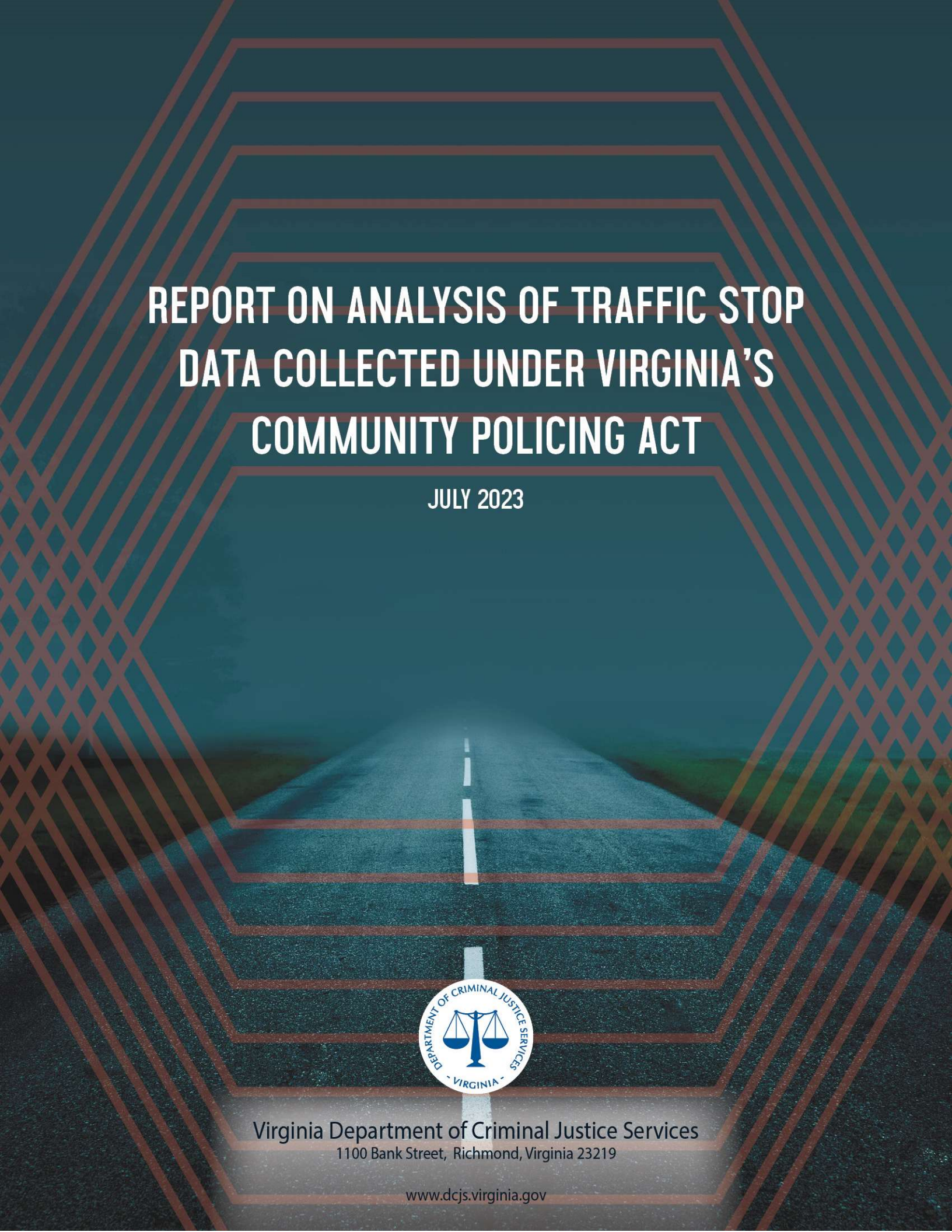
REPORT ON ANALYSIS OF TRAFFIC STOP DATA COLLECTED UNDER VIRGINIA'S COMMUNITY POLICING ACT

JULY 2023



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Executive Summary

Background

The Community Policing Act of 2020 (HB 1250; "the Act") mandated that the Virginia State Police (VSP) and other state and local law enforcement agencies, including police departments (PDs) and sheriff's offices (SOs), begin collecting and reporting data on traffic stops as of July 1, 2020. State law enforcement agencies, PDs, and SOs are required to collect data on the race, ethnicity, and other characteristics of the drivers stopped, and on other circumstances of the stop such as the reason for the stop, whether any individuals or vehicles were searched, and the outcome of the stop (arrest, citation, warning, etc.). All reporting agencies are to submit this data to VSP, who maintain the data in the Community Policing Database.

The Act also mandated that the Virginia Department of Criminal Justice Services (DCJS) periodically obtain data from the Community Policing Database and produce an annual report "*for the purposes of analyzing the data to determine the existence and prevalence of the practice of bias-based profiling and the prevalence of complaints alleging the use of excessive force.*" Such reports shall be produced and published by July 1 of each year.

This is the third of these reports from DCJS. It contains a review of how the data was collected and analyzed as well as preliminary findings of data from 650,387 traffic stops reported in Virginia during the nine-month period between July 1, 2022, and March 31, 2023. This report also presents the findings from analyses of statewide data; aggregated data from the seven VSP Divisions; and data from each individual law enforcement agency that reported sufficient data to the Community Policing Database.

The information presented in this report is preliminary and should be interpreted with caution. Although this analysis identified disparities in traffic stop rates related to race/ethnicity, it does not allow us to determine or measure specific reasons for these disparities. Most importantly for this study, this analysis does not allow us to determine the extent to which these disparities may or may not be due to bias-based profiling or to other factors that can vary depending on race or ethnicity. These other factors include differences in locations where police focus their patrol activities, differences in underlying regional populations, differences in driving patterns among individuals, and the lack of a scientifically established baseline for determining the number of drivers in each racial/ethnic group who are on the road and subject to being stopped while driving.

The analysis of racial disparity is a complex field with a vast array of potential contributing factors. Many data elements could play influential roles in racial/ethnic patterns of traffic enforcement but are unavailable to DCJS. Factors like the race of the officer performing the stop, agency policies and community priorities driving enforcement patterns, police report narratives outlining legal justifications for stop, search, and arrest can all inform stop patterns but are not within the current purview of available Community Policing Act data. Additionally, the data presented in this report cannot reflect any stop trends from agencies which did not provide data or records that were excluded for completeness issues. As such, while the report presents stop, search, and arrest disparities based on the available data, they should not be construed as complete and final proof of disparity OR any explanation of contributing factors which drive genuine disparities which may exist.

This report does not tabulate the many positive actions that can occur for a traffic stop such as seizures of guns, confiscation of drugs, and ensuring valid and current drivers' licenses. The Community Policing Act imposes narrow requirements for data collection and analysis, and any benefits of traffic or pedestrian stops are not within the scope of the law

While DCJS and VSP have introduced process improvements based on lessons learned in past reporting, the Community Policing Act is still in the early stages of implementation. More and better data, as noted in the

recommendations, is needed to make the observations in this report more than directional, and the costs of such data gathering need further evaluation. As the report notes, many PDs and SOs – especially smaller agencies with limited resources – continue to face challenges establishing the data collection and reporting required under the Act. The majority of local law enforcement agencies (LEAs) in Virginia (255, or 74%) employ 50 or fewer sworn officers, including 118 (or 34%) employing 10 or fewer sworn officers. Many of these agencies have faced challenges fulfilling all requirements imposed by the Act and aligning their collection practices with the changes introduced since first implementation of the Act. For this reason, some agencies were unable to report complete data responsive to the Community Policing Act for the entire year, and in some cases the quality of the data was limited. Additionally, a substantial number of smaller agencies reported so few traffic stops that it was not possible to interpret data related to driver race/ethnicity. The state may wish to consider providing additional resources to LEAs, particularly smaller agencies, to support their ability to comply with the data-related provisions of the Act.

Another important limitation to the data and findings presented in this report relates to the race/ethnicity data in the Community Policing Database itself. Because the state lacks a standardized mechanism for reporting the race or ethnicity of a given driver, law enforcement officers must either make their own determination about a driver's race/ethnicity (which may or may not be accurate) or ask for that information in the course of the traffic stop, which could raise constitutional concerns or escalate the perception of conflict in certain situations. Virginia does not collect and store information about a driver's race/ethnicity, whether in driver-related databases maintained by the Virginia Department of Motor Vehicles or on individual driver's licenses. Whether and to what extent the data related to driver race/ethnicity in the Community Policing Database accurately captures this information cannot be determined without further review.

The factors described above limited the ability of DCJS staff to conduct any complex statistical analysis of the data or to draw any firm conclusions about the existence and prevalence of the practice of bias-based profiling in a given agency or jurisdiction. It is anticipated that the reporting, analysis, and interpretation of Community Policing Act data will improve in the future as the program matures.

Differences in 2023 Report

This marks the third annual report on Community Policing Act data. Key differences since last year's report are summarized below:

- Version 5.2 of the VSP CPA Data Collection Instructions and Technical Specifications (effective July 1, 2022) updated the Residency data element from optional to mandatory. For each stop, officers are now instructed to indicate whether the subject is a resident of the town/city/county of stop, a resident of another Virginia jurisdiction, or an out of state resident. An unknown value is also available when the officer cannot determine the subject's residency. With the inclusion of the residency field, DCJS was able to conduct a local resident-only analysis of stop subjects from City and County agencies to more accurately compare stop demographics to the census-derived benchmarks. The results of this filtered analysis are included in Appendix C, along with the standard City and County agency tables showing stop findings for all subjects (whether resident or non-resident). Similarly, filtered state residents-only analyses were performed for statewide and VSP tables, presented in Table 13 and Appendix B, respectively.
- The National Center for Health Statistics (NCHS) Bridged Race estimates which DCJS used in past years to construct the disparity index (DI) benchmark data have been discontinued as of September 2021. However, the base dataset which the NCHS file was constructed from, the postcensal estimates published by the Population Division of the Census Bureau, continue to be published and were utilized for this year's benchmarks. The benchmarks used are still age restricted to individuals 15 years and older and categorized

into the same race and ethnicity groups, but due to this year's estimates lacking race bridging, multi-racial individuals were excluded from benchmarking. For further information on benchmark methodology, see Appendix I.

- In past years, some final monthly or quarterly LEA data submissions with pending quality issues upon the DCJS data "freeze date" could not be included in the analysis dataset. To increase VSP review time for Jan-Mar 2023 stop data and allow more LEA resubmissions to be accepted into the analysis dataset, DCJS extended the "freeze date" for FY2023 data receipt to May 3, 2023. This added an extra week to the historical deadline of April 26 and increased the number of pre-exclusion cases received by DCJS.

Factors Influencing 2023 Data Trends

- While no major legislation was passed in the 2022 Virginia General Assembly with a directly observable impact on traffic stops, the following two newly enacted state laws with a **potential** impact on traffic stops and post-stop outcomes in Virginia:

Virginia General Assembly 2022 Session CPA Relevant Legislation		
Bill ID	**Description**	**Potential Impact**
HB750/SB327	Prohibits Virginia LEAs from establishing formal or informal quotas for arrests or summons.	May reduce stops and resulting arrests or summons among any agencies which had quota systems incentivizing them.
HB632	Upgrades a secondary offense for exhaust system excessive noise to a primary offense and allows LEOs to stop vehicles for violations of local ordinances based on exhaust systems.	May increase stops based on the newly enacted primary offense and stoppable local ordinances.

Given both the methodological differences and potential external factors involved in this report, it is difficult to directly compare results from the 2023 analysis to the 2022 analysis. Any year-to-year comparison of traffic stop data in these reports should take into consideration the items outlined above.

Key Findings

Despite the limitations noted earlier, DCJS staff were able to identify differences in traffic stop rates for persons in different racial/ethnic groups for FY2023. This was done by comparing the percentage of persons in each racial/ethnic group in Virginia's population age 15 and older (generally the legal age to drive in Virginia) to the percentage of persons in each racial/ethnic group among drivers in traffic stops. The ratio between these two percentages was used to calculate a statewide Disparity Index (DI) for stops for each driver group. Traffic stop DIs were not calculated for town and "other" agencies (such as airport or campus PDs) because population breakouts by age and race/ethnicity were not available for these areas.

DCJS staff also examined differences in what happens to drivers in different racial/ethnic groups once a stop has occurred, although this analysis was conducted only for those agencies reporting a sufficient number of searches and actions taken toward the driver. This was done by comparing the percentage of drivers stopped in each racial/ethnic group to the percentage in each group for which the stop resulted in a particular outcome such as a search or arrest. As was the case in the 2022 report, differences between driver racial/ethnic groups were found regarding the reasons a stop was made, whether a search of individuals or the vehicle occurred, and what action was taken toward the driver (warning, citation, arrest, etc.).

Calculated DI values were used to assess whether drivers in different racial/ethnic groups were overrepresented (or underrepresented) in their likelihood to be stopped, or in events that occurred after a stop was made. While the values of the disparity indices are derived from a mathematical formula, the "high, moderate, no overrepresentation" categories are subjective benchmarks which are not statistically derived and are purely for relative comparison, as follows[1]:

- A **DI of 2.0 or higher** indicates *high overrepresentation* for a group in how likely it is that a driver will be stopped, or that a particular event (search, arrest, etc.) will occur during the stop.
- A **DI of 1.1 to 1.9** indicates *moderate overrepresentation* for a group in how likely it is that a driver will be stopped, or that a particular event (search, arrest, etc.) will occur during the stop.
- A **DI of 1.0 or less** indicates *no overrepresentation* (and possibly underrepresentation) for a group in how likely it is that a driver will be stopped, or that a particular event (search, arrest, etc.) will occur during the stop.

The DIs calculated for both traffic stops and for events after a stop was made are descriptive and intended only to show relative degrees of disparity; they are not, and should not be interpreted as, measures of statistically significant levels of disparities between driver groups.

Note that stop DIs for both all subjects and for local/state resident only groups are reported for VSP, City/County, and Statewide analyses. Because the benchmark estimates are based on the resident population, the resident stop DIs are a more precise representation of the relationship of the agency/state's stops to their expected stop demographics (all subject DIs are shown for comparison purposes). However, because searches and arrests are benchmarked against the actual stopped drivers rather than external data estimates, the same is not true for resident search and arrest DIs.

Analysis of Traffic Stops: Statewide

Overview of Statewide Traffic Stops

In total, 650,387 traffic stops made in Virginia were analyzed, representing all stops with full data reported by VSP and 299 other PDs and SOs for the nine-month period from July 1, 2022 through March 31, 2023. All references to "2022" refer to the previous analysis year.

- The vast majority (98.3% or 639,321) of the traffic stops were made for traffic or motor-vehicle equipment violations. Last year, 97.6% of stops were for traffic or equipment violations.
- Only 2.1% (13,406) of the traffic stops resulted in a search of the driver or the vehicle. This is lower than last year's rate of 2.4% for searches of driver or vehicle.
- The most frequent outcome of a traffic stop was issuing a citation or summons (62.2% or 404,841 stops, compared to 64.1% in 2022). A warning was issued in another 34.4% (223,413) of stops, compared to 31.9% in 2022.
- Only 1.2% of the traffic stops (7,750 stops) resulted in a driver being arrested. This is down from last year's rate of 1.5% for drivers arrested.
- Physical force by either party was a rare occurrence in traffic stops. Officer force against the subject(s) of a traffic stop was recorded for 631 stops (0.1%) compared to 652 in 2022, and subject force against an officer was recorded for 554 stop (0.1%) compared to 730 stops in 2022.

[1] In some cases involving very small numbers of traffic stops, Disparity Indices (DI) of 3.0 and greater were calculated. However, these should generally be considered unreliable due to the small numbers of stops available for analysis.

Driver Racial/Ethnicity Analysis of Statewide Traffic Stops

- During the 2023 reporting period, Black drivers were stopped at higher rates than White drivers. Although only 19.4% of Virginia's driving-age population in the dataset was Black, 30.4% of state resident drivers stopped were Black. Among all drivers stopped regardless of residency, 30.3% were black.
  - In 2022, 19.5% of Virginia's driving-age population in the dataset was Black, while 30.8% of drivers stopped were Black.

- Black drivers who were stopped were searched at higher rates than White drivers. 2.5% of stopped Black drivers had a search of their person or vehicle conducted, compared to 1.8% of White drivers.
  - In 2022, 2.8% of stopped Black drivers had a search of their person or vehicle conducted, compared to 2.1% of White drivers.

- Black drivers who were stopped were arrested at higher rates than White drivers. 1.6% of Black drivers stopped were arrested, compared to 0.9% of White drivers.
  - In 2022, 1.9% of Black drivers stopped were arrested, compared to 1.2% of White drivers.

- Hispanic drivers (of any race) were also stopped at higher rates than White drivers, although not to the same extent as Black drivers. Although Hispanics made up only 9.0% of Virginia's driving-age population in the dataset, they made up 9.7% of state resident drivers stopped. Among all drivers stopped regardless of residency, 10.2% were Hispanic.
  - In 2022, Hispanics made up 8.9% of Virginia's driving-age population in the dataset and 9.5% of drivers stopped.

- Hispanic drivers who were stopped were searched at higher rates than White drivers. 2.5% of stopped Hispanic drivers had a search of their person or vehicle conducted, compared to 1.8% of White drivers.
  - In 2022, 2.9% of stopped Hispanic drivers had a search of their person or vehicle conducted compared to 2.1% of White drivers.

- Hispanic drivers who were stopped were arrested at higher rates than either White drivers or Black drivers. 1.7% of stopped Hispanic drivers were arrested, compared to 0.9% of White drivers and 1.6% of Black drivers.
  - In 2022, 2.1% of stopped Hispanic drivers were arrested, compared to 1.2% of White drivers and 1.9% of Black drivers.

- Native American/American Indian Drivers were stopped at marginally higher rates than White drivers. While they made up 0.29% of Virginia's driving-age population in the dataset, they made up 0.34% of state resident drivers stopped. Among all drivers stopped regardless of residency, they also composed 0.34% of stops. Due to the low frequency of Native American/American Indian individuals in Virginia's population, their disparity index rates in these analyses are especially prone to sensitivity. Stopped Native American/American Indian Drivers were largely underrepresented in searches and arrests.
  - In 2022, Native Americans/American Indians made up 0.32% of Virginia's driving-age population in the dataset and 0.29% of drivers stopped.

- White and Asian/Pacific Islander drivers continue to be stopped at rates near or below their representation in the driving-age population statewide – even when filtering analysis to state resident stops only. This underrepresentation occurred not only for drivers stopped but also for all related measures including reasons for stops, searches of drivers and vehicles, and stop outcomes such as arrests or citations.

Analysis of Traffic Stops: Agency-Level

For the 2023 report, DCJS examined traffic stop data for Virginia State Police (VSP) as an agency statewide and for 299 other individual PDs and SOs.[2] The degree to which each agency's data could be analyzed depended on both the amount of data reported by the agency and the amount of resident population data available for the locality served by the agency. Therefore, the findings are presented separately for four different groups of law enforcement agencies: VSP, agencies serving cities and counties, agencies serving towns, and other agencies. When relevant, stop DIs are compared for both the unfiltered all stopped driver findings and the more precise state resident/local resident subset of stops.

Analysis Tables

Analysis and Disparity Index (DI) by Law Enforcement Agency (LEA) Type: Traffic Stops[3]

Traffic Stops Conducted by Virginia State Police: *1 statewide agency (7 VSP Divisions combined) of 300 LEAs in dataset (0.3%); 26.4% of analyzed stops*	**Traffic Stops Conducted by City and County LEAs:** *149 of 300 LEAs in dataset (49.7%); 59.8% of analyzed stops*	**Traffic Stops Conducted by Town LEAs:** *108 of 300 LEAs in dataset (36.0%); 11.2% of analyzed stops*	**Traffic Stops Conducted by "Other" LEAs:** *42 of 300 LEAs in dataset (14.0%); 2.6% of analyzed stops*
Summary of data: Black drivers had higher VSP traffic stop DIs than other drivers.	**Summary of data:** Black and Hispanic drivers had higher DIs in terms of traffic stops by city and county LEAs. Many Black DIs drop from high to moderate when filtering to local resident stops.	**Summary of data:** The percentages of Black and Hispanic drivers stopped by town LEAs were lower than the percentages of stops for these drivers statewide.	**Summary of data:** Black drivers were stopped at a higher rate by "other" agencies compared to the statewide percentage. White and Hispanic drivers were stopped at a lower rate.
Highlights from data: • No driver groups had **high overrepresentation** for traffic stops made by VSP in either the state resident or all driver findings. • Black, Hispanic, and American Indian drivers had **moderate overrepresentation** for stops made by VSP. This finding persists but is slightly reduced for all three groups when analyzing only state resident stops. • VSP had **no overrepresentation**[6] for stops of Asian and White drivers in both the state resident and all driver stop findings.	**Highlights from data:** • 32.2% of agencies had **high overrepresentation** for all stops of Black drivers, and 18.1% of agencies had the same for all stops of Hispanic drivers. However, only 1.3% of agencies had high overrepresentation for White drivers stopped. • When analyzing only local residents stopped, the **high overrepresentation** rate for Black drivers drops to 12.2%. For Hispanic local resident drivers, 6.1% of agencies had a high rate of overrepresentation. Zero agencies had a high rate for White drivers. • 49.9% of agencies had **moderate overrepresentation** for stops of Black drivers, and	**Highlights from data:** • While 30.3% of drivers stopped statewide were Black, 21.1% of drivers stopped by town agencies were Black. • Hispanic drivers were 10.2% of those stopped statewide and lower for drivers stopped by town agencies (9.2%). • The percentage of White drivers stopped by town agencies – 67.1% – was higher than the percentage of White drivers stopped statewide (56.8%).	**Highlights from data:** • 53.5% of drivers stopped by "other" agencies were White, compared with 56.8% of stops statewide. • 31.8% of drivers stopped by "other" agencies were Black, compared with 30.3% of all stops statewide. • The percentage of Hispanic drivers stopped by "other" agencies – 9.6% – was lower than the percentage stopped statewide (10.2%).

[2] Fifty-nine (59) Virginia agencies were not included in the analysis because they do not make any traffic stops, they do not patrol public roadways, they are no longer operational, or DCJS did not receive their data until after May 16, 2023.

[3] Due to data limitations, a DI could not be calculated to indicate whether any driver group was overrepresented in traffic stops by town LEAS and other LEAs.

Traffic Stops Conducted by Virginia State Police: *1 statewide agency (7 VSP Divisions combined) of 300 LEAs in dataset (0.3%); 26.4% of analyzed stops*	**Traffic Stops Conducted by City and County LEAs:** *149 of 300 LEAs in dataset (49.7%); 59.8% of analyzed stops*	**Traffic Stops Conducted by Town LEAs:** *108 of 300 LEAs in dataset (36.0%); 11.2% of analyzed stops*	**Traffic Stops Conducted by "Other" LEAs:** *42 of 300 LEAs in dataset (14.0%); 2.6% of analyzed stops*
	45.6% of agencies had the same for stops of Hispanic drivers. Only 9.4% of agencies had moderate overrepresentation for White drivers stopped. • Among local residents, the agency rate for **moderate overrepresentation** was 69.4% Black drivers, 37.4% for Hispanic drivers, and 6.1% for White drivers. • Only 18.8% of agencies had **no overrepresentation**[4] for stops of Black drivers, and only 36.2% of agencies had the same for stops of Hispanic drivers. However, 89.3% of agencies had no overrepresentation for White drivers stopped. • In comparison, the agency **no overrepresentation** rate among local residents was 18.4% for Black drivers, 56.5% for Hispanic drivers, and 93.9% for White drivers.		

[4] "No overrepresentation" rate includes agencies where there were 0 stops from a given racial group.

Analysis and Disparity Index (DI) by LEA Type: Driver/ Vehicle Searches

Searches Conducted by Virginia State Police: *1 statewide agency (7 VSP Divisions combined) of 300 LEAs in dataset (0.3%); 12.4% of analyzed searches*	**Searches Conducted by City and County LEAs:** *149 of 300 LEAs in dataset (49.7%); 74.3% of analyzed searches*	**Searches Conducted by Town LEAs:** *108 of 300 LEAs in dataset (36.0%); 12.0% of analyzed searches*	**Searches Conducted by "Other" LEAs:** *42 of 300 LEAs in dataset (14.0%); 1.3% of analyzed searches*
Summary of data: Black, Hispanic, and Asian drivers had higher DIs than other driver groups in terms of searches conducted by VSP.	**Summary of data:** Black and Hispanic drivers had higher DIs than other driver groups in terms of searches conducted by city and county LEAs.	**Summary of data:** Black and Hispanic drivers again had higher DIs than other driver groups in terms of searches conducted by town LEAs.	**Summary of data:** Black and Hispanic drivers again tended to have higher DIs than other driver groups in terms of searches conducted by "other" LEAs.
Highlights from data: • VSP has **high overrepresentation** for searches of Hispanic drivers. • Black, and Asian drivers had **moderate overrepresentation** for searches made by VSP. • There was **no overrepresentation** for searches of American Indian and White drivers in searches made by VSP.	**Highlights from data:** • 7.4% of agencies had **high overrepresentation** for searches involving Black drivers or their vehicle, and 11.4% of agencies had the same for searches involving Hispanic drivers or their vehicle. Only 0.7% of agencies had high overrepresentation for searches involving White drivers or their vehicle. • 45.6% of agencies had **moderate overrepresentation** for searches involving Black drivers or their vehicle, and 20.1% of agencies had the same for searches involving Hispanic drivers or their vehicle. 24.8% of agencies had moderate overrepresentation for searches involving White drivers or their vehicle. • 43.0% of agencies had **no overrepresentation**[1] for searches involving Black drivers or their vehicle, while 61.7% of agencies had the same for searches involving Hispanic drivers or their vehicle. By comparison, 73.8% of agencies had no overrepresentation for searches involving White drivers or their vehicle.	**Highlights from data:** • 12.0% of agencies had **high overrepresentation** for searches involving Black drivers or their vehicle, and 16.7% of agencies had the same for searches involving Hispanic drivers or their vehicle. By comparison, only 0.9% of agencies had high overrepresentation for searches involving White drivers or their vehicle. • 24.1% of agencies had **moderate overrepresentation** for searches involving Black drivers or their vehicle, and 13.0% of agencies had the same for searches involving Hispanic drivers or their vehicle. 21.3% of agencies had moderate overrepresentation for White drivers or their vehicle. • 58.3% of agencies had **no overrepresentation**[1] for searches involving Black and Hispanic drivers or their vehicle. By comparison, 76.9% of agencies had no overrepresentation for searches involving White drivers or their vehicle.	**Highlights from data:** • 11.9% of agencies had **high overrepresentation** for searches involving Black drivers or their vehicle, and 16.7% of agencies had the same for searches involving Hispanic drivers or their vehicle. 2.4% of agencies had the same for searches involving White drivers or their vehicle. • 14.3% of agencies had **moderate overrepresentation** for searches involving Black drivers or their vehicle, and 4.8% of agencies had the same for searches involving Hispanic drivers or their vehicle. 16.7% of agencies had moderate overrepresentation for searches involving White drivers or their vehicle. • 71.4% of agencies had **no overrepresentation**[5] for searches involving Black drivers or their vehicle, and 54.8% of agencies had the same for searches involving Hispanic drivers or their vehicle. 73.8% of agencies had no overrepresentation for searches involving White drivers or their vehicle.

[5] "No overrepresentation" rate includes agencies with at least one stop from each racial/ethnic group, but 0 searches within that group.

Analysis and Disparity Index (DI) by LEA Type: Driver Arrests

Driver Arrests Conducted by Virginia State Police: *1 statewide agency (7 VSP Divisions combined) of 300 LEAs in dataset (0.3%); 19.0% of analyzed arrests*	**Driver Arrests Conducted by City and County LEAs:** *149 of 300 LEAs in dataset (49.7%); 69.4% of analyzed arrests*	**Driver Arrests Conducted by Town LEAs:** *108 of 300 LEAs in dataset (36.0%); 9.9% of analyzed arrests*	**Driver Arrests Conducted by "Other" LEAs:** *42 of 300 LEAs in dataset (14.0%); 1.7% of analyzed arrests*
Summary of data: Black and Hispanic drivers had higher DIs than other driver groups in terms of arrests made by VSP.	**Summary of data:** Black and Hispanic drivers had higher DIs than other driver groups in terms of arrests made by city and	**Summary of data:** Black and Hispanic drivers again had higher DIs than other driver groups in terms of arrests made by town	**Summary of data:** DIs for arrests of Black and Hispanic drivers by "other" agencies were generally higher than for White
Highlights from data: • No driver groups had **high overrepresentation** for arrests of stopped drivers made by VSP. • Black and Hispanic drivers had **moderate overrepresentation** for stopped driver arrests made by VSP. No other driver groups had moderate overrepresentation for arrests made by VSP. • There was **no overrepresentation** for American Indian, Asian and White drivers in arrests.	**Highlights from data:** • 15.4% of agencies had **high overrepresentation** for Hispanic drivers arrested, and 8.1% of agencies had the same for Black drivers arrested. 2.0% of agencies had high overrepresentation for White drivers arrested. • 33.6% of agencies had **moderate overrepresentation** of Black drivers arrested, and 18.1% of agencies had the same for Hispanic and White drivers arrested. • 54.4% of agencies had **no overrepresentation**[1] for Black drivers arrested, and 59.7% of agencies also had the same for Hispanic drivers arrested. 79.2% of agencies had no overrepresentation for White drivers arrested.	**Highlights from data:** • 12.0% of agencies had **high overrepresentation** for Black drivers arrested, and 13.0% of agencies had the same for Hispanic drivers arrested. No agencies had high overrepresentation for White drivers arrested. • 16.7% of agencies had **moderate overrepresentation** for Black drivers arrested, and 7.4% of agencies had the same for Hispanic drivers arrested. 23.1% of agencies had moderate overrepresentation for White drivers arrested. • 65.7% of agencies had **no overrepresentation**[6] for Black drivers arrested, and 67.6% of agencies had the same for Hispanic drivers arrested. 75.9% of agencies had no overrepresentation for White drivers arrested.	**Highlights from data:** • 11.9% of agencies had **high overrepresentation** for Black and Hispanic drivers arrested. 2.4% of agencies had high overrepresentation for White drivers arrested. • 19.0% of agencies had **moderate overrepresentation** for Black and White drivers arrested. 4.8% of agencies had moderate overrepresentation for Hispanic drivers arrested. • 66.7% of agencies had **no overrepresentation**[1] for Black drivers arrested, and 59.5% of agencies had the same for Hispanic drivers arrested. By comparison, 71.4% of agencies had no overrepresentation for White drivers arrested.

[6] "No overrepresentation" rate includes agencies with at least one stop from each racial/ethnic group, but 0 arrests within that group.

Data on Complaints Alleging Excessive Use of Force

The Community Policing Act also directs DCJS to obtain data from VSP on "*the prevalence of complaints alleging the use of excessive force."* Use-of-force data is reported to VSP by local LEAs on the VSP SP-335 form. Use-of-force data reporting under HB 1250 began on July 1, 2020. DCJS examined the data that agencies reported to VSP for the period from January 1, 2022 – December 31, 2022. Due to the limited amount of data reported, no analysis of the data is presented in this report. VSP and DCJS are examining future options for reporting use-of-force data. Therefore, the focus of the current report is on the analysis of traffic stop data.

Conclusions and Recommendations

The overall finding of this analysis is that, statewide, Black and to a lesser degree Hispanic drivers in Virginia were disproportionately stopped by law enforcement when compared to other drivers between July 1, 2022, and March 31, 2023, based on the number of state resident drivers stopped relative to their numbers in Virginia's driving-age population. This type of disparity was also seen among local resident traffic stops made by many individual city and county law enforcement agencies for which disparity measures could be calculated. In the aggregate, stops of Black and Hispanic drivers were also more likely to result in a search or an arrest than stops of drivers from other racial groups. This finding is consistent with traffic stop research conducted in other states, and with the general findings of the previous DCJS 2022 CPA report.

The addition of the driver residency analysis for statewide and City/County stop DIs brings mixed conclusions to the results of this year's report. For city and county agencies who exhibited high or moderate stop DIs in their all-subjects table, but lower stop DIs for the same group in the local residents table, the residency analysis serves as some initial indication that their observed disparity rate may be due to frequent out of area stopped drivers who do not match the benchmark data this analysis measures against. On the other hand, city and county agencies with high or moderate stop DIs that persist in both the all-subjects and the local residents tables may indicate that there are other underlying causes for the disparity indices above 1.0.

Although this analysis identified disparities in traffic stop rates related to race/ethnicity, it does not allow us to determine or measure specific reasons for these disparities. Most importantly for this study, this analysis does not allow us to determine the extent to which these disparities may be due to bias-based profiling or other factors that can vary depending on race or ethnicity.

Previous research has identified various factors other than bias-based profiling that could help to explain why members of a given racial/ethnic group may be stopped at a higher or lower rate than their presence in the driving-age population would suggest. These include:

- Different driving rates or patterns by different racial groups (perhaps linked to differences in housing or employment locations, in use of public transportation, etc.).
- Socioeconomic impacts on vehicle maintenance which may lead to racial/ethnic trends in the rate of equipment violations.
- Different rates of policing in different areas (i.e., racial minorities may be more likely to drive in or through higher-crime areas, which are policed more than other areas).
- Different agency practices (i.e., some law enforcement agencies differ on how much discretion they give officers in deciding when to make a stop).

A major limitation of this study is that it used each racial/ethnic group's proportion of the resident driving-age population as a benchmark for measuring traffic stop disparities. This approach provides only a crude measure of each group's exposure to potential traffic stops; in other words, a racial/ethnic group's proportion of the driving-

age population in a locality provides only a rough *estimate* of that group's proportion of the *actual* driving population in that locality. The benchmarking issue is made more pertinent with the discontinuation of the federal NCHS Bridged Race dataset used in past CPA estimates. Without the ability to incorporate multi-racial individuals into Virginia population benchmarks DCJS has lost roughly 2.5% of the total usable intercensal estimate count and risks developing benchmarks that are marginally disproportionate to the demographics developed under bridged race data. This limitation of census-derived benchmarking highlights the importance of adopting other methods of examining potential bias (search hit-rate analysis, veil of darkness, propensity score matching) as recommended in previous reports.

Currently, researchers across the United States have no precise measure of how often drivers of a given racial/ethnic group drive in their communities. Within each racial/ethnic group's population in a locality, some individuals do not drive at all; they may be incapable of driving, not have a driver's license or a motor vehicle, or simply choose not to drive even if they can. Others may drive, but rarely, and others still may be more likely to use public transportation than drive. The Residency field has allowed DCJS to more closely estimate the demographics of local drivers in Virginia, but there are still limitations to what this data element can provide. Most notably, only VSP and City and County agencies have a feasible public dataset from which to construct benchmark estimates. Agencies categorized as "Other" with transitory or ambiguous populations may likely never have such a resource available. Furthermore, as with all CPA data elements, the Residency field is subject to the collection and entry methods of each individual officer and other LEA personnel involved in collecting and reporting the CPA data.

STANDING RECOMMENDATION: *The percentages and Disparity Indexes (DIs) presented in this report should not be interpreted to indicate that any individual law enforcement agency is practicing bias-based profiling. Given the limitations noted above, these figures should only be used to identify where the numbers indicate that certain ethnic/racial groups are being disproportionately stopped, which may bear further review to identify why this is occurring and whether any action should be considered to reduce or eliminate it.*

This is a standing recommendation given the limitations of the CPA's current data fields. In addition, any year-to-year comparison of CPA findings should take into consideration both methodological differences and external factors involved in each year's report.

RECOMMENDATION: *For the DCJS 2024 CPA report, local resident analyses should be broken out for Town agencies and benchmarked against county-level census-derived benchmark estimates.*

Effective July 1, 2023, VSP's Community Policing Data Instructions and Technical Specifications Version 5.3 have revised value "R" for the Residency data element from "Resident of town/city/county of stop" to "Resident of city/county of stop." This change removes a degree of ambiguity from the residency coding of Town agency data – for the 2023 analysis, DCJS was unable to distinguish cases where a Town agency had marked "R" referring to town residency vs. county residency, which rendered the Residency field problematic for Town agency level analysis. With "town" removed as a possible descriptor in the "R" value, DCJS can more confidently categorize these cases as local county residents and follow the same benchmarking process as the City and County agencies accordingly.

A key assumption to this approach is that in the typical Virginia town, local county drivers are intermixed with the town's drivers enough that the town's driving population closely resembles its overall county's driving population. Anecdotally, feedback along these lines is what led to the Residency value change in the version 5.3 technical specifications. However, DCJS could consult with VSP, Town agencies reporting traffic stops[7], and

[7] For instance, DCJS could perform a survey of town agencies based on the 2023 CPA data to determine whether each agency used the "R" value to refer to county or town residents and what led to this decision.

academic/demographic institutions working in the field of criminal justice research to develop testing and pre-implementation thresholds to validate this assumption.

This recommendation does not require new legislative action or executive action beyond agency implementation.

Authority for Report

In 2020, Virginia policymakers enacted § 52-30.3 of the *Code of Virginia,* which directed the Virginia State Police to create a uniform statewide database (the Community Policing Report Database) to collect data on law-enforcement motor vehicle and investigatory stops, and on complaints alleging the use of excessive force. All Virginia state and local law enforcement agencies were required to report this data to the Virginia State Police.

In 2020, Virginia policymakers also enacted § 9.1-192, which directed the Virginia Department of Criminal Justice Services to obtain data contained in the Community Policing Reporting Database, analyze the data to determine the existence and prevalence of the practice of bias-based profiling and the prevalence of complaints alleging the use of excessive force, and prepare an annual report on the findings of this analysis.

§ 9.1-192. Community Policing Reporting Database; annual report

A. The Department shall periodically access the Community Policing Reporting Database, which is maintained by the Department of State Police in accordance with § 52-30.3, for the purposes of analyzing the data to determine the existence and prevalence of the practice of bias-based profiling and the prevalence of complaints alleging the use of excessive force. The Department shall maintain all records relating to the analysis, validation, and interpretation of such data. The Department may seek assistance in analyzing the data from any accredited public or private institution of higher education in the Commonwealth or from an independent body having the experience, staff expertise, and technical support capability to provide such assistance.

B. The Director shall annually report the findings and recommendations resulting from the analysis and interpretation of the data from the Community Policing Reporting Database to the Governor, the General Assembly, and the Attorney General beginning on or before July 1, 2021, and each July 1 thereafter. The report shall also include information regarding state or local law enforcement agencies that have failed or refused to report the required data to the Department of State Police as required by §§ 15.2-1609.10, 15.2-1722.1, and 52-30.2. A copy of the Director's report shall also be provided to each attorney for the Commonwealth of the county or city in which a reporting law-enforcement agency is located.

2020, c. 1165, § 9.1-191.

This report is the third report prepared by DCJS in response to the § 9.1-192 mandate.

DCJS wishes to acknowledge the efforts made by the Virginia State Police, other state law enforcement agencies, and the numerous large and small local police departments and sheriff's offices that worked to establish the traffic stop data collection and reporting system that made this report possible.

Introduction

The "Bias-Based Profiling" Issue

Traffic stops are perhaps the most frequent encounters between law enforcement and citizens. It is estimated that police stop more than 20 million motorists a year in the United States (Pierson et. al., 2020). Given the frequency of these encounters, they are likely to play a major role in shaping how citizens perceive law enforcement officers. As one author noted, "It is no exaggeration to say that traffic stops are the epicenter of police-citizen interactions. Perceptions about their fairness will go a long way toward shaping citizens' opinions of the police…." (Baumgartner, Epp and Shoub, 2018).

Discussions about fairness in police traffic stops often center around race and ethnicity – do police practice biased-based profiling when deciding who to stop, or in how drivers are treated during a stop?

Attempts to objectively assess the degree to which race or ethnicity plays a role in traffic stops, including legislatively mandated attempts to do so, are relatively new. Some of the earliest attempts grew out of legal action in the early and middle 1990s alleging that state police in New Jersey and Maryland were aggressively profiling and stopping Black and other minority drivers in efforts to interdict drug traffickers. As a result of these legal findings, data was collected in both states which showed that minority drivers were being stopped at much higher rates than White drivers. (Harris, D. 2020).

Publicity from the Maryland and New Jersey cases was a major impetus for the introduction of the federal Traffic Stops Statistics Act of 1997 (H.R. 118). The Act was intended to address the question of bias-based profiling – do law-enforcement officer disproportionately profile and stop Black and other minority drivers for traffic infractions as a pretext for investigating suspected other crimes? H.R. 118 passed the U.S. House of Representatives, but failed to receive the votes needed to pass the U.S. Senate. Attempts to revive the bill in later years also failed.

Although H.R. 118 failed in the U.S. Congress, the national conversation it spurred led various states to examine the bias-based profiling issue within their own borders, and multiple states to begin pass anti-racial-profiling legislation in the ensuing years.

Virginia Legislation

To address the issue of bias-based profiling in Virginia, the 2020 General Assembly session passed HB 1250, The Virginia Community Policing Act (the "Act" or the CPA). The Act, effective July 1, 2020, defines bias-based profiling, prohibits bias-based profiling by law enforcement agencies (LEAs), and requires LEAs to collect traffic stop data, including data on the racial/ethnic characteristics of the drivers stopped.

In addition to directing DCJS to publish an annual report analyzing traffic stop data (§ 9.1-192), the Act contained the following provisions:

§ 52-30.1. Definition.

For purposes of this chapter, unless the context requires a different meaning, "bias-based profiling" means actions of a law-enforcement officer that are based solely on the real or perceived race, ethnicity, age, gender, or any combination thereof, or other noncriminal characteristics of an individual, except when such characteristics are used in combination with other identifying factors in seeking to apprehend a suspect who matches a specific description.

§ 52-30.2. Prohibited practices; collection of data.

A. No State Police officer shall engage in bias-based profiling in the performance of his official duties.

B. State Police officers shall collect data pertaining to motor vehicle or investigatory stops to be reported into the Community Policing Reporting Database. State Police officers shall submit the data to their commanding officers, who shall forward it to the Superintendent of State Police.

C. Each time a law-enforcement officer or State Police officer stops a Individual or Driver of a motor vehicle, such officer shall collect the following data based on the officer's observation or information provided to the officer by the Individual or Driver: (i) the race, ethnicity, age, and gender of the person stopped; (ii) the reason for the stop; (iii) the location of the stop; (iv) whether a warning, written citation, or summons was issued or whether any person was arrested; (v) if a warning, written citation, or summons was issued or an arrest was made, the warning provided, violation charged, or crime charged; and (vi) whether the vehicle or any person was searched.

D. Each state and local law-enforcement agency shall collect the number of complaints the agency receives alleging the use of excessive force.

§ 52-30.3. (Effective until July 1, 2021) Community Policing Reporting Database established.

The Department of State Police shall develop and implement a uniform statewide database to collect motor vehicle and investigatory stop records, records of complaints alleging the use of excessive force, and data and information submitted by law-enforcement agencies pursuant to §§ 15.2-1609.10, 15.2-1722.1, and 52-30.2. The Department of State Police shall provide the Department of Criminal Justice Services with secure remote access to the database for the purposes of analyzing such data as required by subsection A of § 9.1-192.

§ 52-30.4. Reporting of state and local law-enforcement agencies required.

All state and local law-enforcement agencies shall collect the data specified in subsections C and D of § 52-30.2, and any other data as may be specified by the Department of State Police, on forms developed by the Department of State Police.

§ 15.2-1609.10. (Effective until July 1, 2021) Prohibited practices; collection of data.

A. No sheriff or deputy sheriff shall engage in bias-based profiling as defined in § 52-30.1 in the performance of his official duties.

B. The sheriff of every locality shall collect data pertaining to motor vehicle or investigative stops pursuant to § 52-30.2 and report such data to the Department of State Police for inclusion in the Community Policing Reporting Database established pursuant to § 52-30.3. The sheriff of the locality shall be responsible for forwarding the data to the Superintendent of State Police.

§ 15.2-1722.1. (Effective until July 1, 2021) Prohibited practices; collection of data.

A. No law-enforcement officer shall engage in bias-based profiling as defined in § 52-30.1 in the performance of his official duties.

B. The police force of every locality shall collect data pertaining to motor vehicle or investigatory stops pursuant to § 52-30.2 and report such data to the Department of State Police for inclusion in the Community Policing Reporting Database established pursuant to § 52-30.3. The chief of police of the locality shall be responsible for forwarding the data to the Superintendent of State Police.

In the summer of 2020, the General Assembly Special Session I added provisions to the CPA with SB 5030. Effective July 1, 2021, LEAs must also collect data similar to that above whenever a law enforcement officer stops and frisks a person based on reasonable suspicion, or temporarily detains a person during any other investigatory stop. For traffic and other investigatory stops, data must be collected on whether the person stopped spoke English, whether the law enforcement officer used physical force against any person, and whether any person used physical force against any officer(s) (see Appendix G for the SB 5030 language). LEAs were also required to post their traffic stop data on a publicly available website.

How the Data Was Collected and Reported

Virginia State Police (VSP) Data Collection System

Summary of VSP Traffic Stop Reporting Process

On July 1, 2022, the *Community Policing Data Collection Instructions and Technical Specifications Version 5.2* developed by Virginia State Police took effect for all Virginia law enforcement agencies (LEAs). As with previous versions, this document instructed LEAs on the data required to be reported, defined the data variables and codes to be used in reporting, and provided data file submission specifications.

The variables VSP identified to be reported under the Virginia Community Policing Act are shown in Table 1:

Table 1. Traffic Stop Data Reported Under the Community Policing Act, Effective July 1, 2022

Incident Details	*Subject Details*	*Additional Stop Details*
Record ID	Driver race	Persons searched
Stop date	Driver ethnicity	Vehicle searched
ORI (Originating Agency Identifier)	Driver age	Physical force by officer
Location	Driver gender	Physical force by subject
Jurisdiction Code	Driver English speaking (Y/N)	
Initial Reason for Stop	Driver residency (state or non-state)	
Person Type	Action taken	
	Type of violation	
	Specific violation	
	Virginia Crime Code (optional)	

How Law Enforcement Agencies Reported to VSP

Law enforcement agencies began collecting this year's data on July 1, 2022. Agencies collected and submitted traffic stop data for either a monthly or quarterly period via their computer-aided dispatch/records management systems, or via manual entry using an Excel spreadsheet, to the Criminal Justice Information Services Division's Data Analysis and Reporting Team (DART) within VSP. VSP instructed agencies to submit data at least quarterly on or by the 15th of the following month. Agencies may submit a monthly data file, but not any more frequently than each month.

VSP Quality Checks and Assistance to Reporting Agencies

Staff of VSP's DART reviewed all data submitted by agencies for correctness and adherence to VSP's technical specifications. When agencies had questions or issues about CPA data collection and reporting, DART staff worked with them to provide assistance to resolve these issues. Through this process, reporting improved over time. One major issue identified by VSP was that smaller LEAs with few resources had difficulty meeting the reporting requirements of the CPA.

DART has instituted a file review procedure in which agency submissions with large amounts of missing or invalid data elements are "rejected" and required resubmission once the data issues are fixed. Agencies only receive credit for such file submissions once their resubmissions meet approval standards. Because many quality issues in the traffic stop data can only be resolved through follow-up with the originating LEAs and officers involved, this resubmission process enables DCJS to preserve records that would have otherwise been excluded from analysis due to invalid data values.

VSP Data Dissemination

Although §§ 15.2-1609.10 and 15.2-1722.1 of the *Code of Virginia* did not require LEAs to publicly post their traffic stop data until July 1, 2021, some LEAs began to post their data in late 2020 and early 2021. Some agencies posted this data on their own agency websites, or though social media sites such as Facebook or Twitter.

To help agencies meet the public traffic stop data posting requirement, VSP worked with the Library of Virginia to enable agencies to meet their public reporting mandate by having VSP post their data to the Library's Open Data Portal. Through this agreement, VSP was able to begin publishing data for some agencies on the Open Data Portal beginning in May 2021 and is making this process available to all agencies. This will allow smaller agencies without their own capacity to post website data to meet the public reporting requirement.

The Community Policing Act data can be found at: https://data.virginia.gov/stories/s/rden-cz3h.

It should be noted that traffic stop data in this report will not match the data posted on the VSP Open Data Portal website because the numbers in the Portal are regularly updated by VSP, and their data includes records which were removed from the DCJS analysis dataset per the exclusion criteria. All data used for the analysis in this report was "frozen" on May 3, 2023. The DCJS 2023 Analysis Dataset used for this report (along with supplemental data dictionary and data user guide) will posted separately on the DCJS Research Center publications page at: https://www.dcjs.virginia.gov/research-center/publications-links.

Data on Complaints Alleging Use of Excessive Force

In addition to directing DCJS to analyze data on traffic stops, § 9.1-192 (as amended by HB 1250) directs DCJS to obtain data on complaints alleging the use of excessive force by law enforcement, and to analyze this data to examine the prevalence of excessive use of force. Use-of-force data is reported to VSP by local LEAs on VSP's SP-335 form.

Use-of-force data reporting under HB 1250 began on July 1, 2020. Appendix J provides a summary of the data that agencies have reported to VSP for the period from January 1, 2021–December 31, 2021. Due to the limited amount of data reported, no analysis of the data is presented in this report; only the numbers of complaints reported are shown. VSP and DCJS are examining future options for reporting use-of-force data.

How the Data Was Analyzed

Selection of Data to Analyze

The Virginia Department of Criminal Justice Services began receiving Virginia Community Policing Act data from Virginia State Police in August 2022 via a secure electronic file transfer process, and eventually received a total of 732,758 traffic stop records for the period from July 1, 2022 through March 31, 2023. DCJS and VSP then did additional work to review the records, resolve any data issues identified in the records, and identify any remaining records with issues that could affect the analysis and interpretation of the data.

During this review, some traffic stop records were excluded from the analysis dataset for various reasons. Stops made at checkpoints or performed as "Calls for Service" were eliminated because these stops are not discretionary (i.e., all vehicles passing through the checkpoint are stopped). Records were excluded if they were not "reported completely" (that is, if data elements in the record were not reported with valid data values as defined in *VSP Data Collection Instructions and Technical Specifications Version 5.2).* In order to preserve records where possible, and because the Residency field was only used for local benchmark analysis among City/County agencies, the exclusion criterion for Residency did not apply to Town or Other agencies in this first year of the data element's implementation.

After DCJS reviewed the remaining records, additional records were excluded from the analysis because some of the data variables needed for the analysis had no value coded (null values) or the values coded were outside the bounds of the allowable codes. Records removed for these reasons are listed in Table 2.

Table 2. Records Excluded from Traffic Stop Analysis

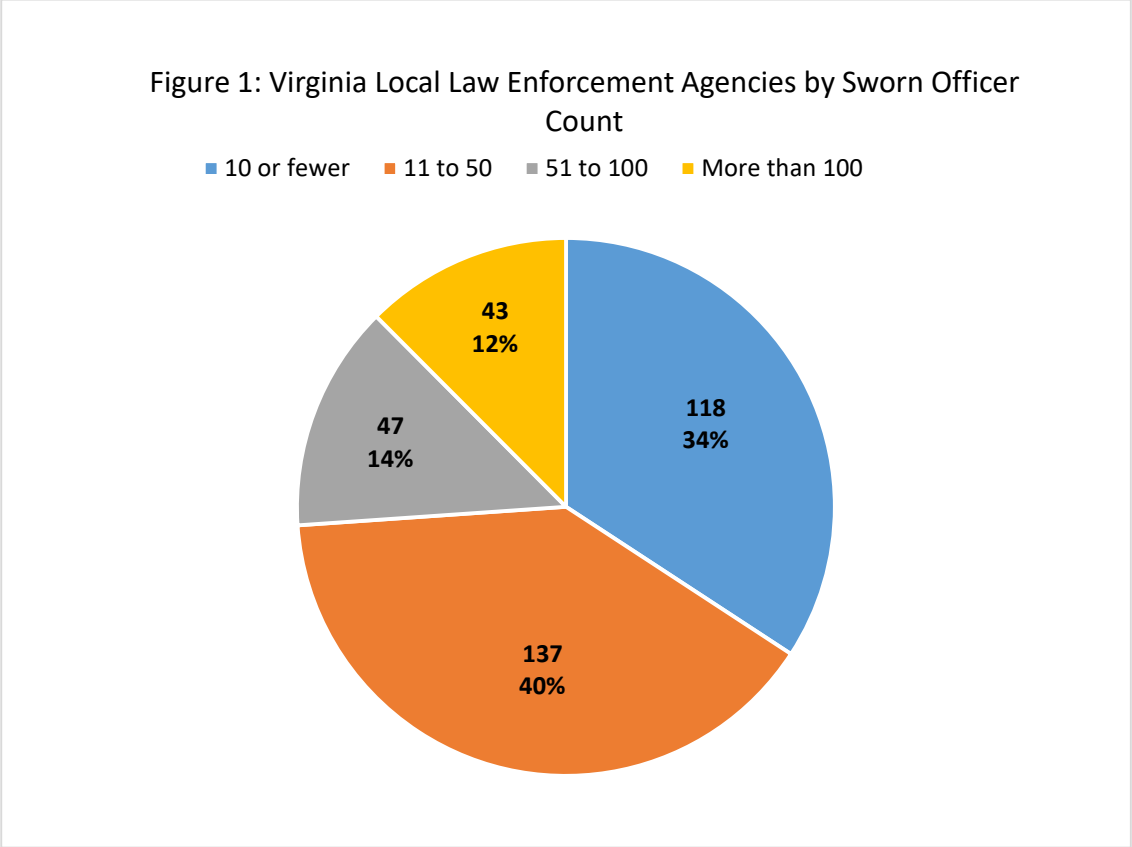
Data Element	*Criteria for DCJS Analysis Dataset*	*Number of records null or out of bounds*	*Total number of records to exclude*
Incident Date	Between 7/1/2022 and 3/31/2023	1 dated 05/11/2022 1 dated 06/01/2022	2
Agency ORI	Valid and not null	0	0
Reason for Stop	Values "E", "O", "S", or "T"	2 null; 15,797 "C"; 2,514 "P"	18,313
Age	15 or greater	17,616 age=0 (unknown); 630 age between 1 and 14	18,246
Person Type	Value "D"	3 null 4,385 "P"; 13,610 "F"	17,998
Race	Values "A", "B", "I", "W"; "U" included if Ethnicity is "H"	2 Null, 19,740 "U" (and Ethnicity not "H")	19,742
Gender	Values "F", "M", "O","U"	6 null	6
Action Taken	Values "W", "A", "S", or "N"	12 null	12
English Speaking	Values "Y" or "N"	18 null	18
Person Searched	Values "Y" or "N"	17 null	17
Vehicle Searched	Values "Y" or "N"	447 null	447
Officer Physical Force	Values "Y" or "N"	4 null	4
Subject Physical Force	Values "Y" or "N"	4 null	4
Record ID	Unique ID for each driver record	2,076 duplicates	2,076
Residency	Values "R," "V," or "O" if a City/County agency or VSP	615 Null and VSP/City/County Agency 17,171 "U" and VSP/City/County	17,786
Total Records Excluded from Analysis		82,371	

Note that because records may be excluded for more than one reason, the "Total number of records to exclude" column does not sum up to the overall number of records excluded (82,371).

Based on the records review described above, 82,371 of the original 732,758 records were excluded, leaving a final statewide analysis dataset containing a total of 650,387 records on drivers age 15 and older that were stopped by Virginia LEAs from July 1, 2022 through March 31, 2023. These records were based on the VSP CPA file finalized on May 3, 2023.

In addition to removing problematic traffic stop records from the analysis dataset, DCJS staff elected not to examine several of the variables contained in the remaining traffic stop records for this report. These variables include: Location, Violation Type, and Specific Violation.

Implementing the traffic stop data collection and reporting continues to be a challenge for Virginia's smaller LEAs, which struggle to provide the staffing, training, and equipment needed for the CPA data collection. This is because many of Virginia's local LEAs have small staffs and limited resources. As seen in Figure 1, 74% of local LEAs have 50 or fewer sworn officers, and 118 agencies – over one-third – have 10 or fewer officers.



Analysis Approach

The primary approach used in this analysis to look for possible evidence of bias-based profiling was as follows:

- For traffic stops, the percentage of drivers stopped in each racial/ethnic group was compared to the percentage of driving-age individuals in each racial/ethnic group. This comparison was made at the state and local level, including by individual law enforcement agencies when appropriate data was available. New to this year's analysis, subsets of local resident stops for City and County agencies and state resident stops for VSP and statewide findings are analyzed separately to compare with the census-derived benchmark estimates of the local and state driving populations.
- For events that occurred after a traffic stop was made, such as whether a search was conducted or an arrest was made, the comparison made was the percentage of drivers in each racial/ethnic group stopped for which each event such as a search or arrest occurred. These comparisons were also made at the state and local level, including by individual law enforcement agencies when appropriate data was available. These post-stop analysis methods are unchanged from prior years.
- To provide a standardized method for identifying and comparing disparities between different racial/ethnic groups in traffic stops and in the events that occurred after a stop was made, DCJS calculated a Disparity Index (DI). The DI indicates the degree to which members of any racial/ethnic group were stopped relative to the group's presence in the driving-age population, or the degree to which members of any group were involved in events that occurred after a stop was made. The DI value for each racial/ethnic group indicates whether drivers in that group were *equally represented or showed no overrepresentation, moderately overrepresented, or highly overrepresented* in traffic stops or post-stop events, relative to what would be expected if no disparities existed.
- The percentage comparisons and the DIs described above were calculated using several different methods, depending on the level of geographic area (i.e., statewide or by locality) and the type of law enforcement

agency being examined (VSP, city and county agencies, town agencies, etc.). The calculation method used depended primarily on the amount of information available about the racial/ethnic demographics of the resident populations in each area examined. Details of how the percentages and DIs were calculated are presented in each section of the report, and additional details about the data used and calculations made are presented in Appendix I.

Findings from Analysis of Statewide Traffic Stop Data

Overview of Statewide Data – All Driver Racial/Ethnic Groups Combined

The final statewide analysis dataset contained a total of 650,387 records for drivers age 15 and older that were stopped by all Virginia LEAs reporting usable Virginia Community Policing Act data for the period from July 1, 2022 through March 31, 2023. This nine-month date span is consistent with the range of the previous DCJS 2022 CPA report. Numbers of traffic stops may be greater in future reports because the current report is based on nine months of data; should the General Assembly amend CPA legislation to adopt a report deadline later in the calendar year, DCJS may analyze a full 12 months of fiscal year data in future reports.

Of the 650,387 traffic stops in the 2022–2023 dataset, 59.8% (389,067) were reported by LEAs that serve cities and counties, 26.4% (171,886) were reported by VSP, 11.2% (72,775) were reported by agencies serving towns, and 2.6% (16,659) were reported by other types of LEAs.

This section provides an overview of the statewide data (all drivers combined), including the reasons for the stops, numbers of searches made, and outcomes of the stops.

Reasons for Traffic Stops

Table 3 shows a breakout of the reasons for the 567,181 traffic stops statewide.

Table 3. Reasons for Traffic Stops, Virginia Statewide

	All Drivers (state and non-state residents)	
Reason for Stop	*Number of Stops*	*Percent of Stops*
Violation Total	639,321	98.3%
Traffic Violation	586,771	90.2%
Equipment Violation	52,550	8.1%
Investigative Total	11,066	1.7%
Other Non-consensual	8,075	1.2%
Terry Stop[8]	2,991	0.5%
Grand Total	650,387	100.0%

Over 98% (639,321) of all stops reported were made for traffic or equipment violations. The vast majority (90.2%) of these were for traffic violations; only 8.1% were for equipment violations. This finding is consistent with traffic stop data from last year's report, where violations were the majority of the reasons for stops.

[8] Terry stops are stops based on a reasonable suspicion of involvement in criminal activity.

Investigative stops made up only 1.7% of all stops. Among the investigative stops, other non-consensual reasons (stops for confirming or dispelling the suspicion of unlawful or unsafe activity or taking enforcement action in response to unlawful activity) made up 1.2% of all stops. Terry stops made up 0.5% of all driver stops.

Person and Vehicle Searches

Only 2.1% (13,406) of the 650,387 stops made resulted in law enforcement searching the driver and/or the vehicle. Table 4 shows a breakdown of searches made during the stops. Due to concerns about the completeness of passenger data in this year's CPA data, data on passenger searches has not been included.

Table 4. Driver and Vehicle Searches, Virginia Statewide

	All Drivers (state and non-state residents)	
	Number of Stops	*Percent of Stops*
No Search	636,981	97.9%
Driver, vehicle, or both searched	13,406	2.1%
Grand Total	650,387	100.0%

Outcomes of Stops

Table 5 provides a breakdown of the outcomes for the 650,387 traffic stops.

Table 5. Outcome of Driver Stops, Virginia Statewide

	All Drivers (state and non-state residents)	
	Number of Stops	*Percent of Stops*
Driver citation/summons issued	404,841	62.2%
Warning issued to driver	223,413	34.4%
No enforcement action to driver	14,383	2.2%
Driver arrested	7,750	1.2%
Grand Total	650,387	100.0%

The most frequent outcome of a stop was issuing a citation or summons (62.2%, or 404,841 stops). A warning was issued in 34.4% (223,413) of the stops. In only 1.2% of the stops was a driver arrested.

Demographics of Drivers Stopped

Unless stated otherwise, percentages based on population used in this report refer to the Virginia population age 15 and above (generally the legal driving age in Virginia). A very small number of drivers stopped were below age 15, and these stops were excluded from the analysis as described in the previous section of this report.

Population figures used in this report are from Vintage 2021 post-Census estimates of the resident population of the United States published by the Census Bureau Population Division. Racial/ethnic categories used in this report are based on legacy U.S. Census definitions of four racial groups. The Black category used in this report includes Black or African American; the American Indian category includes American Indians or Alaskan Native; and the Asian category includes Asian, Native Hawaiian, or Other Pacific Islanders. The Hispanic category can include any

race with Hispanic origin. More information about the population data used for the calculations in this report can be found in Appendix I.

Table 6 shows a breakdown of the race/ethnicity of the 650,387 drivers stopped by Virginia law enforcement (507,327 state resident stops) from July 1, 2022 through March 31, 2023. Counts for both drivers identified as state residents and total all driver count are shown for context. Local resident stop counts by race/ethnicity for each city and county agency are shown in the stopped driver totals in Appendix C.

Table 6. Race/Ethnicity of Drivers Stopped, Virginia Statewide by State Resident and Total Count

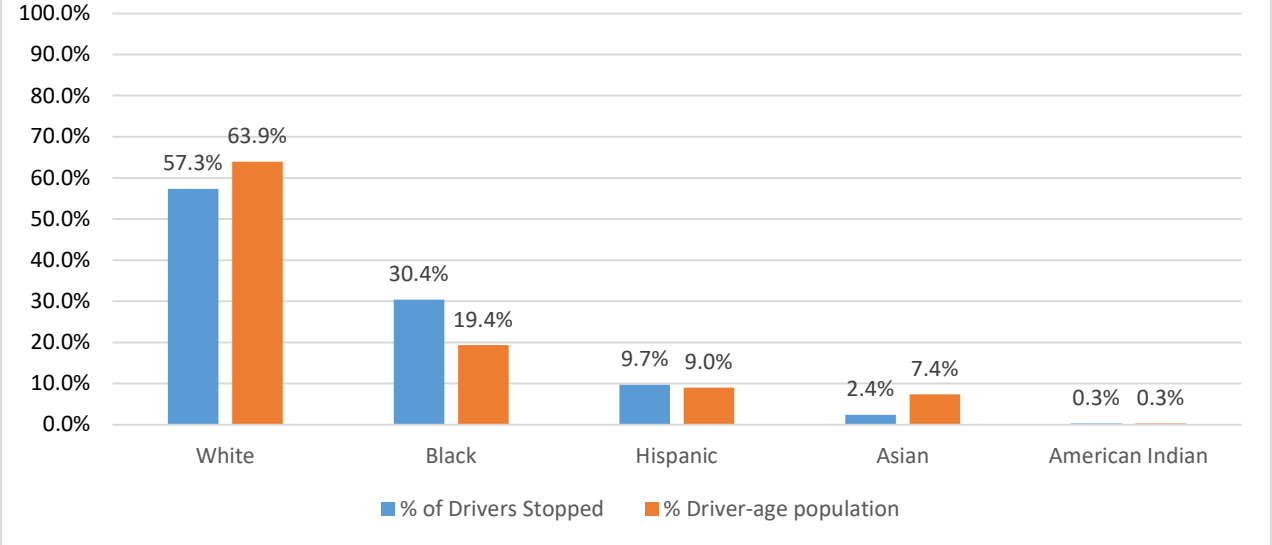
Race/Ethnicity	*Number (State Resident only)*	*Percent (State Resident only)*	*Number (State and Non-State Residents)*	*Percent (State and Non-State Residents)*
White	290,643	57.3%	369,363	56.8%
Black	154,006	30.4%	197,031	30.3%
Hispanic (any race)	49,019	9.7%	66,261	10.2%
Asian	11,939	2.4%	15,501	2.4%
American Indian	1,720	0.3%	2,231	0.3%
Grand Total	507,327	100.0%	650,387	100.0%

White drivers made up more than half (56.8%) of all drivers stopped statewide. Black drivers made up 30.3%, Hispanic drivers made up 10.2%, Asian drivers made up 2.4%, and American Indian drivers made up 0.3% of the drivers.

Among state residents, White drivers made up 57.3% of all drivers stopped statewide. Black drivers made up 30.4%, Hispanic drivers made up 9.7%, Asian drivers made up 2.4%, and American Indian drivers made up 0.3% of the drivers.

Figure 2 compares the percentage of each racial/ethnic group among Virginia resident drivers stopped to the percentage of each racial/ethnic group in Virginia's driving-age population (age 15+).

Figure 2: Percent of Virginia Resident Drivers Stopped vs Estimated Percent of Driver-Age Population, Virginia Statewide



As can be seen in Figure 2, although only 19.4% of Virginia's driving-age population is Black, 30.4% of the state resident drivers stopped by law enforcement were Black. Hispanic drivers were also overrepresented relative to their share of the population (9.7% and 9.0%, respectively). White and Asian resident drivers were stopped at rates lower than their share of the driving-age population.

English Speaking Status of Subjects

Table 7. English Speaking Status of Driver, Virginia Statewide		
English Speaking Driver	*Number*	*Percent*
Yes	633,671	97.4%
No	16,716	2.6%
Grand Total	650,387	100.0%

The majority of drivers stopped (97.4%) spoke English. 16,716 drivers (2.6%) were reported to not speak English.

Use of Force

Table 8. Use of Physical Force		
Type of Force	*Number of Stops*	*Percent of Stops With Force Reported*
Officer Against Driver Only	362	39.5%
Driver Against Officer Only	285	31.1%
Both	269	29.4%
Any Physical Force	916	100.0%

The CPA data includes fields on whether an officer used physical force against a subject, or a subject used force against an officer. Instances of either force types constituted less than 0.2% of all traffic stops (916 cases). Use of force counts by race/ethnicity can be found in the statewide summary Tables 13 and 14, and the agency tables in Appendices B–E.

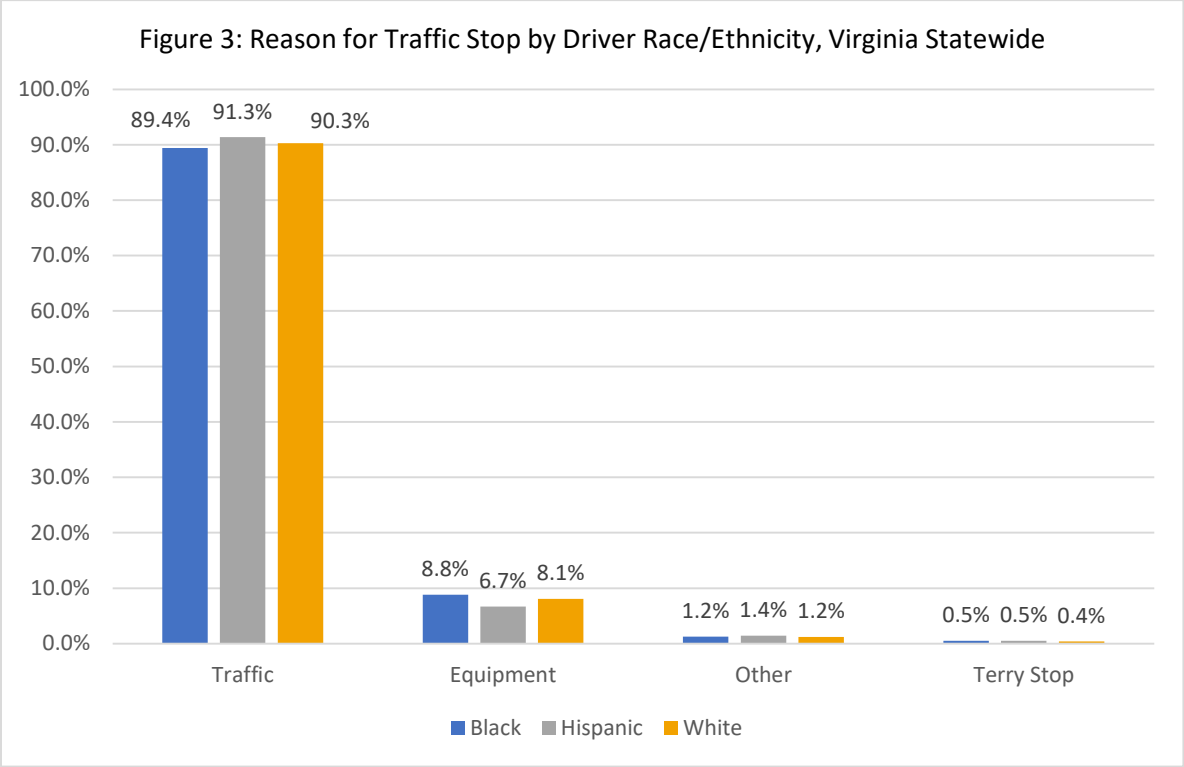
Residency

Table 9. Driver Residency Count by Agency Type						
Residency Type	*City/County*	*Other*	*VSP*	*Town*	*All Agencies Total*	*Percent Total*
Out of State Resident (O)	75,515	4,365	45,530	16,604	142,014	21.8%
Resident of town/city/county of stop (R)	172,875	6,330	75,566	25,446	280,217	43.1%
Blank or Unknown (U)	-	382	-	664	1,046	0.2%
Other Virginia Jurisdiction Resident (V)	140,677	5,582	50,790	30,061	227,110	34.9%
Grand Total	389,067	16,659	171,886	72,775	650,387	100.0%

New to this year's analysis, the Residency field states whether each stopped driver is a Virginia and local resident. 43.1% of drivers were identified as residents of the town, city, or county in which the stop occurred, 34.9% of drivers were reported as Virginia residents from another jurisdiction, and 21.8% were reported as out of state.

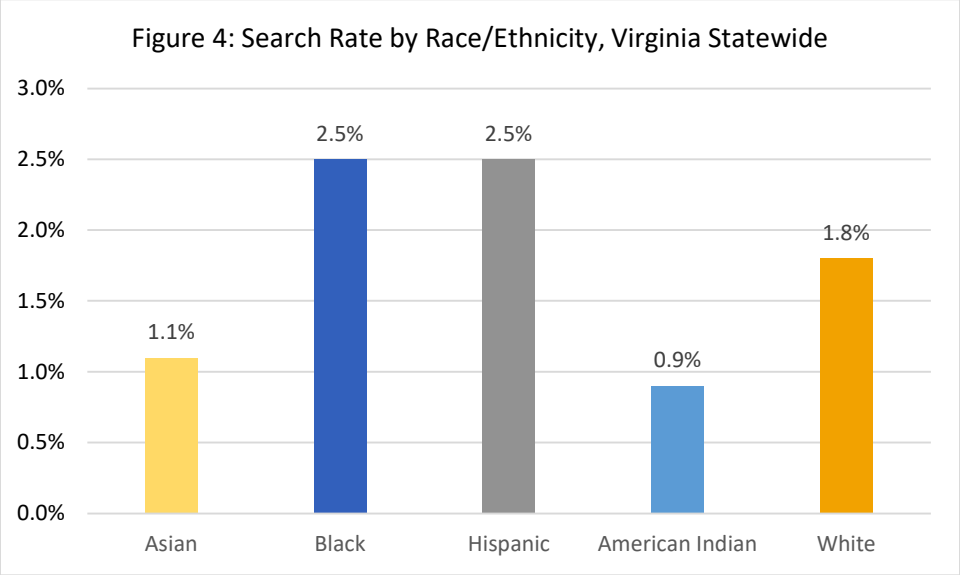
Reason for Traffic Stops, by Driver Race/Ethnicity

Figure 3 presents the reasons for traffic stops, by driver race/ethnicity. American Indian and Asian drivers were excluded from the figure due to the small numbers in each stop category.



Traffic violations were the overwhelming reason for driver stops among all racial/ethnic groups. Black drivers were slightly less likely (89.4%) to be stopped for a traffic violation than White (90.3%) or Hispanic (91.3%) drivers. On the other hand, Black drivers were slightly more likely (8.8%) to be stopped for equipment violations than White (8.1%) or Hispanic (6.7%) drivers.

Searches Made During Traffic Stops, by Driver Race/Ethnicity

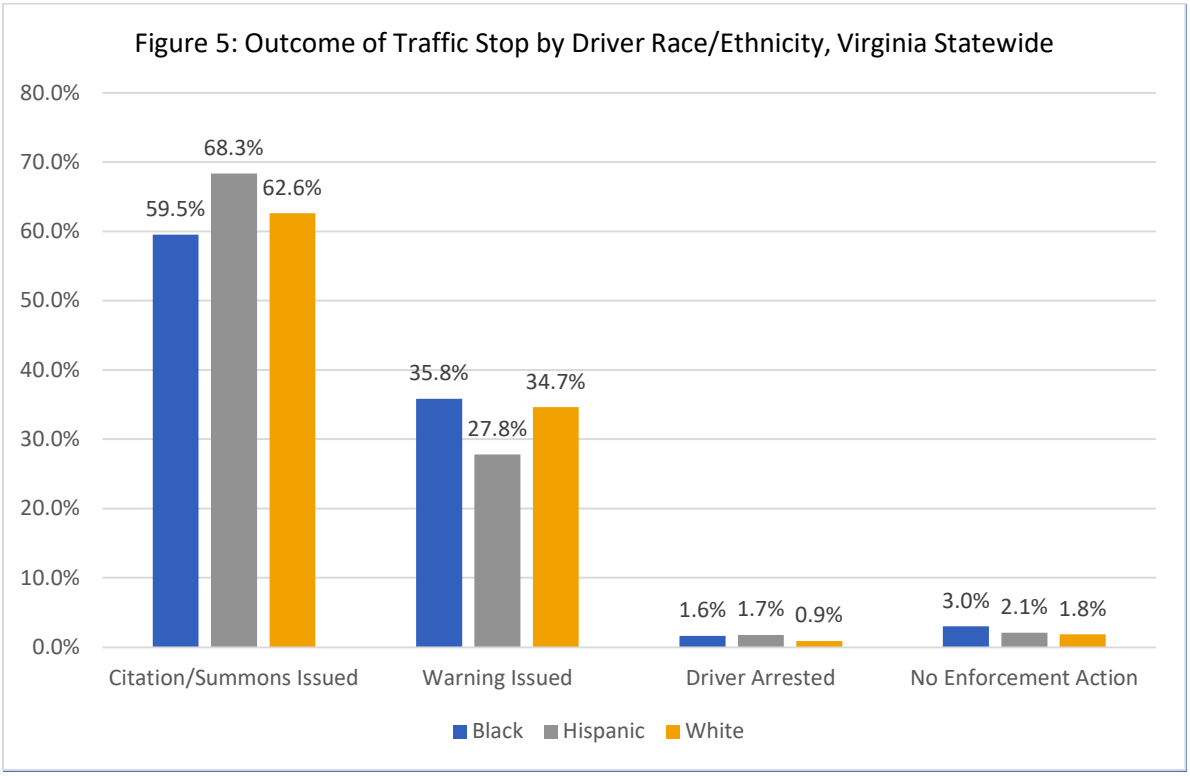


Given that a certain number of drivers are stopped, how likely is it that the stop will subsequently result in a search of the driver and/or the vehicle? Figure 4 shows the percentage of drivers in each racial/ethnic group for which a search was conducted. "Search" means the driver and/or the vehicle was searched.

Overall, searches of drivers and/or vehicles were rare following traffic stops. Only 2.1% of all driver stops resulted in such a search. As can be seen, Black and Hispanic drivers who were stopped were searched at higher rates than White drivers. 1.8% (6,531 out of 369,363) of stops of White drivers resulted in a search, whereas 2.5% (5,018 out of 197,031) of stops of Black drivers and 2.5% (1,689 out of 66,261) of Hispanic drivers resulted in a search. American Indian and Asian drivers who were stopped were less likely than White drivers to have a search conducted.

Outcome of Traffic Stops, by Driver Race/Ethnicity

Figure 5 presents the outcome of traffic stops, by driver race/ethnicity. Outcomes were coded based on the most serious outcome of the stop, even though more than one outcome was possible for a stop. American Indian and Asian drivers were excluded from the figure due to the small numbers in each stop category.



Issuance of a citation or summons was the most likely outcome of a traffic stop, regardless of driver race/ethnicity. Warnings were the second most likely outcome for all drivers (roughly 28% to 36% of the time) across all driver race/ethnicities.

No enforcement action was taken in 1.8% of White driver stops, 2.1% of Hispanic driver stops, and 3.0% of Black driver stops.

Overall, only about 1.5% of driver stops resulted in an arrest of the driver. Although an arrest occurred in 0.9% of White driver stops, an arrest occurred in 1.6% of Black driver stops and 1.7% of Hispanic driver stops.

Driver Gender, by Race/Ethnicity

Table 10 presents the reported gender of all drivers stopped, by race/ethnicity.

Table 10. Gender of Drivers Stopped, by Race/Ethnicity, Virginia Statewide						
	White		*Black*		*Hispanic (any race)*	
	# of stops	% of stops	# of stops	% of stops	# of stops	% of stops
Male	228,413	61.8%	121,221	61.5%	48,570	73.3%
Female	140,756	38.1%	75,722	38.4%	17,659	26.7%
Other/ Unknown	194	0.1%	88	0.0%	32	0.0%
Total	369,363	100.0%	197,031	100.0%	66,261	100.0%
	American Indian		*Asian*		*Total*	
	# of stops	% of stops	# of stops	% of stops	# of stops	% of stops
Male	1,665	74.6%	10,281	66.3%	410,150	63.1%
Female	562	25.2%	5,216	33.6%	239,915	36.9%
Other/ Unknown	4	0.2%	4	0.0%	322	0.0%
Total	2,231	100.0%	15,501	100.0%	650,387	100.0%

Males made up the majority of drivers stopped, regardless of race/ethnicity. The percentage of male drivers stopped was about equal for both White (61.8%) and Black (61.5%) drivers. Males made up a somewhat higher percentage of Hispanic (73.3%) and American Indian (74.6%) drivers stopped. Males made up 66.3% of Asian drivers stopped.

Driver Age, by Driver Race/Ethnicity

Table 11 presents the age of all drivers stopped, by race/ethnicity.

Table 11. Age of Drivers Stopped, by Race/Ethnicity, Virginia Statewide						
	White		*Black*		*Hispanic (any race)*	
	# of stops	% of stops	# of stops	% of stops	# of stops	% of stops
15 to 24	84,978	23.0%	44,559	22.6%	18,789	28.4%
25 to 34	89,480	24.2%	61,518	31.2%	19,754	29.8%
35 to 44	70,676	19.1%	40,385	20.5%	14,561	22.0%
45 to 54	53,718	14.5%	25,338	12.9%	8,421	12.7%
55 to 64	42,261	11.4%	17,279	8.8%	3,639	5.5%
65 and older	28,250	7.6%	7,952	4.0%	1,097	1.7%
Total	369,363	100.0%	197,031	100.0%	66,261	100.0%
	American Indian		*Asian*		*Total*	
	# of stops	% of stops	# of stops	% of stops	# of stops	% of stops
15 to 24	429	19.2%	3,404	22.0%	152,159	23.4%
25 to 34	594	26.6%	3,764	24.3%	175,110	26.9%
35 to 44	584	26.2%	3,127	20.2%	129,333	19.9%
45 to 54	368	16.5%	2,596	16.7%	90,441	13.9%
55 to 64	187	8.4%	1,658	10.7%	65,024	10.0%
65 and older	69	3.1%	952	6.1%	38,320	5.9%
Total	2,231	100.0%	15,501	100.0%	650,387	100.0%

Younger drivers (age 15–34) made up 47.2% of White drivers stopped, but 53.8% of Black drivers and 58.2% of Hispanic drivers stopped. White and Asian drivers had a higher percentage of drivers over age 55 stopped.

Statewide Disparity Index (DI)

To provide a standardized method for comparing disparities between different racial/ethnic groups in traffic stops, DCJS calculated a Disparity Index (DI). For traffic stops, the DI indicates the degree to which members of any racial/ethnic group were stopped relative to the group's prevalence in the driving-age population.

The DI for each racial/ethnic group was calculated as:

$$\frac{\text{Group's percentage of all stops reported by agency}}{\text{Group's percentage of population age 15+ statewide or in locality served by agency}}$$

With the addition of the Residency data element and the ability to identify state and local residents, separate stop DIs were calculated for both state and local residents. The calculation is the same as above, except that stops are filtered to the residency group of interest (state or local). Due to limitations in interpreting and benchmarking the residency data element, local resident analyses were performed for City and County agencies only.

The local resident DI for each racial/ethnic group was calculated as:

$$\frac{\text{Group's percentage of all local resident stops reported by (City/County) agency}}{\text{Group's percentage of population age 15+ in locality served by (City/County) agency}}$$

The state resident DI for each racial/ethnic group was calculated as:

$$\frac{\text{Group's percentage of all state resident stops reported statewide}}{\text{Group's percentage of population age 15+ statewide}}$$

DIs of with a value of 1.0 or less for a group indicate that stops for that group occurred at a rate that is less than or equal to that group's share of the driving-age population. DIs with a value greater than 1.0 indicate that stops for that group occurred at a rate that is higher than that group's share of the driving-age population. The interpretation of different DI levels is shown in Table 12.

Table 12. Interpretation of Driver Stop DIs

DI Range	Traffic Stop DI Interpretation Used in Report
1.0 or less	Driver group had *no overrepresentation* or is *underrepresented* in stops when compared to its proportion of the population age 15+
1.1 – 1.9	Driver group had *moderate overrepresentation* in stops compared to its proportion of the population age 15+
2.0 or higher	Driver group had *high overrepresentation* in stops compared to its proportion of the population age 15+

Note: The DI descriptors above (under-, moderate-, and high overrepresentation) are not based on tests of statistical significance. They are used merely as descriptors to differentiate between the levels of disparity observed. Some agencies had calculated driver stop DIs of 3.0 and higher, indicating very high overrepresentation for a driver group in stops. These higher DIs should be interpreted cautiously, especially among the "all drivers" stop DIs, because they may be skewed by large differences between the group's resident population and the number of stopped drivers in the group who are transient drivers and are not part of the resident population. Also, DIs of 3.0 or higher may be the result of very low population percentages coupled with a very low number of stops.

In addition to calculating a DI to indicate the degree to which drivers in different racial/ethnic groups were stopped, DCJS also calculated a separate DI to indicate the degree to which drivers in each group were involved in events following traffic stops, including the reason for stops, whether persons and/or vehicles were searched, and actions taken towards drivers (summons/citation issued, warning given, arrest, etc.). The DI for events occurring after the stop is calculated in a different manner than the DI is calculated for the stop itself.

The DI for events occurring after the stop for each racial/ethnic group was calculated as:

$$\frac{\text{Group's percentage for each stop reason, search, or stop outcome reported}}{\text{Group's percentage of all stops reported by agency}}$$

DIs for events occurring after the stop, unlike those calculated for whether a stop occurred in the first place, were not calculated using the group's percentage of the resident driving-age population but were calculated using the percentage of drivers stopped by a given law enforcement agency in each group. Because these events are not measured against the census-derived data, the "all drivers stopped" pool of drivers is the appropriate group to use for these DIs rather than state or local resident filters.

Statewide DIs for Virginia resident drivers stopped, and for events following the stop, for each driver racial/ethnic group are displayed in Table 13.

To illustrate how the data is presented in Table 13, the "Population Demographics" section of Table 13 shows that Black drivers made up 19.4% of Virginia's driving-age population, yet in the "State Resident Drivers Stopped" section of Table 13, they made up 30.4% of the state resident drivers stopped in Virginia. The comparison of the percentage of Black state resident drivers stopped to the percentage of Virginia's statewide Black driving-age population produces a traffic stop DI of 1.6 for Black state resident drivers statewide (30.4%/19.4% = 1.6).

Statewide DIs for all drivers stopped (Virginia residents and non-residents) and for events following the stop, for each driver's racial/ethnic group, are displayed in Table 14. To illustrate how the data is presented in Table 14, the "Drivers Stopped" section of the table shows that Black drivers made up 30.3% of all drivers stopped in Virginia, but the "Outcome of Stop" section shows that they made up 40.8% of the drivers arrested in Virginia. The comparison of the percentage of Black drivers stopped to the percentage of Black drivers arrested produces an arrest DI of 1.3 for all Black drivers statewide (40.8%/30.3% = 1.3).

An unusually high traffic stop DI can occur when a racial or ethnic group comprises a very small percentage of a locality's driving-age population, but also comprises a relatively high percentage of its traffic stops. This is especially true when a local LEA reports a small number of stops to begin with. For example, the Charlotte County Sheriff's Office had a notably high driver stop DI of 6.6 for local resident Asian drivers in this report. This group made up only 0.35% of the jurisdiction's total driving-age population, but it made up 2.33% of the local resident drivers stopped by the LEA (with a single stop). In this case, the LEA reported only 43 local resident traffic stops, 1 of which involved an Asian driver. The driver stop DI was therefore calculated as:

$$\frac{\text{2.33\% (the percentage of local resident stops that involved Asian drivers)}}{\text{0.35\% (the percentage of driving-age population that was Asian)}} = 6.6$$

2.33% is disproportionately higher than 0.35%, resulting in the very high DI of 6.6 even though the actual raw numbers involved are notably small. In this case, the DI should not be considered meaningful because of the small number of stops involved.

Importantly, the DI does not tell us the reason(s) why members of a particular racial/ethnic group are being stopped at a higher or lower rate than their presence in the population. The DI simply tells us that members of a group are being disproportionately stopped compared to their presence in the population. It cannot tell us the motivations of the officers making the stops. (See the section "Interpretation of Findings" for a further explanation of why disparities in numbers of stops or in the outcomes of traffic stops cannot automatically be assumed to be evidence of bias-based profiling.)

Note on Categorizing DIs as "No Overrepresentation"

In the DCJS 2021 CPA report, agency DIs with no cases for outcomes of interest among the target group were excluded from summary statistics which used the DI ranges and interpretations in Table 11 of the report. For instance, if an agency had 500 stops of Black drivers, zero searches of Black drivers, and 23 total driver searches, the Black search DI for that agency would technically be 1.0 or less (0.0), but the DI would not have been included in the "no overrepresentation" group. For the 2022 report onward, such DIs are included under the "no overrepresentation" statistics *only if the agency reported stops for the target racial/ethnic group*. While DIs with no outcomes of interest do not allow for a sense of scale in traffic stop patterns (e.g., "how many Black driver stops would it take for the agency to perform a search?"), DCJS has reasoned that because the agency had a pool of stopped drivers to potentially search/arrest and did not perform any searches/arrests within the target group, "no overrepresentation" is a suitable Disparity Index descriptor for these scenarios. Following the same logic, stop DIs with no stops of the target group are now categorized as "no overrepresentation" because the agency had a pool of Black, Asian, etc. drivers in their jurisdiction to potentially stop. Search and arrest DIs for racial/ethnic groups in which the agency performed no stops of said group will continue to be excluded from summary statistics and the "no overrepresentation" descriptor for in this report.

With this change in categorization, percentages of "no overrepresentation" agency DIs are much higher than in the 2021 report. It is important to note that much of this increase is due to the report's change in methodology rather than a change in real-world traffic stop practices. Not all "no overrepresentation" DIs will reflect a raw indication of underrepresentation (if an agency had a single American Indian driver stop, the probability is high that the single stop would not result in a search), but they all reflect instances where there is no preliminary indication of overrepresentation in the data given the agency's potential to stop/search/arrest the target group.

Note: For Tables 13 and 14, read percentages in rows: Total = 100% and percentage of each racial group represented is described across that row.

For more information about Disparity Indexes, see Table 12. 1.0 or less = no overrepresentation (or is underrepresented); 1.1 – 1.9 = moderate overrepresentation; 2.0 or more = high overrepresentation

Table 13: State Residents Only Traffic Stop Report: Virginia Statewide
Stops Dated July 1, 2022-March 31, 2023

	Total	White	Black-African American	Hispanic (any race)	American Indian or Alaska Native	Asian-Other Pacific Islander
Population Demographics						
Number Age 15+ in CY2021 Population	6,883,904	4,400,752	1,334,220	621,839	19,875	507,218
Percent Age 15+ in CY2021 Population	100.00%	63.93%	19.38%	9.03%	0.29%	7.37%
State Resident Drivers Stopped						
Number of Drivers Age 15+ Stopped	507,327	290,643	154,006	49,019	1,720	11,939
Percent of Drivers Age 15+ Stopped	100.00%	57.29%	30.36%	9.66%	0.34%	2.35%
Resident Disparity Index		0.9	1.6	1.1	1.2	0.3

	Total	White	Black-African American	Hispanic (any race)	American Indian or Alaska Native	Asian-Other Pacific Islander
Reason for Stop - State Residents						
Number Stopped for Traffic Violation	449,371	257,526	135,020	44,079	1,580	11,166
Percent Stopped for Traffic Violation	100.00%	57.31%	30.05%	9.81%	0.35%	2.48%
Disparity Index		1.0	1.0	1.0	1.0	1.1
Number Stopped for Equipment Violation	48,476	27,831	16,044	3,864	115	622
Percent Stopped for Equipment Violation	100.00%	57.41%	33.10%	7.97%	0.24%	1.28%
Disparity Index		1.0	1.1	0.8	0.7	0.5
Number Stopped for Terry Stop	2,578	1,356	873	289	6	54
Percent Stopped for Terry Stop	100.00%	52.60%	33.86%	11.21%	0.23%	2.09%
Disparity Index		0.9	1.1	1.2	0.7	0.9
Number Stopped for Other Reason	6,902	3,930	2,069	787	19	97
Percent Stopped for Other Reason	100.00%	56.94%	29.98%	11.40%	0.28%	1.41%
Disparity Index		1.0	1.0	1.2	0.8	0.6
Outcome of Stop - State Residents						
Number of Stops with Warning Issued	188,116	109,366	59,181	14,406	613	4,550
Percent of Stops with Warning Issued	100.00%	58.14%	31.46%	7.66%	0.33%	2.42%
Disparity Index		1.0	1.0	0.8	1.0	1.0
Number of Stops with Citation/Summons issued	299,731	172,376	86,700	32,496	1,056	7,103
Percent of Stops with Citation/Summons issued	100.00%	57.51%	28.93%	10.84%	0.35%	2.37%
Disparity Index		1.0	1.0	1.1	1.0	1.0
Number of Stops with Driver Arrested	7,014	3,068	2,866	978	12	90
Percent of Stops with Driver Arrested	100.00%	43.74%	40.86%	13.94%	0.17%	1.28%
Disparity Index		0.8	1.3	1.4	0.5	0.5
Number of Stops with No Enforcement Action	12,466	5,833	5,259	1,139	39	196
Percent of Stops with No Enforcement Action	100.00%	46.79%	42.19%	9.14%	0.31%	1.57%
Disparity Index		0.8	1.4	0.9	0.9	0.7
Additional Details of Stop - State Residents						
Number of Stops with Driver or Vehicle Search	12,011	5,969	4,529	1,394	17	102
Percent of Stops with Driver or Vehicle Search	100.00%	49.70%	37.71%	11.61%	0.14%	0.85%
Disparity Index		0.9	1.2	1.2	0.4	0.4
Number of Stops with Office Force Against Subject	555	287	199	60	2	7
Percent of Stops with Office Force Against Subject	100.00%	51.71%	35.86%	10.81%	0.36%	1.26%
Disparity Index		0.9	1.2	1.1	1.1	0.5
Number of Stops with Subject Force Against Officer	484	256	172	43	3	10
Percent of Stops with Subject Force Against Officer	100.00%	52.89%	35.54%	8.88%	0.62%	2.07%
Disparity Index		0.9	1.2	0.9	1.8	0.9

Data sources:
Community Policing Data Collection, Virginia Department of State Police, May 2023.
Vintage 2021 postcensal estimates of the resident population of the United States (July 1, 2021), by single-year of age, race, Hispanic origin, and sex. Available from: https://www2.census.gov/programs-surveys/popest/datasets/2020-2021/state/asrh/sc-est2021-alldata6.csv as of May 15 2023.
Prepared by: Virginia Department of Criminal Justice Services Research Center, July 1 2023.
Search can involve driver, vehicle, or both.
The disparity index for small numbers of stops and small populations should be interpreted with caution because of the small numbers involved.

Table 14: All Drivers (Virginia Resident and Non-Resident) Traffic Stop Report: Virginia Statewide

Stops Dated July 1, 2022-March 31, 2023

	Total	White	Black-African American	Hispanic (any race)	American Indian or Alaska Native	Asian-Other Pacific Islander
Population Demographics						
Number Age 15+ in CY2021 Population	6,883,904	4,400,752	1,334,220	621,839	19,875	507,218
Percent Age 15+ in CY2021 Population	100.00%	63.93%	19.38%	9.03%	0.29%	7.37%
Drivers Stopped						
Number of Drivers Age 15+ Stopped	650,387	369,363	197,031	66,261	2,231	15,501
Percent of Drivers Age 15+ Stopped	100.00%	56.79%	30.29%	10.19%	0.34%	2.38%
Disparity Index		0.9	1.6	1.1	1.2	0.3
Reason for Stop						
Number Stopped for Traffic Violation	586,771	333,353	176,181	60,528	2,079	14,630
Percent Stopped for Traffic Violation	100.00%	56.81%	30.03%	10.32%	0.35%	2.49%
Disparity Index		1.0	1.0	1.0	1.0	1.0
Number Stopped for Equipment Violation	52,550	29,887	17,405	4,436	124	698
Percent Stopped for Equipment Violation	100.00%	56.87%	33.12%	8.44%	0.24%	1.33%
Disparity Index		1.0	1.1	0.8	0.7	0.6
Number Stopped for Terry Stop	2,991	1,572	1,006	343	6	64
Percent Stopped for Terry Stop	100.00%	52.56%	33.63%	11.47%	0.20%	2.14%
Disparity Index		0.9	1.1	1.1	0.6	0.9
Number Stopped for Other Reason	8,075	4,551	2,439	954	22	109
Percent Stopped for Other Reason	100.00%	56.36%	30.20%	11.81%	0.27%	1.35%
Disparity Index		1.0	1.0	1.2	0.8	0.6
Outcome of Stop						
Number of Stops with Warning Issued	223,413	128,009	70,624	18,432	738	5,610
Percent of Stops with Warning Issued	100.00%	57.30%	31.61%	8.25%	0.33%	2.51%
Disparity Index		1.0	1.0	0.8	1.0	1.1
Number of Stops with Citation/Summons issued	404,841	231,245	117,327	45,286	1,431	9,552
Percent of Stops with Citation/Summons issued	100.00%	57.12%	28.98%	11.19%	0.35%	2.36%
Disparity Index		1.0	1.0	1.1	1.0	1.0
Number of Stops with Driver Arrested	7,750	3,316	3,159	1,152	14	109
Percent of Stops with Driver Arrested	100.00%	42.79%	40.76%	14.86%	0.18%	1.41%
Disparity Index		0.8	1.3	1.5	0.5	0.6
Number of Stops with No Enforcement Action	14,383	6,793	5,921	1,391	48	230
Percent of Stops with No Enforcement Action	100.00%	47.23%	41.17%	9.67%	0.33%	1.60%
Disparity Index		0.8	1.4	0.9	1.0	0.7
Additional Details of Stop						
Number of Stops with Driver or Vehicle Search	13,406	6,531	5,018	1,689	19	149
Percent of Stops with Driver or Vehicle Search	100.00%	48.72%	37.43%	12.60%	0.14%	1.11%
Disparity Index		0.9	1.2	1.2	0.4	0.5
Number of Stops with Office Force Against Subject	631	320	229	70	2	10
Percent of Stops with Office Force Against Subject	100.00%	50.71%	36.29%	11.09%	0.32%	1.58%
Disparity Index		0.9	1.2	1.1	0.9	0.7
Number of Stops with Subject Force Against Officer	554	289	196	54	3	12
Percent of Stops with Subject Force Against Officer	100.00%	52.17%	35.38%	9.75%	0.54%	2.17%
Disparity Index		0.9	1.2	1.0	1.6	0.9

Data sources:

Community Policing Data Collection, Virginia Department of State Police, May 2023.

Vintage 2021 postcensal estimates of the resident population of the United States (July 1, 2021), by single year of age, race, Hispanic origin, and sex. Available from: https://www2.census.gov/programs-surveys/popest/datasets/2020-2021/state/asrh/sc-est2021-alldata6.csv as of May 15, 2023.

Prepared by: Virginia Department of Criminal Justice Services Research Center, July 1, 2023.

Search can involve driver, vehicle, or both.

The disparity index for small numbers of stops and small populations should be interpreted with caution because of the small numbers involved.

Summary of Statewide Race/Ethnicity Analysis

A review of the statewide data for July 2022–March 2023 shows that Black and Hispanic drivers were disproportionately stopped and tended to have higher rates of search and arrest when they were stopped, compared to White, American Indian, or Asian drivers in Virginia. This finding is similar to the finding in the DCJS 2022 report.

- During the 2023 reporting period, Black drivers were stopped at higher rates than White drivers. Although only 19.4% of Virginia's driving-age population in the dataset was Black, 30.4% of state resident drivers stopped were Black. Among all drivers stopped regardless of residency, 30.3% were black.
  - In 2022, 19.5% of Virginia's driving-age population in the dataset was Black, while 30.8% of drivers stopped were Black.
- (Of all drivers stopped, regardless of residency) Black drivers who were stopped were searched at higher rates than White drivers. 2.5% of stopped Black drivers had a search of their person or vehicle conducted, compared to 1.8% of White drivers.
  - In 2022, 2.8% of stopped Black drivers had a search of their person or vehicle conducted, compared to 2.1% of White drivers.
- (Of all drivers stopped, regardless of residency) Black drivers who were stopped were arrested at higher rates than White drivers. 1.6% of Black drivers stopped were arrested, compared to 0.9% of White drivers.
  - In 2022, 1.9% of Black drivers stopped were arrested, compared to 1.2% of White drivers.
- Hispanic drivers (of any race) were also stopped at higher rates than White drivers, although not to the same extent as Black drivers. Although Hispanics made up only 9.0% of Virginia's driving-age population in the dataset, they made up 9.7% of state resident drivers stopped. Among all drivers stopped regardless of residency, 10.2% were Hispanic.
  - In 2022, Hispanics made up 8.9% of Virginia's driving-age population in the dataset and 9.5% of drivers stopped.
- (Of all drivers stopped, regardless of residency) Hispanic drivers who were stopped were searched at higher rates than White drivers. 2.5% of stopped Hispanic drivers had a search of their person or vehicle conducted, compared to 1.8% of White drivers.
  - In 2022, 2.9% of stopped Hispanic drivers had a search of their person or vehicle conducted compared to 2.1% of White drivers.
- (Of all drivers stopped, regardless of residency) Hispanic drivers who were stopped were arrested at higher rates than either White drivers or Black drivers. 1.7% of stopped Hispanic drivers were arrested, compared to 0.9% of White drivers and 1.6% of Black drivers.
  - In 2022, 2.1% of stopped Hispanic drivers were arrested, compared to 1.2% of White drivers and 1.9% of Black drivers.
- Native American/American Indian Drivers were stopped at marginally higher rates than White drivers. While they made up 0.29% of Virginia's driving-age population in the dataset, they made up 0.34% of state resident drivers stopped. Among all drivers stopped regardless of residency, they also composed 0.34% of stops. Due to the low frequency of Native American/American Indian individuals in Virginia's population, their disparity index rates in these analyses are especially prone to sensitivity. Stopped Native American/American Indian Drivers were largely underrepresented in searches and arrests.

- In 2022, Native Americans/American Indians made up 0.32% of Virginia's driving-age population in the dataset and 0.29% of drivers stopped.

- White and Asian/Pacific Islander drivers continue to be stopped at rates near or below their representation in the driving-age population statewide – even when filtering analysis to state resident stops only. This underrepresentation occurred not only for drivers stopped but also for all related measures including reasons for stops, searches of drivers and vehicles, and stop outcomes such as arrests or citations.

Findings from Analysis of Agency-Level Data

The analysis of statewide driver stop data showed that Black and Hispanic drivers were disproportionately stopped, and experienced more serious outcomes during those stops, than other drivers. This section provides a summary of the findings from the analysis of traffic stop data for individual law enforcement agencies (LEAs) in Virginia. Tables providing stop details for each individual agency are provided in Appendices B through E.

First, data is presented showing how likely drivers in each racial/ethnic group were to be stopped by LEAs. Second, data is presented on the events that occurred after each stop was made (searches made, stop outcome) for each driver racial/ethnic group.

The VSP provided DCJS with a list of 366 LEAs in Virginia. However, only 300 of these agencies were included in the traffic stop analysis. Agencies not included (see Appendix F) were for reasons such as:

- The agencies are no longer operational.
- The agencies did not begin reporting traffic stop data to VSP or were unable to submit a file that passed VSP review until after the VSP review cutoff of April 15, 2023.
- The agencies have no primary law-enforcement duties (typically a sheriff's office that provides staff and security for jails and courthouses) or reported their stops under the primary agency for their jurisdiction due to a shared data collection system.
- All of the agencies' cases were removed from the DCJS analysis dataset per the exclusion criteria.
- The agencies' jurisdictions do not include public roadways (typically agencies serving some colleges or universities or commercial properties).

The traffic stop analyses for these 300 agencies are presented separately for four different types of LEAs, depending upon the amount of driver traffic stop and driver demographic data available for the areas they serve. The four agency types are: Virginia State Police, local agencies serving cities and counties, local agencies serving towns, and other state, local, and private agencies.

Virginia State Police Traffic Stop Analysis

VSP provides traffic enforcement on state roadways and interstate highways throughout Virginia. Due to Virginia's geography and size, these enforcement duties are divided among seven VSP divisions, with each division including multiple counties, cities, and towns. Traffic stop data was provided for stops made by VSP officers in each VSP division, and the data was combined for analysis and presented here statewide. A separate Disparity Index (DI) was calculated for all drivers stopped by VSP (Virginia and non-Virginia residents and for Virginia resident drivers only). A DI was also calculated for each group of drivers for the events following the stop. Because post-stop outcomes are benchmarked against the actual stopped drivers rather than the census-derived estimates, DIs for

searches and arrests are analyzed only against all drivers stopped. The Vintage 2021 Statewide driving age population estimates for age 15 and older by race and ethnic group was used to calculate DIs for VSP driver stops.

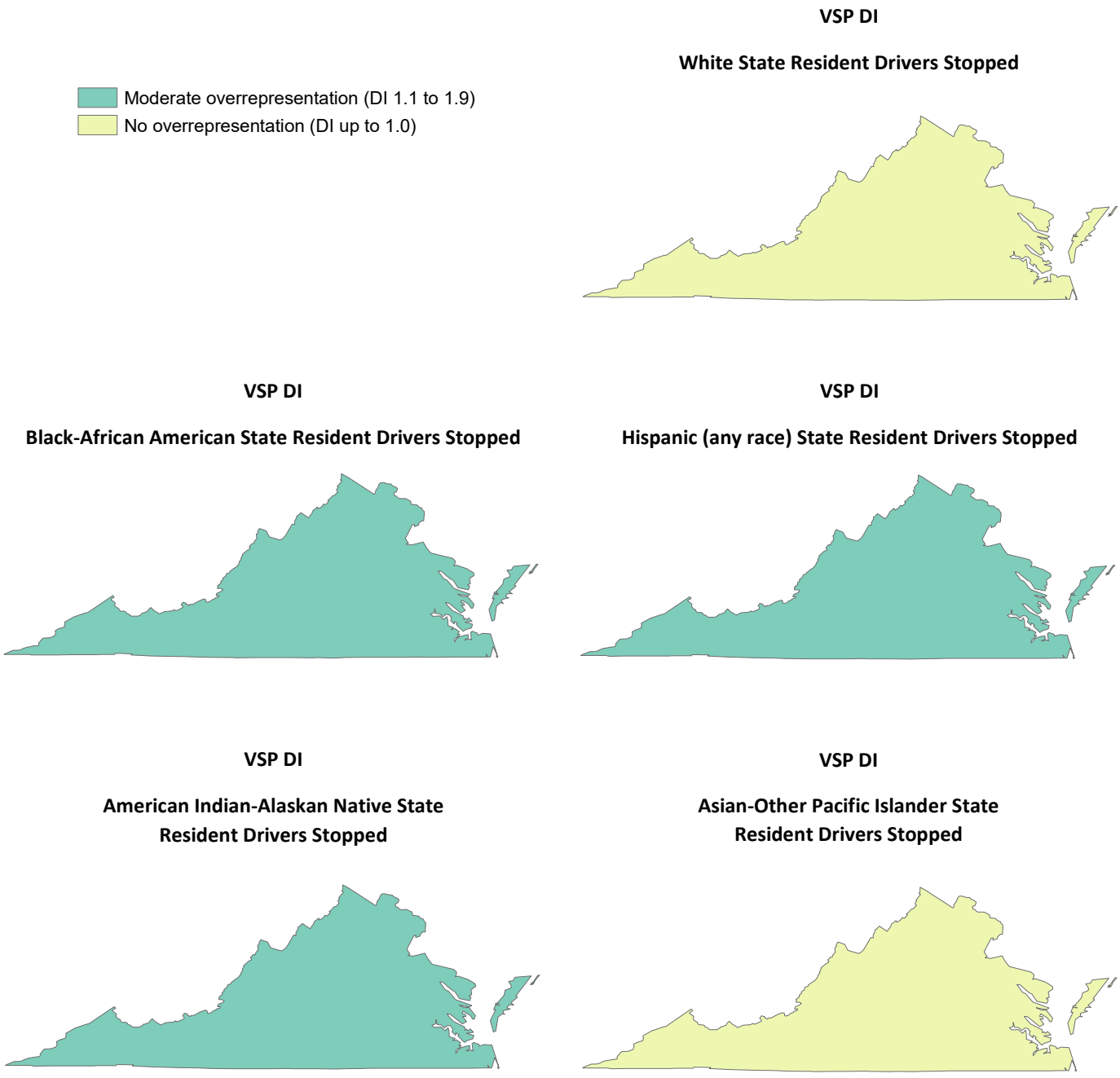
Due to limitations in the data, DCJS was unable to accurately calculate DIs for driver stops or post-stop events for each of the seven individual VSP divisions. Findings for VSP's stops are instead reported on an aggregated statewide level.

Detailed DI information for VSP traffic stops, as well as for events that occurred after the stops were made, is shown in Appendix B. Note that while a full table is shown for both the all drivers and the state residents findings for the sake of reference and comparison, the latter is the definitive source for VSP stop DIs and the former for search and arrest DIs.

Geographic Presentation of VSP State Resident Driver Stop Disparity Indexes (DIs)

The maps in Figure 6 illustrate which driver racial/ethnic groups had moderate or no overrepresentation for state resident driver stops conducted by VSP. Black, Hispanic, and American Indian drivers were moderately overrepresented in VSP state resident driver stops; there was no overrepresentation of White or Asian state resident drivers among VSP stops. No driver racial/ethnic group had high overrepresentation in state resident stops conducted by VSP.

Figure 6
VSP Maps for State Resident Driver Stops by Driver Race/Ethnicity



Analysis of Events Following VSP Traffic Stops

This section examines two major events that can occur once a traffic stop is made: Are there racial/ethnic disparities in how often a driver or vehicle is searched, or in how often a driver is arrested? In this section, for any single stop, a search was counted if a search of a driver, vehicle, or both of these, occurred. It is considered one search; they are not counted separately. Also, in this section, the analysis of arrests examines only driver arrests. Some data on passenger arrests was also included in the data collection but is excluded from the analysis.

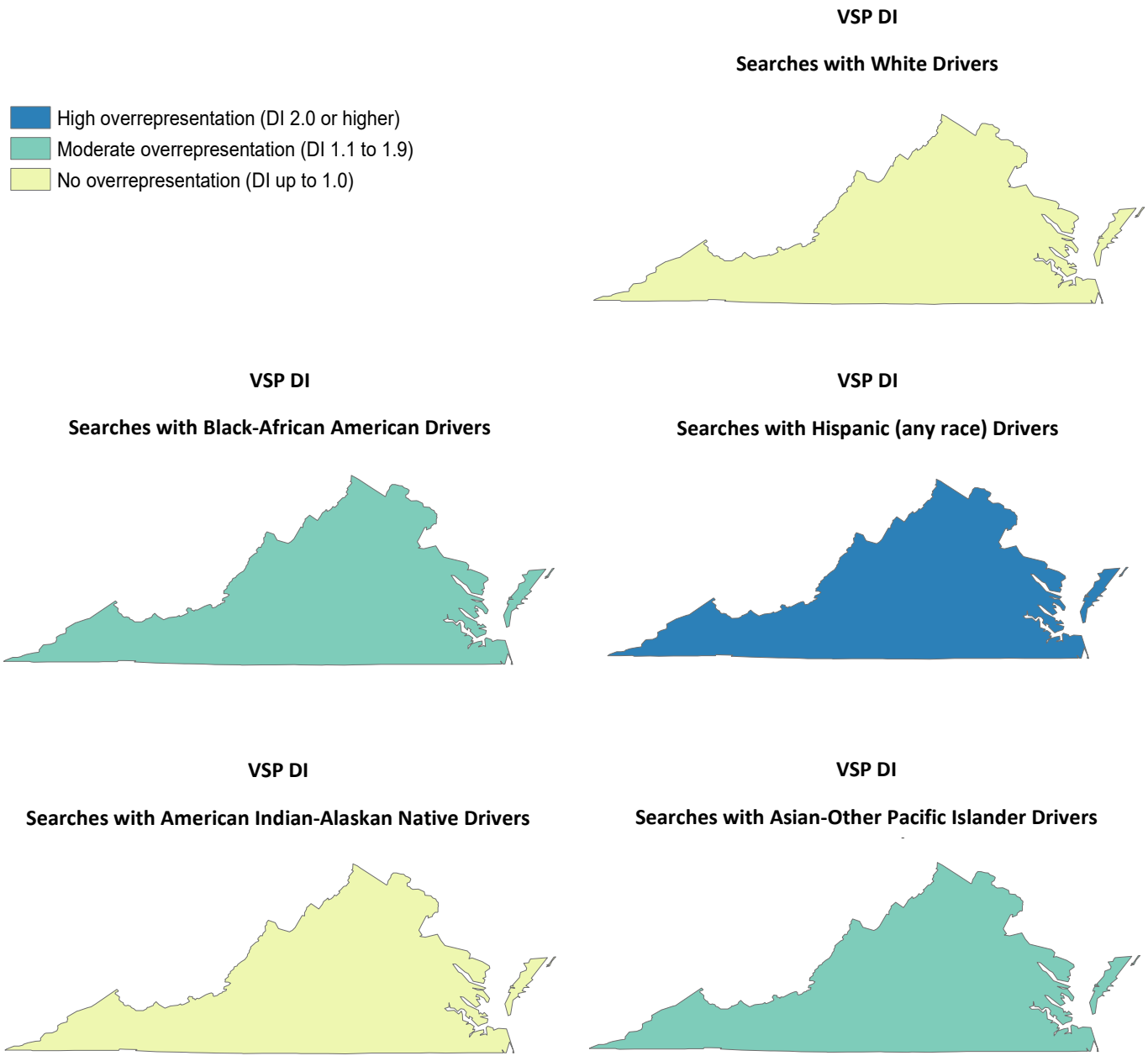
The DIs for events following a traffic stop can be calculated more precisely than the DI regarding whether or not a driver was stopped in the first place. The driver stop DI is based on a comparison of the percentage of drivers in each racial/ethnic group stopped by VSP statewide to the percentage of driving-age individuals in each group in the resident population statewide. Because the benchmark used for stopped drivers is based on an estimate of Virginia residents, the stopped driver sample is filtered to Virginia residents to create a more precise analysis. As previously stated, knowing the resident population age 15+ for each racial/ethnic group is not the same as knowing the actual number of drivers on the road in each group. It is only an approximation. This method gives us the best means of pairing an appropriate benchmark and dataset.

However, once a stop occurs, the actual percentage of drivers in each group who were stopped is known, and we know the actual percentage of drivers in each group where a person or vehicle search occurred, and/or we know if the driver was arrested. Because of this difference in baselining, analysis of post-stop events draws from the entire pool of drivers stopped by VSP regardless of residency status.

Geographic Presentation of VSP Search DIs

The maps in Figure 7 illustrate which driver racial/ethnic groups had high, moderate, or no overrepresentation in searches conducted by VSP among all drivers stopped. Hispanic drivers had high overrepresentation in VSP searches. Black and Asian drivers were moderately overrepresented in searches conducted by VSP. White and American Indian drivers had no overrepresentation in VSP driver and/or vehicle searches.

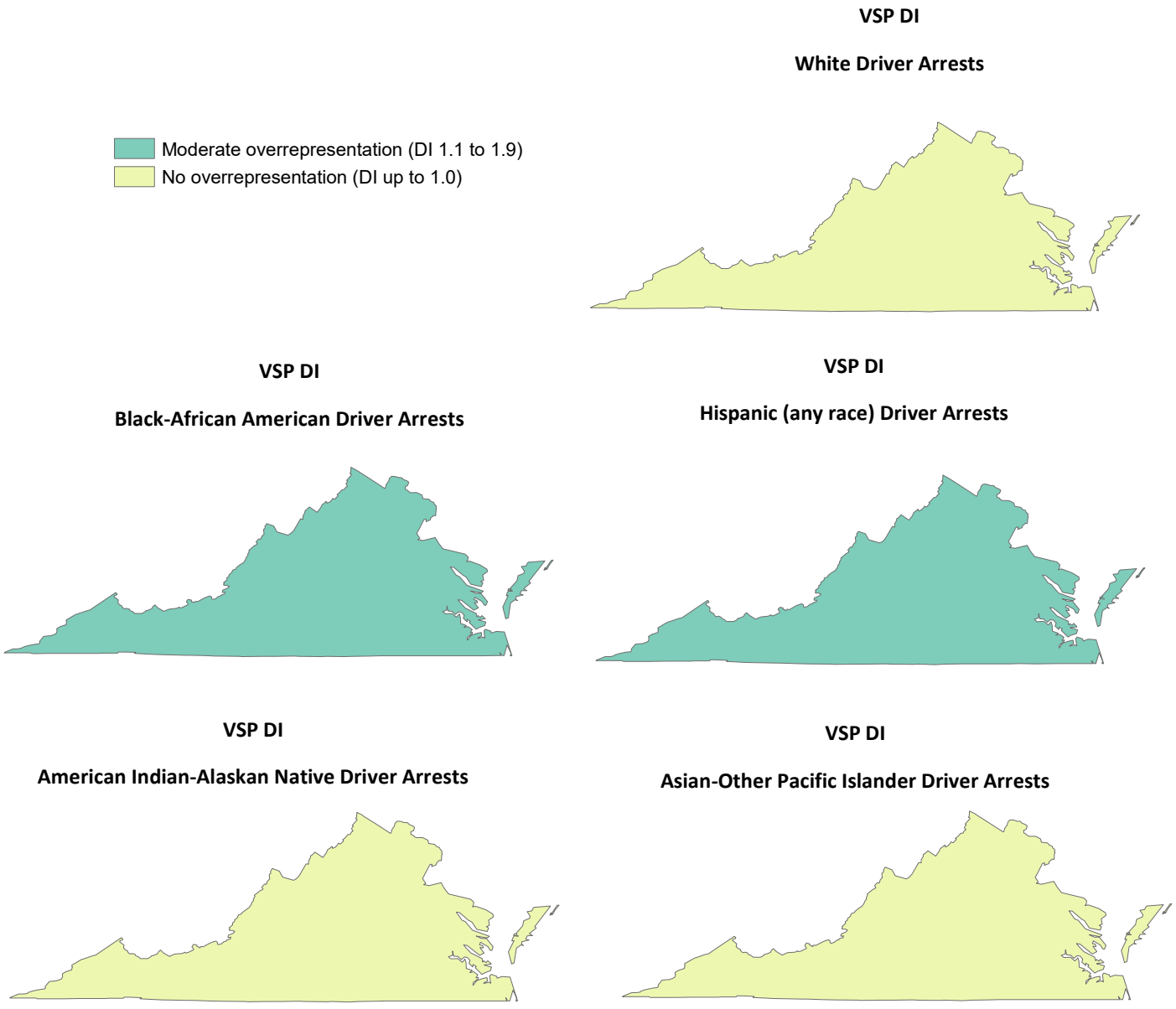
Figure 7
VSP Statewide Maps for Searches by Driver Race/Ethnicity, All Drivers Stopped



Geographic Presentation of VSP Driver Arrest DIs

The maps in Figure 8 illustrate which driver racial/ethnic groups had moderate or no overrepresentation for driver arrests conducted by VSP among all drivers stopped. Black and Hispanic drivers were moderately overrepresented in driver arrests conducted by VSP. White, American Indian, and Asian drivers had no overrepresentation in VSP driver arrests. No driver racial/ethnic group had high overrepresentation in driver arrests conducted by VSP.

Figure 8
VSP Statewide Maps for Driver Arrests by Driver Race/Ethnicity, All Drivers Stopped



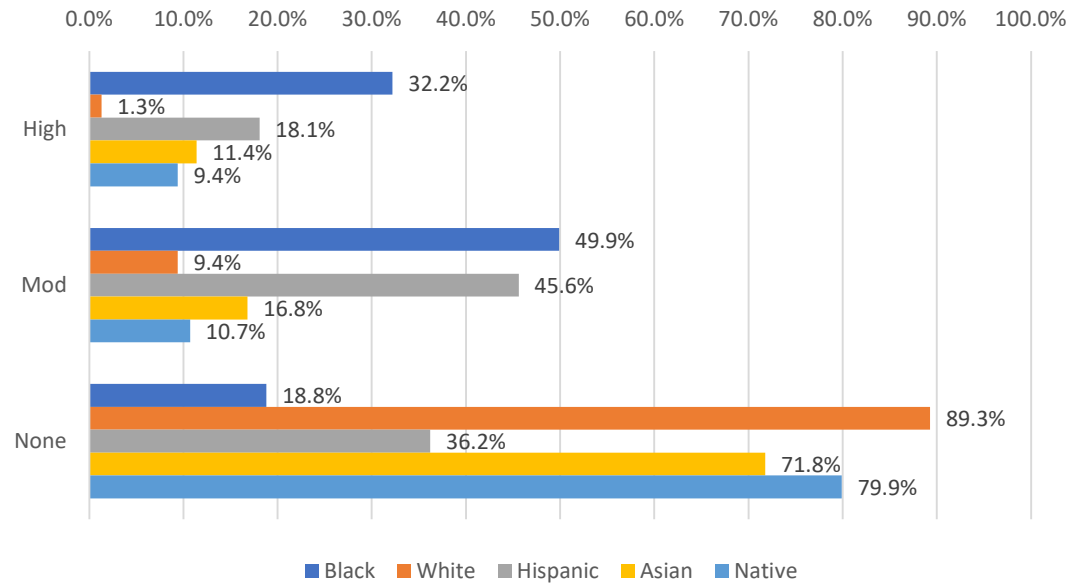
City and County Agency Traffic Stop Analysis

These 149 local agencies serve cities and counties. Racial/ethnic data for the resident population age 15+ was available for localities served by these agencies. A DI was calculated for each group of drivers who were stopped, and for the events following the stop (i.e., reason for stop, whether a search was conducted, and outcomes of the stop). For stop DIs, findings are shown for all drivers stopped by each agency and then by a filtered subset of only drivers reported as local residents (meaning resident of the city or county jurisdiction of the LEA performing the stop). Similar to the state resident analyses of statewide stop DIs, the local resident stop DIs for city and county agencies allow us to more closely match the benchmark estimates and stop data populations they represent, generating more precise DIs compared to the all drivers results. Because arrests and searches are benchmarked against the stopped drivers and not subject to the same measurement considerations, search and arrest DIs are shown for all drivers stopped. See Appendix A for a comprehensive listing of driver stop DIs for each individual city and county agency.

Driver Stop DIs for City and County Agencies

Figure 9 shows the percentages of the 149 LEAs with driver stop DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for **all drivers stopped regardless of residency** when compared to their local resident driving-age population.

Figure 9: Percent of City/County Agencies with High, Moderate, or No Overrepresentation in All Stops by Driver Race/Ethnicity



The percentages seen in Figure 9 show that when analyzing all stops regardless of residency, across all 149 agencies:

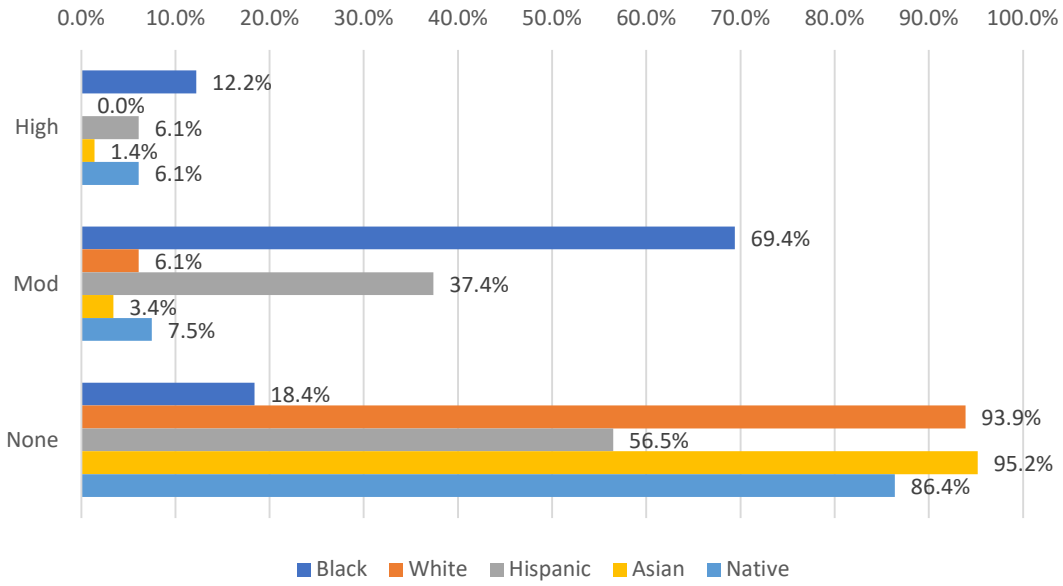
- 32.2% of city and county agencies had high overrepresentation in stops of Black drivers, 18.1% of agencies had the same for Hispanic drivers, 9.4% of agencies had the same for American Indian drivers, and 11.4% had the same for Asian drivers. 1.3% of agencies had high overrepresentation for White drivers.
- 49.9% of city and county agencies had moderate overrepresentation in stops of Black drivers, and 45.6% of agencies had the same for Hispanic drivers. 10.7% had the same for American Indian drivers and 16.8% of agencies had the same for Asian drivers. 9.4% of agencies had the same for White drivers.

- Only 18.8% of city and county agencies had no overrepresentation in stops of Black drivers, and only 36.2% of agencies had the same for Hispanic drivers. 79.9% of agencies had the same for American Indian drivers, and 71.8% of agencies had the same for Asian drivers. On the other hand, 89.3% of agencies had no overrepresentation for White drivers.

City and county agencies with zero stops, and therefore DIs of zero, are included in Figure 9 under the "No Overrepresentation" category. 0.7% of city and county agencies (1) reported no stops involving White drivers, 4.0% of agencies (6) reported none involving Black drivers, 6.7% of agencies (10) reported none involving Hispanic drivers, 38.3% of agencies (57) reported none involving American Indian drivers, and 18.1% (27) reported no stops involving Asian drivers.

Figure 10 shows the percentages of the 149 LEAs with driver stop DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for **local resident drivers of the city or county jurisdiction of the LEA performing the stop** when compared to their local resident driving-age population.

Figure 10: Percent of City/County Agencies with High, Moderate, or No Overrepresentation in Local Resident Stops by Driver Race/Ethnicity



The percentages seen in Figure 10 show that when analyzing local resident stops, across all 149 agencies:

- 12.2% of city and county agencies had high overrepresentation in stops of Black drivers, 6.1% of agencies had the same for Hispanic drivers and American Indian drivers, and 1.4% had the same for Asian drivers. No agencies had high overrepresentation for White drivers.

- 69.4% of city and county agencies had moderate overrepresentation in stops of Black drivers, and 37.4% of agencies had the same for Hispanic drivers. 7.5% had the same for American Indian drivers and 3.4% of agencies had the same for Asian drivers. 6.1% of agencies had the same for White drivers.

- Only 18.4% of city and county agencies had no overrepresentation in stops of Black drivers, and 56.5% of agencies had the same for Hispanic drivers. 86.4% of agencies had the same for American Indian drivers, and 95.2% of agencies had the same for Asian drivers. 93.9% of agencies had no overrepresentation for White drivers.

City and county agencies with zero stops, and therefore DIs of zero, are included in Figure 9 under the "No Overrepresentation" category. 1.4% of city and county agencies (2) reported no stops involving White drivers, 5.4% of agencies (8) reported none involving Black drivers, 10.9% of agencies (16) reported none involving Hispanic drivers, 63.3% of agencies (93) reported none involving American Indian drivers, and 40.8% (60) reported no stops involving Asian drivers.

Comparing the stop DI summaries between the all drivers findings and the local residents findings, a few key points are apparent. Because the local residents analysis filters out all non-resident stops, it increases the number of agencies with zero stops in a given racial/ethnic group. This effect is especially pronounced in the already relatively small American Indian and Asian populations, which go from 38.3% and 18.1% agencies with zero stops in the all drivers findings up to 63.3% and 40.8% among the local resident stops. Therefore, some of the differences shown between the DI summaries can be explained by the higher rate of zero minority group stops increasing the "No Overrepresentation" rates in the local resident findings. However, there is a shift from high to moderate disparity among Black stop DI rates while the Black stop zero reporting rate remains relatively constant (6 to 8 agencies). This shift suggests that some of the high black stop DI rates found among City and County agencies are accounted for to some degree by stops of non-local black drivers at a higher rate than the black driver age estimates of the local populations.

Analysis of Events Following Traffic Stops for City and County Agencies

Once a stop was made, a DI could be calculated to examine racial/ethnic driver overrepresentation for searches and arrests made following the stop. These are discussed below.

Searches Conducted

Figure 11 shows the percentages of the 149 LEAs with driver search DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for minority drivers where a search occurred when compared to the number of minority drivers stopped.

Figure 11: Percent of City/County Agencies with High, Moderate, or No Overrepresentation in Searches by Driver Race/Ethnicity, Virginia Statewide

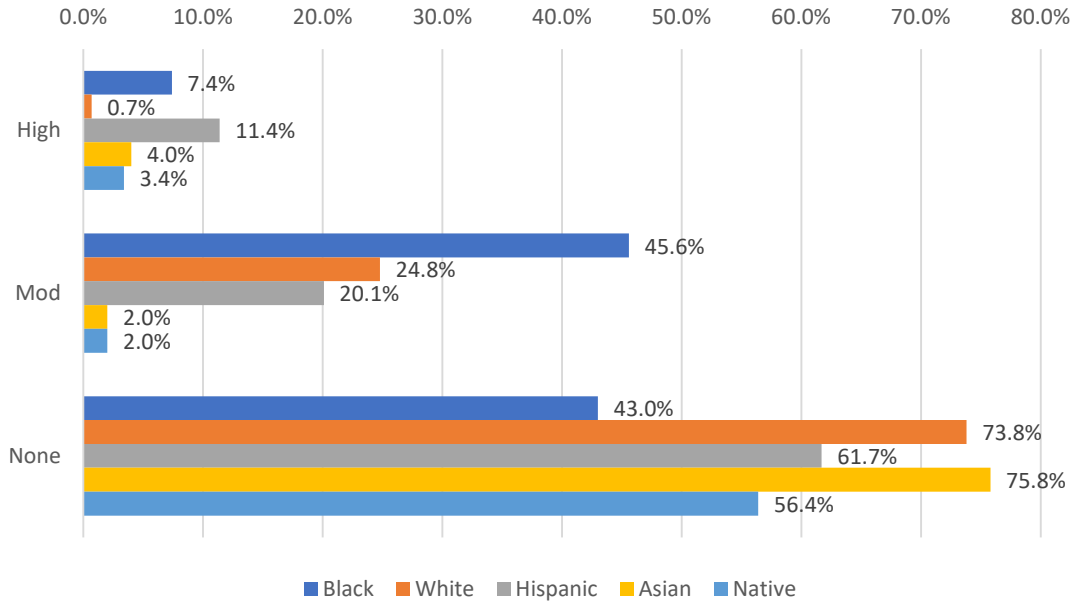


Figure 11 shows the following:

- Black and Hispanic drivers predominated when there was high or moderate overrepresentation for searches, and White and Asian drivers predominated when there was no overrepresentation for searches. Black and Hispanic drivers had consistently higher search DIs than White drivers.
  - 7.4% of city and county agencies had high overrepresentation for searches involving Black drivers, 11.4% of agencies had the same for Hispanic drivers, 3.4% of agencies had the same for American Indian drivers, and 4.0% had the same for Asian drivers. 0.7% of agencies had the same for White drivers.
  - 45.6% of city and county agencies had moderate overrepresentation for searches involving Black drivers, and 20.1% of agencies had the same for Hispanic drivers. 2.0% of agencies had the same for American Indian and Asian drivers. 24.8% of agencies the same for White drivers.
  - 43.0% of city and county agencies had no overrepresentation for searches involving Black drivers, 61.7% of agencies had the same for Hispanic drivers, 56.4% of agencies had the same for American Indian drivers, and 75.8% of agencies had the same for Asian drivers. By comparison, 73.8% of agencies had the same for White drivers.

City and county agencies with zero stops among a given racial/ethnic group are not shown for that group in Figure 10. 0.7% of city and county agencies (1) reported no stops involving White drivers, 4.0% of agencies (6) reported none involving Black drivers, 6.7% of agencies (10) reported none involving Hispanic drivers, 38.3% of agencies (57) reported none involving American Indian drivers, and 18.1% (27) reported no stops involving Asian drivers. Groups with at least one stopped driver but no searches for that group are included in Figure 10 under the "No Overrepresentation" category.

Driver Arrests

Figure 12 shows the percentages of the 149 LEAs with driver arrest DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for minority drivers arrested when compared to the number of minority drivers stopped.

Figure 12: Percent of City/County Agencies with High, Moderate, or No Overrepresentation in Arrests by Driver Race/Ethnicity

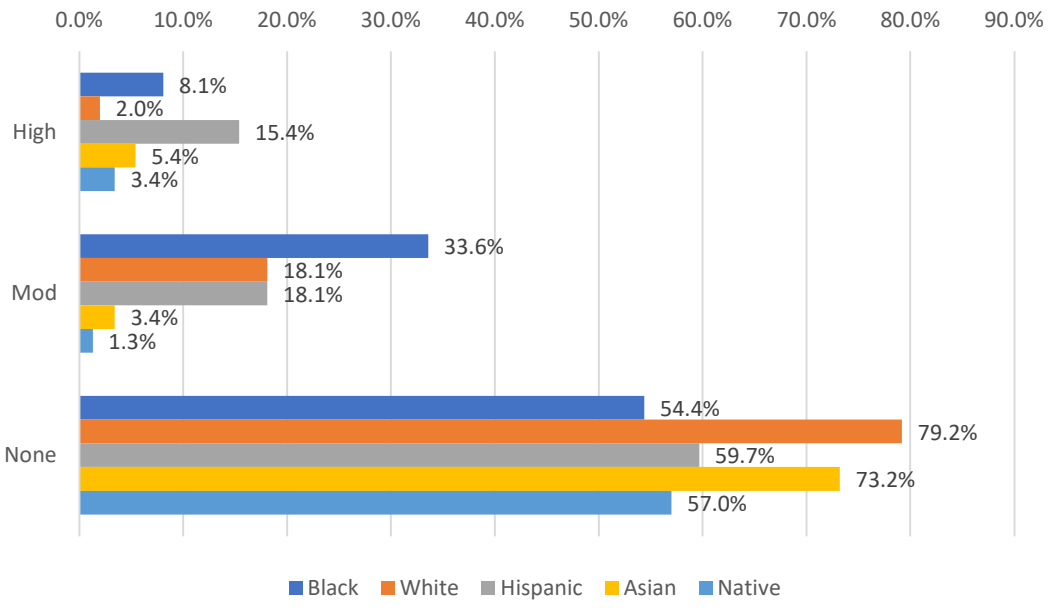


Figure 12 shows the following:

- As was the case for searches, Black and Hispanic drivers predominated when there was high overrepresentation for arrests and White and Asian drivers predominated when there was no overrepresentation for arrests. Black and Hispanic drivers had consistently higher arrest DIs than White drivers.
  - 15.4% of county and city agencies had high overrepresentation of Hispanic drivers arrested, 8.1% of agencies had the same for Black drivers, 3.4% of agencies had the same for American Indian drivers, and 5.4% of agencies had the same for Asian drivers. 2.0% of agencies had high overrepresentation for White drivers arrested.
  - 33.6% of county and city agencies had moderate overrepresentation of Black drivers arrested, 18.1% of agencies had the same for Hispanic and White drivers, 1.3% of agencies had the same for American Indian drivers, and 3.4% of agencies had the same for Asian drivers.
  - 54.4% of county and city agencies had no overrepresentation of Black drivers arrested, 59.7% of agencies had the same for Hispanic drivers, 57.0% of agencies had the same for American Indian drivers, and 73.2% of agencies had the same for Asian drivers. 79.2% of agencies had the same for White drivers.

City and county agencies with zero stops among a given racial/ethnic group are not shown for that group in Figure 10. 0.7% of city and county agencies (1) reported no stops involving White drivers, 4.0% of agencies (6) reported none involving Black drivers, 6.7% of agencies (10) reported none involving Hispanic drivers, 38.3% of agencies (57) reported none involving American Indian drivers, and 18.1% (27) reported no stops involving Asian drivers. Groups with at least one stopped driver but no arrests for that group are included in Figure 10 under the "No Overrepresentation" category.

DIs for individual agencies serving cities and counties are shown in Appendix C.

Town Agencies Traffic Stop Analysis

These 108 local PDs serve towns. Racial/ethnic data for the resident population age 15+ was not available for these agencies[9].

Driver Racial/Ethnicity Analysis of Traffic Stops for Town Agencies

Because driving-age population data for each racial/ethnic group was not available for the towns served by these PDs, a driver stop DI could not be calculated for these PDs. It was possible to examine the percentage of drivers in each racial/ethnic group among stops made by these PDs and these percentages were compared to the percentages of each group for all drivers stopped statewide.

The percentages of Black and Hispanic drivers stopped by town agencies were lower than the percentages of stops for these drivers statewide. While 30.3% of drivers stopped statewide were Black, 21.1% of drivers stopped by town agencies were Black. Hispanic drivers were 10.2% of those stopped statewide and were 9.2% of drivers stopped by town agencies. The percentage of White drivers stopped by town agencies, 67.1%, was higher than the percentage of White drivers stopped statewide, 56.8%.

[9] The IPUMS NHGIS five-year American Community Survey microdata was identified in last year's report as a possible source for town level demographic estimates and was evaluated as an option for this report. However, equivalent IPUMS NGHIS county level data included severely low estimates for some minority groups at even the all-ages level (for example, a Hispanic population estimate of 0 for Norton city) which suggested that the samples were likely imprecise at the town level and inappropriate for CPA use.

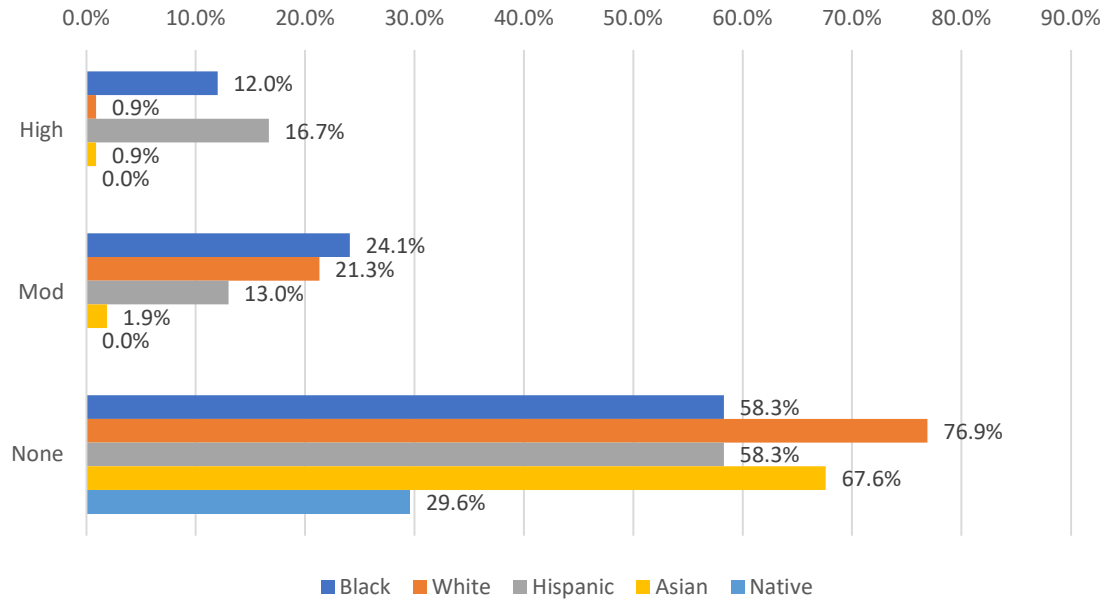
Analysis of Events Following Traffic Stops for Town Agencies

Once a stop was made, a DI could be calculated to examine racial/ethnic driver overrepresentation for searches and arrests made following the stop by a town agency. These are discussed below.

Searches Conducted

Figure 13 shows the percentages of the 108 Town LEAs with driver search DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for minority drivers where a search occurred compared to each group of minority drivers stopped.

Figure 13: Percent of Town Agencies with High, Moderate, or No Overrepresentation in Searches by Driver Race/Ethnicity

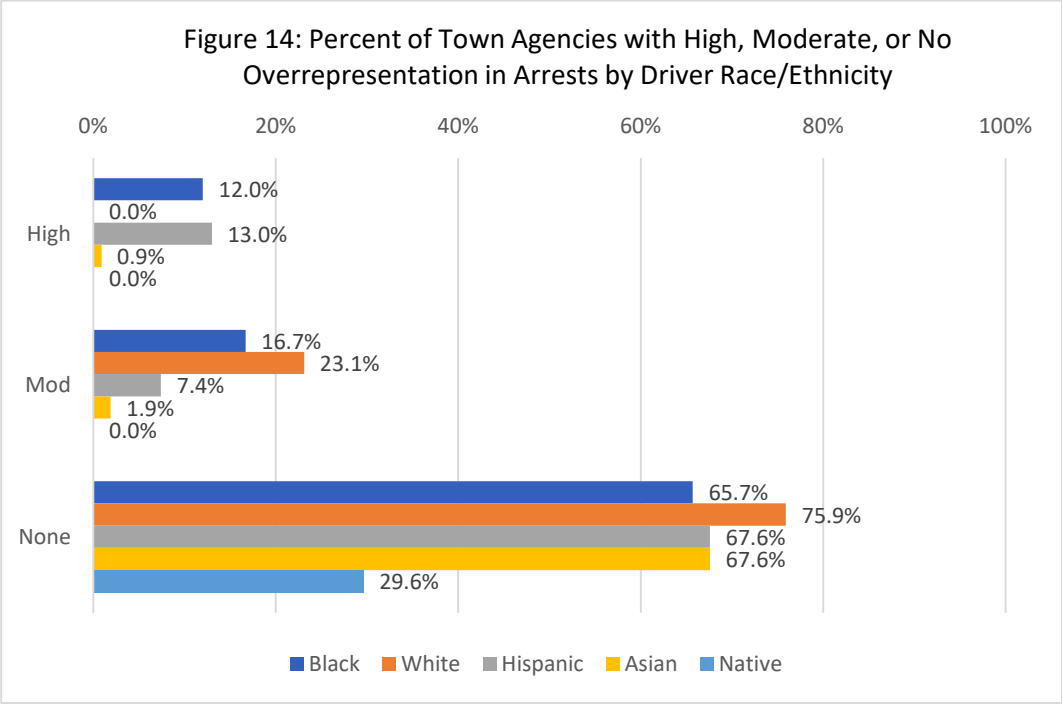


- Black and Hispanic drivers again tended to have higher search DIs than other drivers.
  - 12.0% of town agencies had a high overrepresentation for searches involving Black drivers and 16.7% of agencies had the same for searches involving Hispanic drivers. 0.9% of agencies had the same for searches involving White drivers, and 0.9% had high overrepresentation for Asian drivers.
  - 24.1% of town agencies had a moderate overrepresentation both for searches involving Black drivers and 21.3% for White drivers. 13.0% of agencies had the same for searches involving Hispanic drivers. 1.9% of agencies had the same for searches involving Asian drivers.
  - 58.3% of town agencies had no overrepresentation for searches involving Black drivers and 58.3% of agencies had the same for searches involving Hispanic drivers. By comparison, 76.9% of agencies had the same for searches involving White drivers, 67.6% for Asian drivers, and 29.6% for American Indian drivers.
  - There was no high or moderate overrepresentation in searches of American Indian drivers.

Town agencies with zero stops among a given racial/ethnic group are not shown for that group in Figure 13. One town agency (0.9%) reported no stops involving White drivers, 5.6% of agencies (6) reported none involving Black drivers, 12.0% of agencies (13) reported none involving Hispanic drivers, 70.4% of agencies (76) reported none involving American Indian drivers, and 29.6% (32) reported no stops involving Asian drivers. Groups with at least one stopped driver but no searches for that group are included in Figure 13 under the "No Overrepresentation" category.

Driver Arrests

Figure 14 shows the percentages of the 108 LEAs with driver arrest DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for minority drivers where an arrest occurred, when compared to each group of minority drivers stopped.



- Black and Hispanic drivers again tended to have consistently higher arrest DIs than other drivers.
  - 12.0% of town agencies had a high overrepresentation for Black drivers arrested and 13.0% of agencies had the same for Hispanic drivers. 0.9% had the same for Asian drivers, and zero town agencies had the same for White drivers.
  - 16.7% of town agencies had a moderate overrepresentation for Black drivers arrested and 7.4% of agencies had the same for Hispanic drivers. 23.1% of agencies had the same for White drivers, and 1.9% for Asian drivers.
  - 65.7% of town agencies had no overrepresentation for Black drivers arrested and 67.6% of agencies had the same for Hispanic drivers. 75.9% of agencies had the same for White drivers, 67.6% for Asian drivers, and 29.6% for American Indian drivers.
  - There was no high or moderate overrepresentation in arrests of American Indian drivers.

Town agencies with zero stops among a given racial/ethnic group are not shown for that group in Figure 14. One town agency (0.9%) reported no stops involving White drivers, 5.6% of agencies (6) reported none involving Black drivers, 12.0% of agencies (13) reported none involving Hispanic drivers, 70.4% of agencies (76) reported none involving American Indian drivers, and 29.6% (32) reported no stops involving Asian drivers. Groups with at least one stopped driver but no arrests for that group are included in Figure 14 under the "No Overrepresentation" category.

DIs for individual agencies serving towns are shown in Appendix D.

Geographic Presentation of Stop, Search, and Arrest DIs for City, County, and Town Agencies

The maps in Figures 15–17 illustrate which local areas of Virginia had high, moderate, or no overrepresentation for driver stops, searches, and driver arrests, respectively, for each driver racial/ethnic group. The local area boundaries shown on the maps are city and county boundaries. Town boundaries are not shown, but their stop data is included in the DI calculated for their surrounding county. This means that the county DIs used for the maps were calculated differently from the county LEA DIs shown earlier in this report. The county DIs shown previously were based on only stops reported by each LEA that serves the county, whereas the county DIs used for the following maps include stops reported by all agencies that serve the county, as well as stops reported by agencies that serve any town located within the county. The same applies for DIs calculated for searches and arrests (for more details on how the DIs were calculated for the maps, see Appendix I).

Because DCJS is uncertain whether town agencies use the Residency field to report exclusively town residents or more broadly county residents based on the language of the CPA technical specifications, unfiltered all drivers stop DIs are used for these maps.

Note that York-Poquoson Sheriff's Office is represented in York County on the following maps. No Town or County agency stops were included in the dataset for Charles City County or Northumberland County. These localities are blank in all maps for Figures 15–17 because they have no CPA data.

Figure 15
Local Area Maps for Driver Stops by Driver Race/Ethnicity

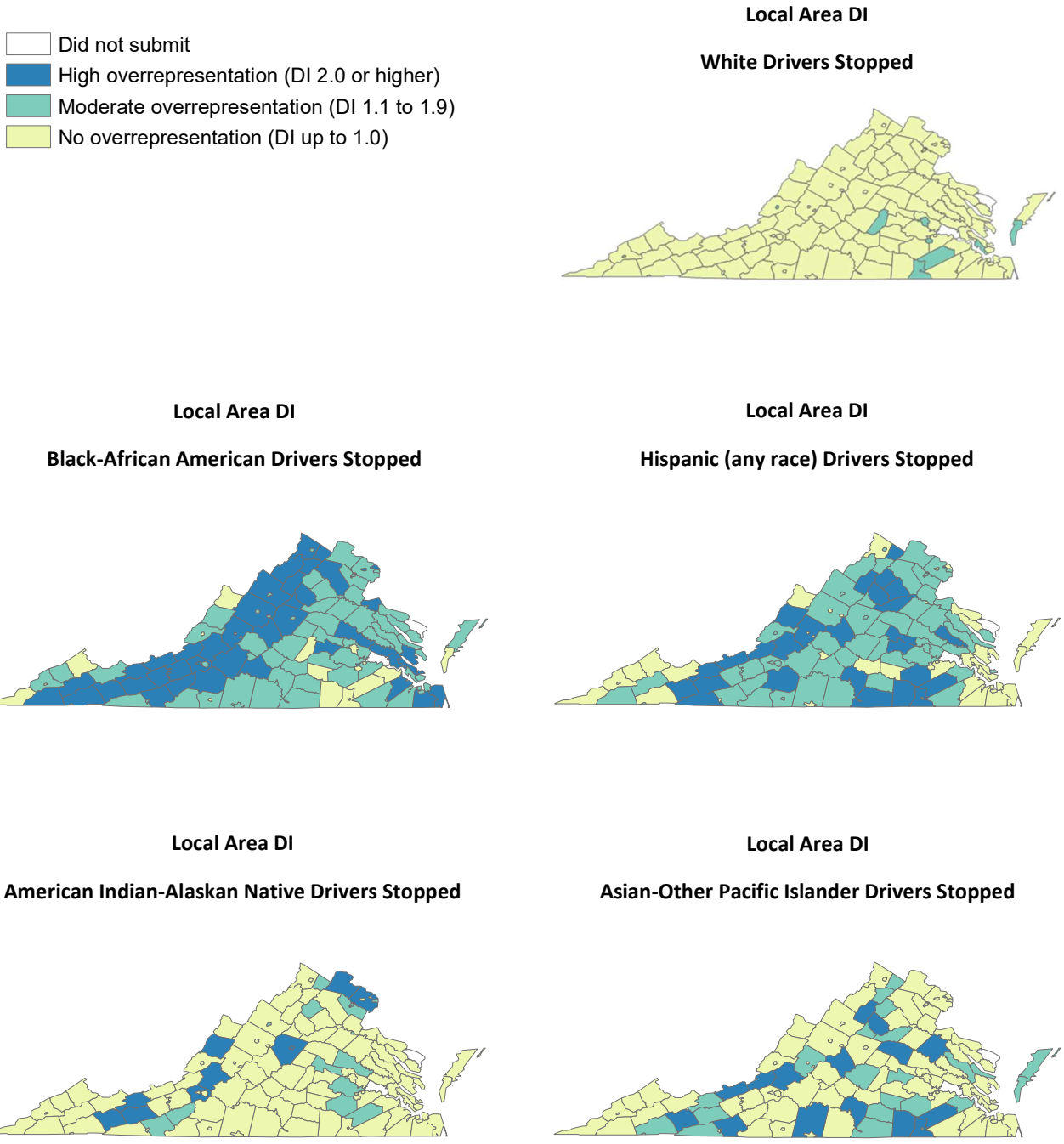


Figure 16
Local Area Maps for Searches by Driver Race/Ethnicity

A search may have been conducted of the driver only, of the vehicle only, or both driver and vehicle.

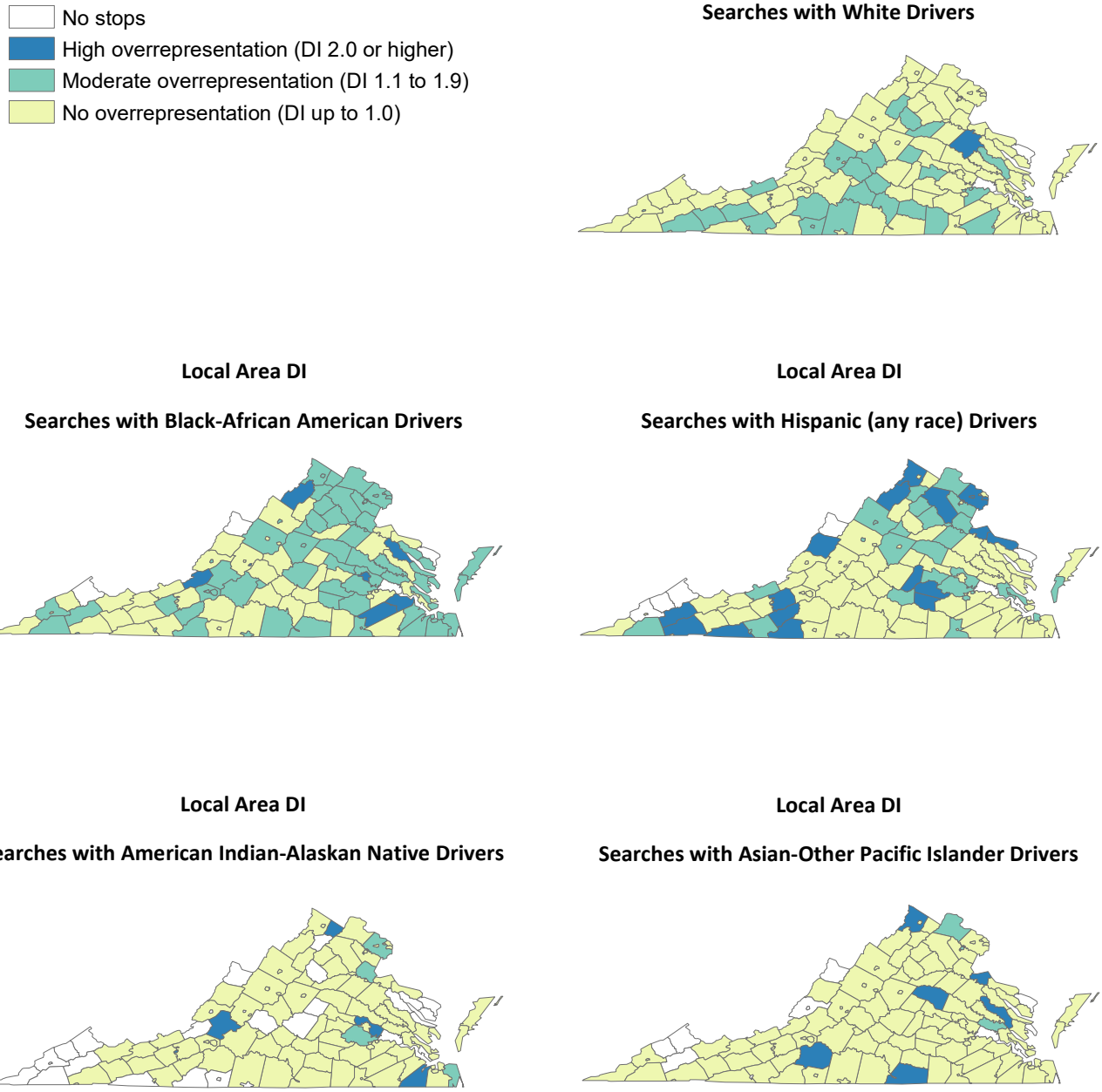
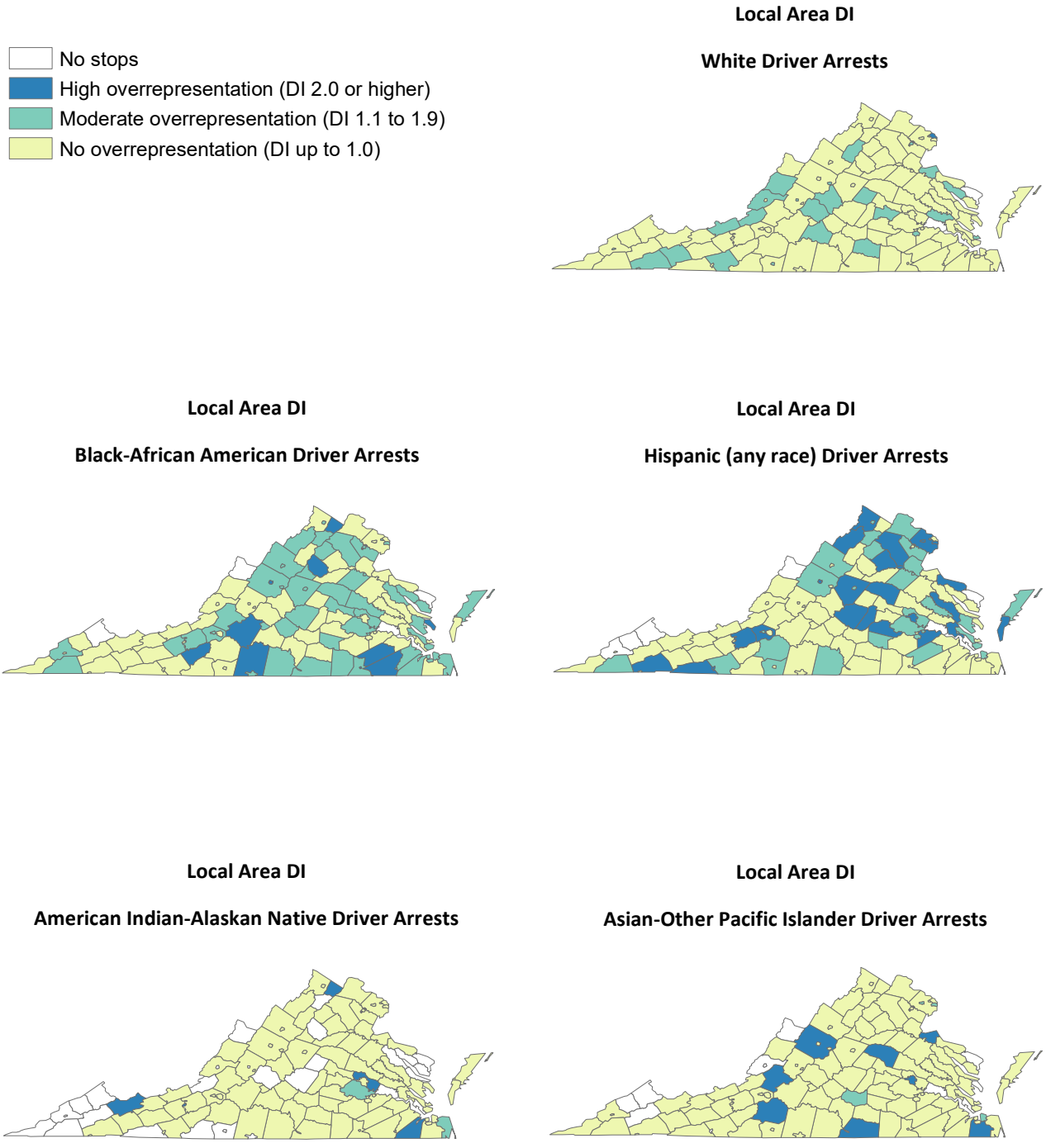


Figure 17
Local Area Maps for Arrests by Driver Race/Ethnicity



Other Agencies Traffic Stop Analysis

There were 42 "Other" state, local and private agencies serving locations that have no defined, stable population. Typically, these were agencies that serve larger college/university campuses with public roads or locations such as state parks, airports, railroads, or other commercial locations.

Traffic Stops for Other Agencies

Because driving-age population data for each racial/ethnic group was not available for the areas served by these agencies, a driver stop DI could not be calculated for these agencies. It was possible to examine the percentage of drivers in each racial/ethnic group among stops made by these agencies and these percentages were compared to those for each group of all drivers stopped statewide.

The percentages of White and Black drivers stopped by other agencies were similar to the percentages stopped statewide. 53.5% of drivers stopped by other agencies were White, compared with 56.8% of stops statewide, and 31.8% of drivers stopped by other agencies were Black, while 30.3% of all stops statewide were of Black drivers. The percentage of Hispanic drivers stopped by other agencies, 9.6%, was lower than the percentage stopped statewide, 10.2%. 5.0% of drivers stopped by other agencies were Asian compared to 2.4% statewide, and 0.1% stopped by other agencies were American Indian compared to 0.3% statewide.

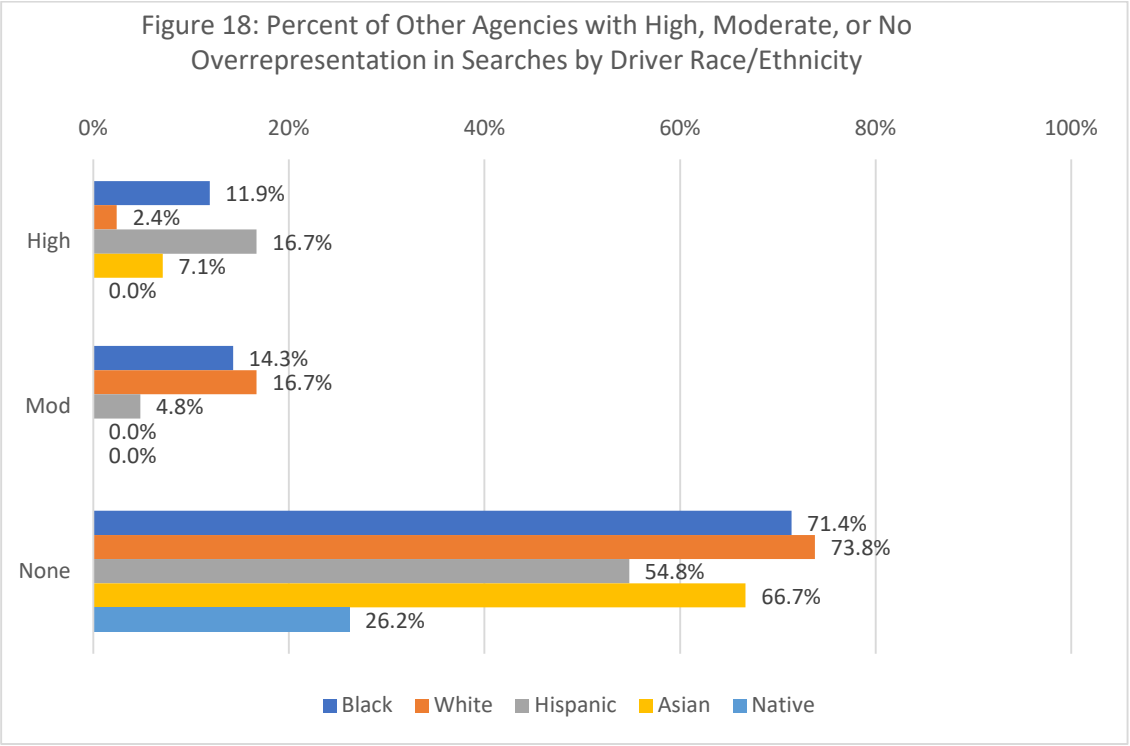
For future annual reports, DCJS will continue to examine whether there are any measures available that would permit a more meaningful assessment of racial/ethnic disparities in the traffic stops for these other agencies.

Analysis of Events Following Traffic Stops for Other Agencies

Once a stop was made, a DI could be calculated to examine racial/ethnic driver overrepresentation for searches and arrests made following the stop. These are discussed below.

Searches Conducted

Figure 18 shows the percentages of the 42 Other LEAs with search DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for minority drivers where a search occurred when compared to each group of minority drivers stopped.

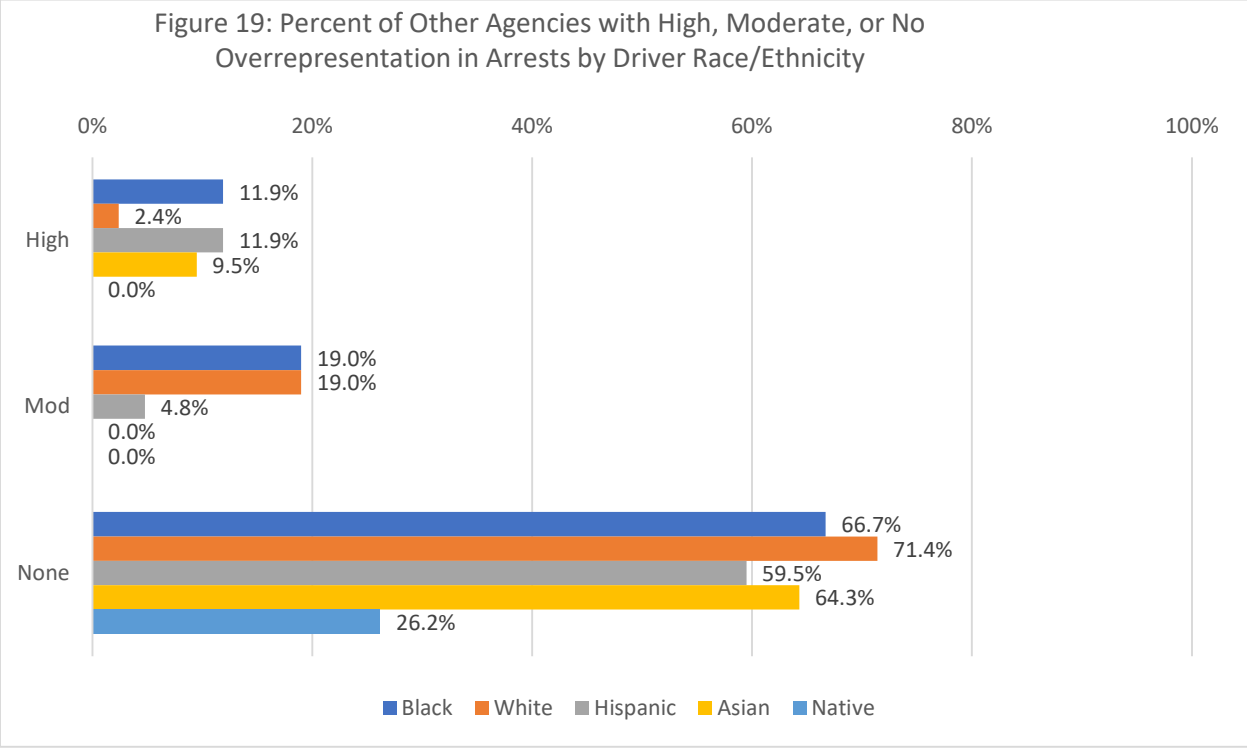


- Black and Hispanic drivers tended to be searched at a higher rate than other driver groups, with mostly higher search DIs than other drivers.
  - 11.9% of other agencies had a high overrepresentation for searches involving Black drivers and 16.7% of agencies had the same for Hispanic drivers. 7.1% of agencies had high overrepresentation for Asian drivers, and 2.4% had the same for White drivers. No agencies had the same for American Indian drivers.
  - 14.3% of other agencies had a moderate overrepresentation for searches involving Black drivers and 4.8% of agencies had the same for Hispanic drivers. 16.7% of agencies had the same for White drivers. No agencies had the same for American Indian or Asian drivers.
  - 71.4% of other agencies had no overrepresentation for searches involving Black drivers, while 54.8% of agencies had the same for Hispanic drivers. By comparison, 73.8% of agencies had the same for White drivers, 66.7% for Asian drivers, and 26.2% for American Indian drivers.

Other agencies with zero stops among a given racial/ethnic group are not shown for that group in Figure 18. 7.1% of agencies (3) reported no stops involving White drivers, 2.4% of agencies (1) reported none involving Black drivers, 23.8% of agencies (10) reported none involving Hispanic drivers, 73.8% of agencies (31) reported none involving American Indian drivers, and 26.2% (11) reported no stops involving Asian drivers. Groups with at least one stopped driver but no searches for that group are included in Figure 18 under the "No Overrepresentation" category.

Driver Arrests

Figure 19 shows the percentages of the 42 Other LEAs with driver arrest DIs indicating high overrepresentation (DI of 2.0 or higher), moderate overrepresentation (DI of 1.1 to 1.9), or no overrepresentation (DI of 1.0 or less) for minority drivers arrested, when compared to each group of minority drivers stopped.



- DIs for arrests of Black and Hispanic drivers by other are agencies generally higher compared to those for other drivers.
  - 11.9% of other agencies had a high overrepresentation for Black and Hispanic drivers, 2.4% of agencies had the same for White drivers and 9.5% of agencies had the same for Asian drivers. Zero agencies had higher overrepresentation for American Indian drivers.
  - 19.0% of other agencies had a moderate overrepresentation for Black and White drivers arrested. 4.8% of agencies had the same for Hispanic drivers. No agencies had moderate overrepresentation for Asian or American Indian drivers.
  - 66.7% of other agencies had no overrepresentation for Black drivers arrested and 59.5% of agencies had the same for Hispanic drivers. 71.4% of agencies had the same for White drivers, 64.3% for Asian drivers, and 26.2% for American Indian drivers.

Other agencies with zero stops among a given racial/ethnic group are not shown in Figure 19 above for that group. 7.1% of agencies (3) reported no stops involving White drivers, 2.4% of agencies (1) reported none involving Black drivers, 23.8% of agencies (10) reported none involving Hispanic drivers, 73.8% of agencies (31) reported none involving American Indian drivers, and 26.2% (11) reported no stops involving Asian drivers. Groups with at least one stopped driver but no arrests for that group are included in Figure 19 under the "No Overrepresentation" category.

DIs for individual "Other" agencies are shown in Appendix E.

Interpretation of Findings

The overall finding of this analysis is that, statewide, Black and Hispanic drivers in Virginia were disproportionately stopped by law enforcement when compared to White drivers based on the number of drivers stopped relative to their numbers in Virginia's driving-age population. This type of disparity was seen among traffic stops made by most of the individual law enforcement agencies for which disparity measures could be calculated.

The finding that minority drivers are more likely to be stopped by law enforcement is consistent with traffic stop research conducted in other states. Two recent large-scale studies, one using data from 20 million and another using data from nearly 100 million traffic stops, illustrate this.

In 2018, Baumgartner, Epp, and Shoub published *Suspect Citizens: What 20 Million Traffic Stops Tell Us About Policing and Race.* Their research reviewed statewide traffic stop data from North Carolina and included virtual every locality in the state over the 14-year period 2002–2016. They concluded:

> "We conduct [sic] the most comprehensive analysis to date of traffic stops in a single state, North Carolina…. [P]owerful disparities exist in how police interact with drivers depending on their outward identities: race, gender and age, in particular…. First, there are stark differences. Second, young men of color are clearly targeted for more aggressive treatment. Third, these differences are not fully justified by differences in criminality." (p. 2).

In 2020, Pierson et. al. published *A Large Scale Analysis of Racial Disparities in Police Stops Across the United States.* Their research was based on nearly 100 million traffic stops carried out by 21 state patrol agencies and 35 municipal police departments over nearly a decade. They concluded:

> "Relative to their share of the residential population, we found that Black drivers were, on average, stopped more often than white drivers…. Among stopped drivers, we found that Black and Hispanic individuals were, on average, searched more often than White individuals…. Our analysis provides evidence that decisions about whom to stop and, subsequently whom to search are biased against Black and Hispanic drivers." (pgs. 5–16).

Although this Virginia traffic stop analysis identified disparities in traffic stop rates related to race/ethnicity, it does not allow us to determine or measure specific reasons for these disparities, nor does it allow us to parse out what may be disparities due to bias-based profiling from other possible factors.

Previous research has identified various factors that could contribute to why members of a racial/ethnic group may be stopped at a higher or lower rate than their presence in the population, including:

- Bias (explicit or implicit) by law enforcement officers towards a racial/ethnic group.
- Different driving rates or patterns by different racial/ethnic groups (perhaps linked to differences in housing or employment locations, in use of public transportation, etc.).
- Different rates of policing in different areas (i.e., minorities may be more likely to drive in or through higher crime areas, which are policed more than other areas).
- Different agency practices (i.e., some LEAs differ on how much discretion they give officers in deciding when to make a stop).

The Virginia Department of Criminal Justice Services did not attempt to make a judgement about what Disparity Index (DI) values constitute a "good" or a "bad" degree of overrepresentation. The DI is a way of showing that a disparity existed and, to some extent, the relative degrees of disparity that existed between different LEAs. DCJS

also did not attempt to determine what DI values constitute statistically significant values. A DI of 2.5 indicates a greater degree of disparity than a DI of 1.5, but at this stage in the data collection, reporting and analysis, this is a descriptive difference, not a statistically significant difference.

The Community Policing Act directed DCJS to obtain driver traffic stop data "*for the purposes of analyzing the data to determine the existence and prevalence of the practice of bias-based profiling and the prevalence of complaints alleging the use of excessive force.*"

Although the analysis showed that Black and Hispanic drivers were stopped at higher rates than White drivers, and tended to have more negative outcomes once stopped, the current analysis does not tell us *why* these disparities exist. This is not unique to Virginia. A review of research done by other states and by academics shows that identifying the reasons for these disparities is difficult.

The overriding challenge to empirically determining to what extent bias-based profiling may be contributing to these disparities is what is referred to as the "benchmark problem." To help determine if bias is a factor in driver stops, one would need to be able to compare the proportion of stops made for each racial/ethnic group to the appropriate benchmark: the number of drivers in each racial/ethnic group who are actually driving on the road and subject to being stopped. No one has yet found an accurate way to do this.

This analysis, and analyses conducted in other states, used each racial/ethnic group's proportion of the resident population as a benchmark for measuring traffic stop disparities. However, resident population provides, at best, a crude measure of exposure to traffic stops. A given racial/ethnic group's proportion of the resident population age 15+ in a locality is not the same as that group's proportion of the *driving* population in that locality. The driving population for a group is what is exposed to potential traffic stops, not the entire age 15+ residential population. Some residents do not drive at all. They may be incapable of driving, not have a driver's license or a motor vehicle, or simply choose not to drive. Not all residents of a locality drive. Others may drive, but rarely. In some localities, some racial/ethnic groups may be more likely than others to use public transportation rather than drive.

Transient drivers also complicate comparisons of stopped drivers with the demographics of the resident driver-age population. A locality may have a small number of Black residents, but a large number of Black drivers from other localities that regularly drive through or into that locality (for example, someone living in one locality but driving daily into another locality where they work). Therefore, a much higher number of Black drivers could be subject to traffic stops than there are in the Black resident population to which these drivers are compared. This could drastically inflate the calculated disparity rate for the agency serving this locality.

Virginia is not alone in its search for better approaches to using traffic stop data to look for indicators of bias-based profiling. Previous research examining traffic stop data has highlighted that racial/ethnic disparities exist, and found indications that bias-based profiling plays a role in these disparities. The problem is finding a method of determining how much of this disparity may be due to bias and how much may be due to other factors:

> "Our inability to devise a universally acceptable method for measuring racial and ethnic proportions within an ever-changing driving population remains one of the most controversial methodological challenges in racial profiling research…. Racial profiling studies based on poorly constructed benchmarks cause political and public relations problems and sometimes result in ill-fated legislation." (Withrow and Williams, 2015, p.1).

> "Most of the analyses reported show that police traffic stops are not proportional to the racial distribution of that jurisdiction's resident population, but most studies do not conclude that the police are engaged in racial profiling." (McMahon et. al., 2002, p. 1)

The U.S. General Accounting Office reviewed available data on bias in traffic stops from Florida, Maryland, New Jersey, and Pennsylvania, and concluded:

> "The quantity and quality of information that these analyses provided varied, and the findings are inconclusive for determining whether racial profiling occurred. Although inconclusive, the cumulative results of the analyses indicate that in relation to the populations to which they were compared, African Americans in particular, and minorities in general, may have been more likely to be stopped on the roadways studied…. These limitations notwithstanding, we believe that in order to account for the disproportion in the reported levels at which minorities and Whites are stopped on the roadways, (1) police officers would have to be substantially more likely to record the race of a driver during motorist stops if the driver was a minority than if the driver was White, and (2) the rate and/or severity of traffic violations committed by minorities would have to be substantially greater than those committed by Whites. We have no reason to expect that either of these circumstances is the case (U.S. General Accounting Office, 2000, pgs. 4, 9).

Some researchers have identified methods that allow for a better understanding of the factors that can confound measures of traffic stop disparities, and these include:

- Comparing the percentages of traffic stops made for each driver racial/ethnic group during daylight hours to those of drivers stopped during nighttime hours.
- Comparing the percentage of traffic stops made for drivers in each racial/ethnic group to the percentage of these drivers involved in traffic accidents.
- Comparing how often contraband is found when searches are made involving stopped drivers in each racial/ethnic group.
- Identifying traffic stops in which the role of bias-based profiling may be minimal or nonexistent.

Virginia could use the methods above to improve its traffic stop data collection, reporting, and analysis. How this could be done is discussed in the following Conclusions and Recommendations section, and in Appendix L – Recommendations from Past Reports.

Conclusions and Recommendations

The overall finding of this analysis is that, statewide, Black and Hispanic drivers in Virginia were disproportionately stopped by law enforcement when compared to other drivers, based on the number of drivers stopped relative to their numbers in Virginia's population. This type of disparity was seen among traffic stops made by many individual law enforcement agencies for which disparity measures could be calculated. Stops of Black and Hispanic drivers were also more likely to result in a search or an arrest. This finding is consistent with traffic stop research conducted in other states.

Although this Virginia traffic stop analysis identified disparities in traffic stop rates related to race/ethnicity, it does not allow us to determine or measure specific reasons for these disparities. Most importantly for this study, it does not allow us to determine the extent to which these disparities may be due to bias-based profiling or due to other factors that can vary depending on race or ethnicity.

STANDING RECOMMENDATION: *The percentages and Disparity Indexes (DIs) presented in this report should not be interpreted to indicate that any individual law enforcement agency is practicing bias-based profiling. Given the limitations noted above, these figures should only be used to identify where the numbers indicate that certain ethnic/racial groups are being disproportionately stopped, which may bear further review to identify why this is occurring and whether any action should be considered to reduce or eliminate it.*

This is a standing recommendation given the limitations of the CPA's current data fields. In addition, any year-to-year comparison of CPA findings should take into consideration both methodological differences and external factors involved in each year's report.

New Recommendations for 2023

The following recommendation is new to this year's report. Past recommendations can be found in Appendix L:

RECOMMENDATION: *For the 2024 CPA report, local resident analyses should be broken out for Town agencies and benchmarked against county-level census-derived benchmark estimates.*

Effective July 1, 2023, VSP's Community Policing Data Instructions and Technical Specifications Version 5.3 have revised value "R" for the Residency data element from "Resident of town/city/county of stop" to "Resident of city/county of stop." This change removes a degree of ambiguity from the residency coding of Town agency data – for the 2023 analysis, DCJS was unable to distinguish cases where a Town agency had marked "R" referring to town residency vs. county residency, which rendered the Residency field problematic for Town agency level analysis. With "town" removed as a possible descriptor in the "R" value, DCJS can more confidently categorize these cases as local county residents and follow the same benchmarking process as the City and County agencies accordingly.

A key assumption to this approach is that in the typical Virginia town, local county drivers are intermixed with the town's drivers enough that the town's driving population closely resembles its overall county's. Anecdotally, feedback along these lines is what led to the Residency value change in the version 5.3 technical specifications. However, DCJS could consult with VSP, Town agencies reporting traffic stops[10], and academic/demographic institutions working in the field of criminal justice research to develop testing and pre-implementation thresholds to validate this assumption.

This recommendation does not require new legislative action or executive action beyond agency implementation.

[10] For instance, DCJS could perform a survey of town agencies based on the 2023 CPA data to determine whether each agency used the "R" value to refer to county or town residents and what led to this decision.

Appendices *(available online)*

Appendix A: City and County Agency Driver Stop Disparity Indices
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-A.pdf

Appendix B: Traffic Stop Table for Virginia State Police
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-B.pdf

Appendix C: Traffic Stop Tables for Law Enforcement Agencies Serving Cities and Counties
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-C.pdf

Appendix D: Traffic Stop Tables for Law Enforcement Agencies Serving Towns
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-D.pdf

Appendix E: Traffic Stop Tables for Other Law Enforcement Agencies
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-E.pdf

Appendix F: Law Enforcement Agencies Not Reporting Traffic Stop Data
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-F.pdf

Appendix G: Bias-Based Profiling Legislation (SB 5030) Effective July 1, 2021
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-G.pdf

Appendix H: VSP Community Policing Data Collection Instructions and Tech. Specifications (V 5.3)
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-H.pdf

Appendix I: Notes on Disparity Index (DI) Calculation Methodology
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-I.pdf

Appendix J: Use of Force Data
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-J.pdf

Appendix K: References
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-K.pdf

Appendix L: Recommendations from Past Reports
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/2023/Appendix-L.pdf