Stops	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Asian	1.05	1.12	1.05	0.95	1.03	0.89	0.83	0.70	0.78	0.83
African American	1.45	1.68	1.42	1.29	1.17	1.18	1.07	1.44	1.40	0.85
Hispanic	0.91	1.13	1.09	0.79	1.00	1.61	1.04	1.31	1.01	1.01
Caucasian	0.90	0.82	0.90	0.96	0.97	0.96	1.03	0.93	0.94	1.11
Non-STEP Stops	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Asian	0.90	0.93	0.85	0.92	1.21	1.15	1.18	1.35	1.27	1.19
African American	2.06	2.24	2.15	1.91	1.77	1.69	1.83	1.58	1.47	1.60
Hispanic	1.38	1.32	1.43	1.18	1.06	1.30	1.39	1.13	1.05	1.17
Caucasian	0.73	0.68	0.71	0.77	0.78	0.79	0.75	0.80	0.84	0.78

Section 4. Outcomes of Traffic Stops

Analyzing information for decisions that are made after the stop is initiated is an ideal way to measure potential racial bias. These types of analyses require no guesswork about the benchmark – the comparison population is the stopped drivers. The below analysis presents the final outcome of the stop – a traffic ticket, a traffic warning ticket, and an outcome more serious than a traffic violation alone. These are traffic stops that result in a police report rather than simply a citation or warning. Offenses typically included on these police reports are DUIs, warrants, drugs, etc. Table 11 presents the outcomes of traffic stops, by year. In nine of the last ten years, over half of all stops resulted in a ticket and about 36% – 45% of stops result in the issuance of a warning only. More serious outcomes have occurred in between 3% and 9 % of stops.

Table 11. Most Serious Outcome of Traffic Stops by Year

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ticket	50.34%	51.27%	53.52%	58.06%	48.80%	50.64%	53.54%	57.44%	55.10%	52.62%
Warning	42.09%	40.14%	37.99%	35.61%	45.27%	44.96%	41.35%	39.40%	40.59%	43.65%
More Serious	7.58%	8.58%	8.49%	6.33%	5.92%	4.39%	5.11%	3.17%	4.31%	3.47%
Total Stops	4303	3099	2909	3777	4305	4210	3659	3315	2991	3514

Table 12 presents the outcome by race. This data is available at a more detailed level than is reported by the IDOT traffic study, allowing for consideration of the most serious outcome of the traffic violation, including warning, citation, and crimes more serious than traffic violations.

This table indicate that, while there is some variation by year, Asian, Hispanic, and Caucasian drivers are similarly likely to receive traffic citations. Asian, African American, and Caucasian drivers are similarly likely to receive traffic warning tickets. African American and Hispanic drivers are more likely to be charged with a crime more serious than a traffic violation.

It should be noted that from 2016 - 2018, the number of traffic stops that result in an outcome more serious than a traffic violation are relatively low (129 or lower), so a variation in a few traffic stops can seem like a large increase in percentage.

Similarly, when disaggregating by race and then disaggregating by outcome, this results in low numbers for some of the categories. For example, relatively few Hispanic drivers are pulled over when compared to other races (190 in 2018). There is considerable variation over the years in the outcomes for Hispanic drivers, but because the number of Hispanic drivers stopped is low, a difference of just a few drivers would have a large impact on the percentage.

Table 12. Outcomes of Traffic Stops by Race and by Year

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Citation Total	2166	1588	1556	2192	2096	2128	1957	1899	1646	1848
Asian	57.76%	63.48%	58.98%	63.50%	51.32%	52.37%	53.73%	51.67%	53.77%	54.60%
African American	46.26%	48.18%	48.36%	53.70%	41.20%	45.00%	48.10%	55.59%	53.52%	45.69%
Hispanic	48.15%	46.04%	46.67%	50.75%	62.26%	63.11%	60.71%	66.46%	61.76%	58.42%
Caucasian	51.93%	51.82%	56.62%	60.00%	51.46%	52.13%	55.85%	58.72%	55.69%	55.68%
Warning Total	1809	1243	1105	1341	1945	1885	1510	1302	1211	1526
Asian	39.95%	34.13%	38.67%	36.20%	47.06%	44.70%	45.50%	48.06%	45.55%	44.76%
African American	42.18%	38.63%	37.34%	32.74%	46.76%	46.78%	41.72%	38.34%	38.75%	46.73%
Hispanic	23.81%	18.71%	25.19%	31.34%	27.04%	31.55%	31.55%	28.57%	33.82%	36.32%
Caucasian	43.89%	44.53%	39.47%	37.16%	45.33%	45.17%	41.12%	39.17%	41.20%	42.31%
More Serious Total	326	266	247	239	255	185	187	105	129	122
Asian	2.29%	2.39%	2.34%	0.30%	1.62%	2.93%	0.77%	0.28%	0.68%	0.63%
African American	11.56%	13.19%	14.30%	13.56%	12.04%	8.22%	10.18%	6.07%	7.73%	7.20%
Hispanic	28.04%	35.25%	28.15%	17.91%	10.69%	5.34%	7.74%	4.97%	4.41%	4.74%
Caucasian	4.18%	3.64%	3.91%	2.84%	3.21%	2.70%	3.03%	2.11%	3.10%	1.80%

Table 13 presents the disparity ratio for each traffic stop outcome, calculated using the percentage of drivers of each race stopped for each year. There is some variation over time for citations, but generally, African American drivers are less likely than expected to receive citations and Caucasian drivers are more likely than expected to receive citations. Over time, Hispanic drivers have been less likely than expected to receive warnings. In 2018, Hispanic drivers were 17% less likely to receive a warning ticket and 43% more likely to receive a citation than would be expected based on the stopped population, but this should be interpreted with caution, as only 46 warning tickets and 84 citations were issued to Hispanic drivers. African American and Hispanic drivers are much more likely than expected to have a traffic stop resulting in an outcome that is more serious than a traffic violation. It should be noted that in 2014 - 2018, the total number of traffic stops with more serious outcomes ranged from 107 – 187.

Table 13. Disparity Ratios of Outcomes of Traffic Stops by Race and by Year

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Citation Total	2166	1588	1556	2192	2096	2128	1957	1899	1646	1848
Asian	1.15	1.24	1.10	1.09	1.05	1.04	1.00	0.90	0.98	1.04
African American	0.92	0.94	0.90	0.93	0.85	0.89	0.90	0.97	0.97	0.87
Hispanic	0.96	0.90	0.87	0.87	1.28	1.25	1.14	1.16	1.12	1.11
Caucasian	1.03	1.01	1.06	1.03	1.06	1.03	1.04	1.03	1.01	1.06
Warning Total	1809	1243	1105	1341	1945	1885	1510	1302	1211	1526
Asian	0.95	0.85	1.02	1.02	1.04	1.00	1.10	1.22	1.12	1.03
African American	1.00	0.96	0.98	0.92	1.03	1.04	1.01	0.98	0.96	1.08
Hispanic	0.57	0.47	0.66	0.88	0.60	0.70	0.76	0.73	0.84	0.84
Caucasian	1.04	1.11	1.04	1.05	1.00	1.01	1.00	1.00	1.02	0.97
More Serious Total	326	266	247	239	255	185	187	105	129	122
Asian	0.30	0.28	0.28	0.05	0.27	0.67	0.15	0.09	0.16	0.18
African American	1.53	1.54	1.68	2.14	2.03	1.87	1.99	1.92	1.81	2.07
Hispanic	3.70	4.11	3.32	2.83	1.81	1.22	1.51	1.57	1.03	1.36
Caucasian	0.55	0.42	0.46	0.45	0.54	0.61	0.59	0.67	0.72	0.52

Section 4.1. Duration of Traffic Stops

As shown in Table 14, the average time for traffic stops varies based on the outcome. Overall, a stop resulting in a warning ticket takes about 9.6 minutes, a citation about 12 minutes, and a more serious outcome about 24.4 minutes.

While there are significant outliers in each of these categories (e.g., three above 100 minutes for warnings, four cases above 100 minutes for citations, and five over 175 minutes for more serious offenses), the exclusion of these cases does not change the average by more than one minute because of the high number of stops. However, these outliers have the potential to significantly influence the length of time when disaggregated by race, outcome, and year. Therefore, Table 14 presents this information as an average of all stops from 2013 - 2017, compared to the overall average for the last five years.

By race, the highest duration to lowest duration between warnings is about one minute across races, citations about four minutes, and more serious about four minutes. In warnings, African American drivers experience the longest stops by about 30 seconds. In citations and more serious violations, stops of Hispanic drivers have the longest duration.

Table 14. Average Duration in Minutes of Traffic Stops by Outcome by Race, 20014 - 2018

	Citation	Warning	More Serious
African American	14.79	10.61	31.61
Asian	13.41	9.81	28.04
Caucasian	11.88	9.57	27.49
Hispanic	15.75	10.11	28.11
Overall Average	13.15	9.93	29.75

Section 4.2. More Serious than Traffic Violations

This section presents information on crimes that are more serious than traffic violations. The unit of analysis for this section is the incident, not the stop. Because of the nature of police reports, one stop could have multiple incidents included. This analysis includes all incidents recorded on the police report; the incidents are disaggregated by (1) offenses that, absent more serious charges, would result in just a traffic citation, and (2) more serious offenses. For example, if someone was stopped for speeding and the officer discovered the driver had a warrant, the driver would be arrested. Both speeding and the warrant would be listed on the police report, and in the below analysis, speeding would be a traffic offense and the warrant would be a more serious offense. A police report is created when a crime beyond a moving violation occurs, as well as driving under the influence of drugs or alcohol, or driving under revoked license/registration.

Table 15 details the offenses associated with police reports from traffic stops in which the outcome was more serious than a traffic violation, from 2014 – 2018. Offenses that make up less than 1% of the total (20 or fewer) were excluded.

The data is restricted to those dates to coincide with a policy change that affected the classification of tickets and more serious charges. At the end of 2013, the leadership team at UPD, in conjunction with the Sheriff's Office and other local law enforcement agencies, changed the arrest policies for the following crimes to reduce arrests:

- Driving with a Suspended License
- No Valid Driver's License
- Theft (misdemeanor)
- Possession of drug paraphernalia
- Possession of cannabis (misdemeanor)

An officer can make the decision to arrest individuals and take them to jail on those charges if the subject's identity is not certain, if the person has a history of failure to appear, or if the public would be endangered by their continued freedom. Suspended licenses and no driver's license charges no longer require arrests, though the driver is not allowed to drive the vehicle.

The non-traffic offenses (theft, drug charges) are still included in the "more serious than traffic violation" category, because while these may no longer lead to an immediate arrest, they are still a more serious charge than simply a traffic infraction.

In Table 15, the unit of analysis is the charge, not the stop. Each stop that is more serious than a traffic violation typically has more than one charge – if a traffic violation occurs with another, more serious offense, both charges will be listed on the police report, and each would be included in the below table.

Arrests from traffic stops are considered in more detail in Section 6.

Table 15. Offenses from Police Reports Resulting from Traffic Stops, 2014 - 2018 (n = 2438)

Traffic Offenses	
Operate Uninsured Motor Vehicle	12.63%
Driving Under Suspended License	6.85%
No Driver's License	3.57%
Operate MV W/Suspend Registration	3.32%
Traffic Sign Violation	2.63%
Improper Lane Usage	2.63%
No Rear Registration Light	2.50%
Speeding (Radar)	2.26%
Failure To Signal	2.26%
Expired Registration	2.09%
Electronic Communication-Voice	2.05%
Driving Without Lights	1.68%
Improper Lighting/One Headlight	1.39%
Seat Belt-Driver & Passenger	1.27%
More Serious Offenses	
Driving Under Revoked License	8.41%
Cannabis Offenses (all)	5.53%
Warrant-In State	5.41%
Driving Under The Infl-Alcohol	3.86%
Cancel/Suspend/Revoked Registration	2.58%
Driving Under Influence-Drugs	2.17%
Drug Equipment-Possession	2.05%
Illegal Transportation Of Liquor	1.89%
Controlled Substance-Possession	1.56%
Breath Alcohol Over Limit	1.39%

Section 5. Searches During Traffic Stops

Searches, including vehicle, driver, and canine sniffs, can be performed for a number of reasons, including probable cause, reasonable suspicion, incident to arrest, drug dog alert, and consent. IDOT has collected data since 2004 as to whether a consent search was performed, and data has been collected since 2007 on whether a consent search was performed, and whether contraband was found. Contraband includes drugs, alcohol or paraphernalia; weapons; stolen property; or other illegal items.⁹ Additionally, data has been collected since 2012 on whether a canine search was conducted, whether the canine alerted, and whether contraband was found.

Section 5.1. Consent Searches

A total of 181 consent searches have been performed during traffic stops from 2009 to 2018, as displayed in Table 16. UPD conducted 24584 traffic stops during this time, and conducted consent searches in 0.63% of cases. Because consent searches are conducted as a very small proportion of all traffic stops, it is difficult to draw meaningful conclusions from the data.

Table 16. Consent Searches Performed by Year, by Race, 2009 - 2018

	Total Stops	Total Consent Searches	% of All Searches	Caucasian	African American	Hispanic	Asian
2009	4277	16	0.37%	4	9	2	1
2010	3079	7	0.23%	4	3	0	0
2011	2830	16	0.57%	4	11	1	0
2012	3751	11	0.29%	7	5	0	0
2013	4294	23	0.54%	10	10	3	0
2014	4205	26	0.62%	13	13	0	0
2015	3659	10	0.27%	5	4	1	0
2016	3317	10	0.30%	3	7	0	0
2017	2990	14	0.47%	7	6	1	0
2018	3504	23	0.66%	11	10	2	0

As shown in Table 17, from 2012 - 2018, UPD officers have searched 117 vehicles by consent. Contraband was found in 33.86% of searches, and this varies significantly by race and by year.

Table 17. Contraband Found in Consent Searches, 2012 – 2018

⁹ Weiss, A. (2005). *Illinois Traffic Stop Statistics Act: Report for the Year 2014*. Springfield, IL: Illinois Department of Transportation.

	Searches of Caucasian Drivers	Contraband Found in Consent Searches of Caucasian Drivers	Searches of African American Drivers	Contraband Found in Consent Searches of African American Drivers
2012	7	3	5	0
2013	10	5	10	1
2014	13	5	13	6
2015	5	3	4	1
2016	3	1	7	4
2017	7	1	6	1
2018	11	1	10	4
Overall	56	33.90%	55	30.91%

Minorities are searched at a higher rate and have contraband found at lower rates. However, because the numbers of searches are so small, further analysis is not presented.

Section 5.2. Dog Sniffs

In 2012, IDOT began collecting data on dog sniffs. This includes information on whether a dog sniff was performed, whether the dog alerted, if the vehicle was subsequently searched, and if contraband was found during the search. As presented in Tables 18 and 19, dog sniffs have been performed in less than 1% of all traffic stops, and the dog has alerted in 96.44% of all cases. Contraband was found approximately 63% of subsequent searches.¹⁰

Table 18. Dog Sniffs and Subsequent Searches by Year and Race, 2012 - 2018

	Total Stops	Canine Sniffs	% of All Stops	Caucasian	African American	Hispanic	Asian
2012	3751	29	0.77%	12	16	1	0
2013	4274	46	1.10%	19	25	2	0
2014	4195	57	1.56%	22	33	1	1
2015	3650	38	1.15%	16	20	2	0
2016	3314	17	0.57%	7	10		0
2017	2990	14	0.40%	6	4	3	1
2018	3504	24	1.89%	7	14	3	0

¹⁰ One potential reason the alert rate is higher than the rate at which contraband is found is likely due to “shake,” or small amounts of drug debris, that do not lead to an arrest.

Table 19. Dog Sniffs and Subsequent Search Results by Race, 2012 - 2018

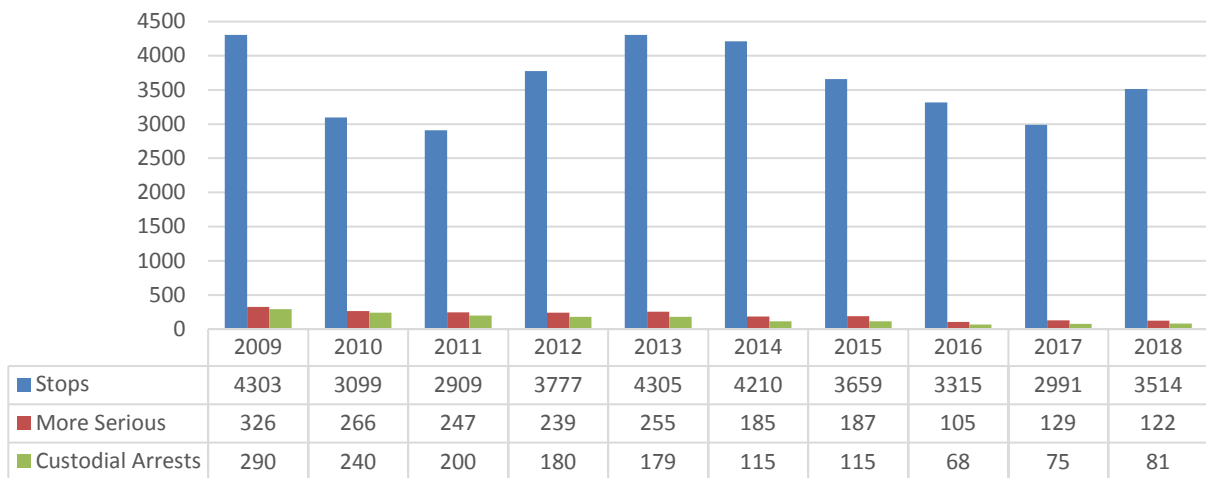
	Total	Dog Alerts	Contraband Found
Total Sniffs	225	96.44%	62.79%
Asian	2	100.00%	100.00%
African American	122	95.08%	66.83%
Caucasian	89	95.51%	60.55%
Hispanic	11	91.67%	87.30%

As with consent searches, dog sniffs are performed during traffic stops with minorities at higher rates. However, because dog sniffs are performed in such a small percent of all traffic stops, further analysis is not presented.

Section 6. Arrests from Traffic Stops

Traffic stops can result in custodial arrests, where an individual is taken to jail. In 2009 - 2018, approximately 4.6% of traffic stops led to a custodial arrest where a subject was taken to the Champaign County Correctional Center. As depicted in Figure 7, the number traffic stops resulting in arrest has decreased in recent years. Note that this includes only **stops** that result in any arrest – more than one person could be arrested in a stop.

Figure 7. Outcomes of Traffic Stops, 2009 – 2018



The following analyses will include only data from 2014 – 2018, after the policy change referenced previously, which led to fewer arrests overall, and arrests predominately for more serious charges.

Table 20 displays the racial demographics of the 454 arrested individuals as an outcome of a traffic stop. This includes both drivers and passengers. African Americans make up the largest portion of arrested drivers and passengers at 61.7%. Caucasian individuals represent 31.8% of arrests, while Hispanic and Asian individuals comprise a combined 7%. Because the number of arrests is low in the last 4 years, the percentages should be interpreted with caution, and are presented with the number of individuals arrested. Across all races, the number of drivers arrested during traffic stops has gone down. However, African American drivers account for over half of all arrests in all years.

Table 20. Demographics of Drivers of Traffic Stops Resulting in Arrest, 2014 - 2018

	2014	2015	2016	2017	2018	Total
African American	62.61%	65.22%	63.24%	61.33%	59.26%	62.56%
	72	75	43	46	48	284
Asian	1.74%	0.87%	0.00%	1.33%	2.47%	1.32%
	2	1		1	2	6
Caucasian	27.83%	27.83%	32.35%	32.00%	29.63%	29.52%
	32	32	22	24	24	134
Hispanic	7.83%	6.09%	4.41%	4.00%	8.64%	6.39%
	9	7	3	3	7	29
Grand Total	115	115	68	75	81	454

While there is significant racial disparity in arrests resulting from traffic stops, a large proportion of these arrests are non-discretionary and most frequently involve warrants, driving under the influence of drugs/alcohol, and driving under revoked license/registration.