COMMONWEALTH of VIRGINIA

Department of Criminal Justice Services

Shannon Dion
Director

Megan Peterson
Chief Deputy Director

Washington Building
1100 Bank Street
Richmond, Virginia 23219
(804) 786-4000
www.dcjs.virginia.gov

September 15, 2021

The Honorable Ralph Northam
Governor of Virginia
Patrick Henry Building
1111 East Broad Street
Richmond, Virginia 23219

The Honorable Mark R. Herring
Attorney General of Virginia
202 North Ninth Street
Richmond, Virginia 23219

Members of the General Assembly
c/o Division of Legislative Automated Systems (DLAS)
Pocahontas Building, 5th Floor
900 East Main Street, Suite W528
Richmond, Virginia 23219

Re: Community Policing Reporting Database Annual Report: "Report on Analysis of Traffic Stop Data Collected under Virginia's Community Policing Act."

Attached is the Community Policing Reporting Database Annual Report entitled "Report on Analysis of Traffic Stop Data Collected under Virginia's Community Policing Act."

This report is required under §9.1-192, and will summarize 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 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.

Should you have any questions or concerns, please feel free to contact David Cotter, Director of Policy and Legislative Affairs, at (804) 225-3471 or david.cotter@dcjs.virginia.gov.

Sincerely,

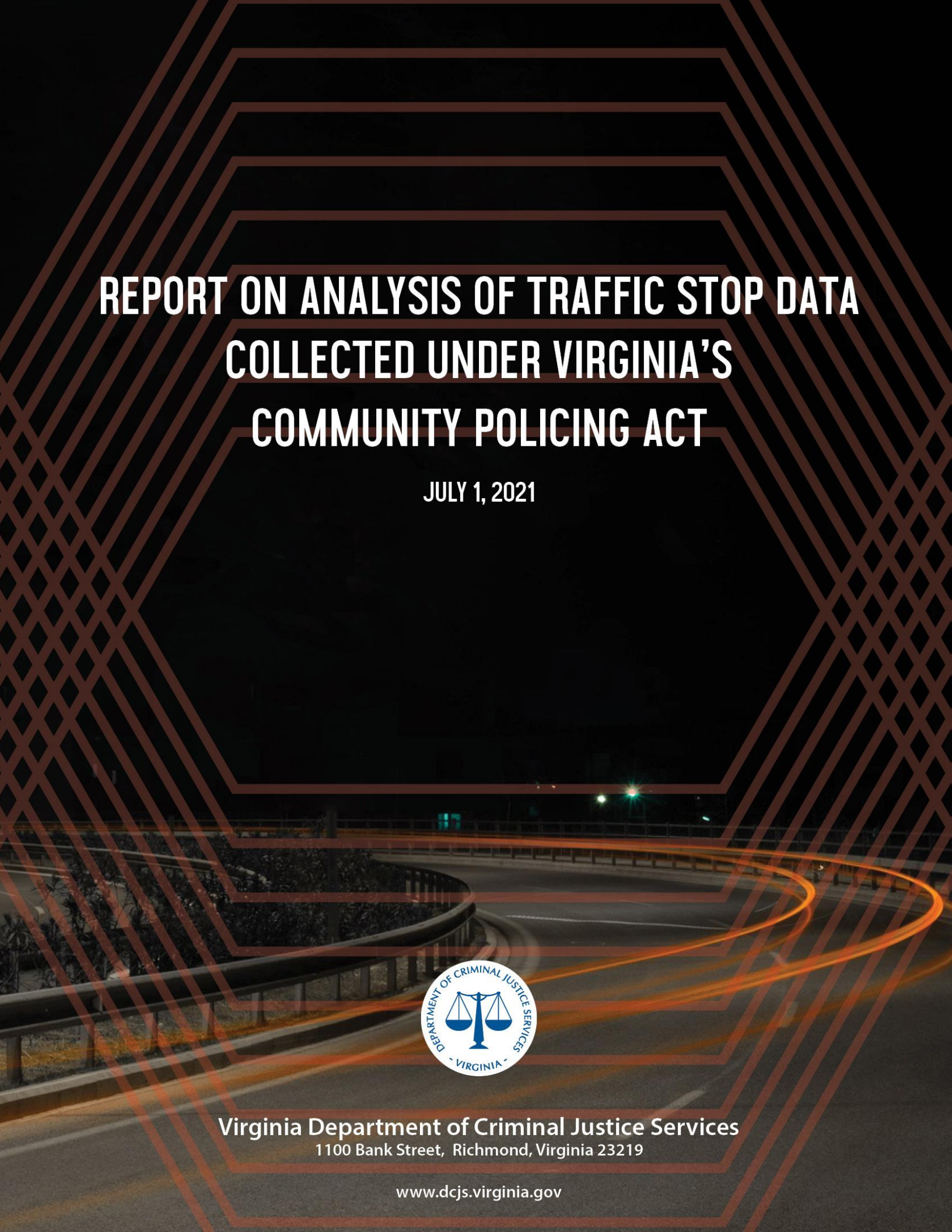
Shannon Dion

Shannon Dion

Attachment

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

JULY 1, 2021



Virginia Department of Criminal Justice Services
1100 Bank Street, Richmond, Virginia 23219

www.dcjs.virginia.gov

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If you have questions about this report or require additional information, please contact

Jim McDonough, DCJS Criminal Justice Research Center

at jim.mcdonough@dcjs.virginia.gov or (804) 371-0532

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 and sheriff's offices (PDs and SOs), begin collecting and reporting data on traffic stops as of July 1, 2020. State law-enforcement agencies, PDs, and SOs are 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 the VSP, which will 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 first 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 613,483 traffic stops reported in Virginia during the nine-month period between July 1, 2020, and March 31, 2021. This report also presents the findings from analyses of statewide data; aggregated data from the seven VSP Divisions; and data from each individual PD and SO that reported sufficient data to the Community Policing Database.

The information presented in this report is preliminary and should be interpreted with caution. This is largely because this was the first year that the Community Policing Act was implemented. As the report notes, many PDs and SOs – especially smaller agencies with limited resources – faced challenges establishing the data collection and reporting required under the Act. The majority of law-enforcement agencies (LEAs) in Virginia (269, or 77%) employ 50 or fewer officers, including 125, or 35% employing 10 or fewer officers. Many of these agencies faced challenges fulfilling all requirements imposed by the state even before the significant increase in reporting responsibilities resulting from 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 law-enforcement agencies, particularly smaller agencies, to support their ability to comply with the data-related provisions of the Act, as described in Recommendation 7 of this report.)

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 the data will improve in the future as the program matures.

Key Findings

Despite the limitations noted above, DCJS staff were able to identify differences in traffic stop rates for persons in different racial/ethnic groups. 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. **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, as follows[1]:

- A **DI of 2.0 or higher** indicates there was *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 there was *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 there was *no overrepresentation* (and may be 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.

[1] In some cases involving very small numbers of traffic stops, Disparity Index (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.

Analysis of Traffic Stops: Statewide

Overview of Statewide Traffic Stops

In total, 613,483 traffic stops made in Virginia were analyzed, representing all stops with full data reported by VSP and 304 other PDs and SOs for the nine-month period July 1, 2020 through March 31, 2021.

- The vast majority (96.7% or 593,427) of the traffic stops were made for traffic or motor-vehicle equipment violations.
- Only 3.8% (23,719) of the traffic stops resulted in a search of the driver, a passenger, or the vehicle.
- The most frequent outcome of a traffic stop was issuing a citation or summons (63.3% or 388,833 stops). A warning was issued in another 31% (191,933) of the stops.
- Only 3.7% of the traffic stops resulted in a driver and/or passenger being arrested.

Driver Racial/Ethnicity Analysis of Statewide Traffic Stops

- Black drivers were stopped at higher rates than White drivers. Although only 19.6% of Virginia's driving-age population in the dataset was Black, 31% of drivers stopped were Black. Black drivers were overrepresented among stopped drivers regardless of the reason that a traffic stop was initiated.
- Black drivers who were stopped were searched at higher rates than White drivers. 5.2% of stopped Black drivers had a search of their person, a passenger, or vehicle conducted, compared to 3.1% of White drivers.
- Black drivers who were stopped were arrested at higher rates than White drivers. 2.4% of Black drivers stopped were arrested, compared to 1.6% of White drivers.
- Hispanic drivers (of any race) were also stopped at higher rates than White drivers, although not as much so as Black drivers. Although Hispanics made up only 8.7% of Virginia's driving-age population in the dataset, they made up 9.5% of drivers stopped during the nine-month period. Hispanic drivers were overrepresented among most, but not all, of the reasons that a traffic stop was initiated.
- Hispanic drivers who were stopped were searched at higher rates than White drivers. 4.7% of stopped Hispanic drivers had a search of their person, a passenger, or vehicle conducted, compared to 3.1% of White drivers.
- Hispanic drivers who were stopped were arrested at higher rates than either White drivers or Black drivers. 3.5% of stopped Hispanic drivers were arrested, compared to 1.6% of White drivers and 2.4% of Black drivers.
- Statewide, White, American Indian/Alaskan Native and Asian/Pacific Islander drivers were stopped at rates below their representation in the driving-age population. This underrepresentation occurred not only for drivers stopped, but also for all related measures including reasons for stops; searches of drivers, passengers, and vehicles; and stop outcomes such as arrests or citations.

Analysis of Traffic Stops: Agency-Level

DCJS also examined traffic stop data for the VSP as an agency statewide and for 304 other individual PDs and SOs.[2] The degree to which each of the agencies' data could be analyzed depended on the amount of data reported by the agency, and on 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 agencies: VSP, agencies serving cities and counties, agencies serving towns, and other agencies.

[2] Sixty-three other Virginia agencies were not included in the analysis because they either do not make any traffic stops, do not patrol public roadways, are no longer operational, or did not begin reporting data until after March 31, 2021 due to data collection and reporting implementation challenges.

Preliminary Analysis Tables

Preliminary 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 305 LEAs in preliminary dataset (0.33%); 20% of analyzed stops*	**Traffic Stops Conducted by City and County LEAs:** *152 of 305 LEAs in preliminary dataset (50%); 66.6% of analyzed stops*	**Traffic Stops Conducted by Town LEAs:** *108 of 305 LEAs in preliminary dataset (35%); 11.3% of analyzed stops*	**Traffic Stops Conducted by "Other" LEAs:** *44 of 305 LEAs in preliminary dataset (14%); 2.1% of analyzed stops*
Summary of preliminary data: Black drivers had higher VSP traffic stop DIs than other drivers.	**Summary of preliminary data:** Black and Hispanic drivers had higher DIs in terms of traffic stops by city and county LEAs.	**Summary of preliminary 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 preliminary data:** The percentages of White and Black drivers stopped by "other" LEAs (e.g., airports, college or university campuses) were similar to the percentages stopped statewide.
Highlights from preliminary data: • No driver groups had **high overrepresentation** for traffic stops made by VSP • Black drivers had **moderate overrepresentation** for stops made by VSP. No other driver groups had moderate overrepresentation for stops made by VSP. • VSP had **no overrepresentation** for stops of Hispanic, American Indian, Asian and White drivers stopped.	**Highlights from preliminary data:** • 30.3% of agencies had **high overrepresentation** for stops of Black drivers, and 21.1% of agencies had the same for stops of Hispanic drivers. However, less than one percent of agencies had high overrepresentation for White drivers stopped. • Almost 50% of agencies had **moderate overrepresentation** for stops of Black drivers, and 37.5% of agencies had the same for stops of Hispanic drivers. Only 10.5% of agencies had moderate overrepresentation for White drivers stopped. • Only 17.1% of agencies had **no overrepresentation** for stops of Black drivers, and only 33.6% of agencies had the same for stops of Hispanic drivers. However, nearly 90% of agencies had no overrepresentation for White drivers stopped.	**Highlights from preliminary data:** • While 31% of drivers stopped statewide were Black, 20% of drivers stopped by town agencies were Black. • Hispanic drivers were 9.6% of those stopped statewide and 8.9% of drivers stopped by town agencies. • The percentage of White drivers stopped by town agencies – 66.4% – was higher than the percentage of White drivers stopped statewide (54.8%).	**Highlights from preliminary data:** • The percentages of White and Black drivers stopped by "other" agencies were similar to the percentages stopped statewide; 54.3% of drivers stopped by "other" agencies were White, compared with 54.8% of stops statewide, and 30% of drivers stopped by "other" agencies were Black, compared with 31% of all stops statewide. • The percentage of Hispanic drivers stopped by "other" agencies – 7.9% – was slightly lower than the percentage stopped statewide (9.5%).

[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.

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

Searches Conducted by Virginia State Police: *1 statewide agency (7 VSP Divisions combined) of 305 LEAs in preliminary dataset (0.33%); 12.9% of analyzed searches*	**Searches Conducted by City and County LEAs:** *152 of 305 LEAs in preliminary dataset (50%); 78.2% of analyzed searches*	**Searches Conducted by Town LEAs:** *108 of 305 LEAs in preliminary dataset (35%); 7.5% of analyzed searches*	**Searches Conducted by "Other" LEAs:** *44 of 305 LEAs in preliminary dataset (14%); 1.3% of analyzed searches*
Summary of preliminary data: Black and Hispanic drivers had higher DIs than other driver groups in terms of searches conducted by VSP.	**Summary of preliminary data:** Black and Hispanic drivers had higher DIs than other driver groups in terms of searches conducted by city and county LEAs.	**Summary of preliminary data:** Black and Hispanic drivers again had higher DIs than other driver groups in terms of searches conducted by town LEAs.	**Summary of preliminary 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 preliminary data: • No driver groups had **high overrepresentation** for searches made by VSP. • Black and Hispanic drivers had **moderate overrepresentation** for searches made by VSP. No other driver groups had moderate overrepresentation for VSP searches. • There was **no overrepresentation** for searches of American Indian, Asian and White drivers in searches made by VSP.	**Highlights from preliminary data:** • 8.5% of agencies had **high overrepresentation** for searches involving Black drivers, their passengers or vehicle, and 10.5% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. Less than 1% of agencies had high overrepresentation for searches **involving White** drivers, their passengers, or vehicle. • 53.3% of agencies had **moderate overrepresentation** for searches involving Black drivers, their passengers, or vehicle, and 22.4% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. 12.5% of agencies had moderate overrepresentation for searches involving White drivers, their passengers, or vehicle. • 19.7% of agencies had **no overrepresentation** for searches involving Black drivers, their passengers, or vehicle, while 30.3% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. By comparison, 76.3% of agencies had no overrepresentation for searches involving White drivers, their passengers, or vehicle.	**Highlights from preliminary data:** • 20.4% of agencies had **high overrepresentation** for searches involving Black drivers, their passengers, or vehicle, and 11.1% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. No agency had the same for searches involving White drivers, their passengers, or vehicle. 27% of agencies had **moderate overrepresentation** for searches involving Black drivers, their passengers, or vehicle, and 13% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. 15.7% of agencies had moderate overrepresentation for searches involving White drivers, their passengers, or vehicle. • Only 12% of agencies had **no overrepresentation** for searches involving Black drivers, their passengers, or vehicle, and only 7.4% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. By comparison, 63% of agencies had no overrepresentation for searches involving White drivers, their passengers, or vehicle.	**Highlights from preliminary data:** • 13.6% of agencies had **high overrepresentation** for searches involving Black drivers, their passengers, or vehicle, and 16% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. By comparison, only 2.3% of agencies had high overrepresentation for searches involving White drivers, their passengers, or vehicle. • 23% of agencies had **moderate overrepresentation** for searches involving Black drivers, their passengers, or vehicle, and 2% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. 9% of agencies had moderate overrepresentation for White drivers, their passengers, or vehicle. • Only 9% of agencies had **no overrepresentation** for searches involving Black drivers, their passengers, or vehicle, while 11% of agencies had the same for searches involving Hispanic drivers, their passengers, or vehicle. By comparison, 41% of agencies had no overrepresentation for searches involving White drivers, their passengers, or vehicle.

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

Arrests Made by Virginia State Police: *1 statewide agency (7 VSP Divisions combined) of 305 LEAs in preliminary dataset (0.33%); 11.7% of analyzed*	**Arrests Made by City and County LEAs:** *152 of 305 LEAs in preliminary dataset (50%); 82.2% of analyzed arrests*	**Arrests Made by Town LEAs:** *108 of 305 LEAs in preliminary dataset (35%); 4.8% of analyzed arrests*	**Arrests Made by "Other" LEAs:** *44 of 305 LEAs in preliminary dataset (14%); 1.2% of analyzed arrests*
Summary of preliminary data: Black and Hispanic drivers had higher DIs than other driver groups in terms of arrests made by VSP	**Summary of preliminary data:** Black and Hispanic drivers had higher DIs than other driver groups in terms of arrests made by city and county LEAs.	**Summary of preliminary data:** Black and Hispanic drivers again had higher DIs than other driver groups in terms of arrests made by town LEAs.	**Summary of preliminary data:** DIs for arrests of Black and Hispanic drivers by "other" agencies were mixed, with some DIs comparable to those for other drivers.
Highlights from preliminary data: • No driver groups had **high overrepresentation** for arrests in stops made by VSP. • Black and Hispanic drivers had **moderate overrepresentation** for 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 made by VSP	**Highlights from preliminary data:** • 13.2% of agencies had **high overrepresentation** for Hispanic drivers arrested, and 11.2% of agencies had the same for Black drivers arrested. No agencies had high overrepresentation for White drivers arrested. • 41.4% of agencies had **moderate overrepresentation** of Black drivers arrested, and 19.1% of agencies had the same for Hispanic drivers arrested. Only 15.1% of agencies had moderate overrepresentation of White drivers arrested. • 17.8% of agencies had no overrepresentation for Black drivers arrested, and 17.1% of agencies also had the same for Hispanic drivers arrested. 64.5% of agencies had no overrepresentation for White drivers arrested.	**Highlights from preliminary data:** • 19.4% of agencies had **high overrepresentation** for Black drivers arrested, and 11.1% of agencies had the same for Hispanic drivers arrested. Less than 1% of agencies had high overrepresentation for White drivers arrested. • 13.9% of agencies had **moderate overrepresentation** for Black drivers arrested, and 4.6% of agencies had the same for Hispanic drivers arrested. 18.5% of agencies had moderate overrepresentation for White drivers arrested. • Only 9.2% of agencies had **no overrepresentation** for Black drivers arrested, and only 1.8% of agencies had the same for Hispanic drivers arrested. 38.8% of agencies had no overrepresentation for White drivers arrested.	**Highlights from preliminary data:** • 4.5% of agencies had **high overrepresentation** for Black and White drivers arrested. 20.4% of agencies had high overrepresentation for Hispanic drivers arrested. • 13.6% of agencies had **moderate overrepresentation** for Black and White drivers arrested. 2.3% of agencies had moderate overrepresentation for Hispanic drivers arrested. • 13.6% of agencies had **no overrepresentation** for Black drivers arrested, and 4.5% of agencies had the same for Hispanic drivers arrested. By comparison, 22.7% of agencies had no overrepresentation for White drivers arrested.

Disparity Indexes (DIs) for each of the different agency types above are shown in Appendices A through D of the report.

Data on Complaints Alleging Excessive Use of Force

In addition to analyzing data on traffic stops, the Act also directed 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. To date, only limited use-of-force data has been collected and reported to VSP. DCJS examined the data that agencies have reported to VSP for the period July 1, 2020 – December 31, 2020. 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 Hispanic drivers in Virginia were disproportionately stopped by law enforcement when compared to other drivers between July 1, 2020, and March 31, 2021, 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 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 than stops of drivers from other racial groups. This finding is consistent with traffic stop research conducted in other states.

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.).
- Different rates of policing in different areas (racial minorities may be more likely to drive in or through higher-crime areas, which are policed more than other areas).
- Different agency practices (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.

Currently, researchers 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. Additionally, many localities have high numbers of drivers from different racial/ethnic groups who are passing through the locality – and subject to being stopped – but who are not residents and therefore are not counted in the localities' resident population figures. These nonresident driver stops can skew measures of traffic stop disparities for such localities.

> **RECOMMENDATION 1:** The percentages and DIs presented in this preliminary 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.

Finding an appropriate benchmark to represent the actual driving population for any given racial/ethnic group is a problem that limits all traffic stop research, not just Virginia's efforts. Some researchers have identified methods that can allow for better (but not exact) ways of examining the extent to which bias-based profiling may play a role in driver stops, or can at least help remove some of the confounding factors

that make it difficult to determine the roles that profiling may play. These methods, described below, could be applied in Virginia's analysis of traffic stop data, but would require additional driver stop information not currently collected under the Community Policing Act. Specific recommendations for additional information to be collected in accordance with the Act are listed below. In addition, as noted in Recommendation 7, the state may wish to consider allocating additional resources to law-enforcement agencies, particularly smaller agencies, to assist with the collection of existing and future data elements required under the Community Policing Act.

Considerations and Recommendations for Additional Data Collection

- *Comparing the percentages of traffic stops made for each driver racial/ethnic group during daylight hours to those of drivers stopped during nighttime hours.* This approach assumes that, during nighttime hours, law-enforcement officers would be less likely to discern the race/ethnicity of drivers they decide to stop than during daylight hours. If this is true, disparities based on driver race/ethnicity should occur less frequently in stops made during nighttime hours than in stops made during daylight hours. Research in other states has found evidence that non-White drivers are stopped less often during nighttime hours – when their race/ethnicity is less visible to law-enforcement officers.

  RECOMMENDATION 2: Collect data on the time of day at which each traffic stop was made, and add this data to the Virginia Community Policing Act (CPA) database. This data would allow DCJS to analyze traffic stop data by comparing disparities in driver stops made during hours of daylight and nighttime.

- *Comparing the percentage of traffic stops made for drivers in each racial/ethnic group to the percentage of these drivers involved in traffic accidents.* Research has shown that the racial/ethnic makeup of accident-involved drivers provides a better representation of the actual driving population than the racial/ethnic makeup of the resident driving-age population.

  RECOMMENDATION 3: Collect data on the race/ethnicity, age, and gender of drivers involved in traffic accidents in each Virginia locality. (It would not be necessary to collect personally identifiable information on the driver, only the demographic data.) How and where this data would be collected and stored would need to be determined, but the data would need to be maintained in a way that would allow DCJS to compare it with traffic stop data for each locality.

- *Comparing how often contraband is found when searches are made involving stopped drivers in each racial/ethnic group.* Research in other states has found that contraband "hit rates" are lower for non-White drivers than for White drivers. This may indicate that officers are making decisions to search non-White drivers based on a lower evidentiary bar than for searches of White drivers, suggesting that racial/ethnic bias may have been a factor when making search decisions.

  RECOMMENDATION 4: Collect data on searches made for contraband during traffic stops, and the results of the searches, and add this data to the CPA database.

- *Comparing data on how many drivers in each racial/ethnic group are residents or nonresidents of the locality in which the traffic stop was made.* This would allow DCJS staff to better understand the extent to which the resident driving-age population of a locality represents the actual driving population in the locality.

  RECOMMENDATION 5: Collect data on the residence of drivers involved in traffic stops, and add this data to the CPA database. This might be done using data collected from the driver's license.

- *Identifying traffic stops in which the role of bias-based profiling may be minimal or nonexistent, so these stops can be eliminated from the DCJS traffic stop analysis when appropriate.* These could include traffic stops made based on checkpoints or roadblocks, or made using electronic devices such as Radar, Laser, Light Detection and Ranging (LIDAR); Visual Average Speed Computer and Recorder (VASCAR); and license plate readers.

    RECOMMENDATION 6: Collect data on the method by which the traffic stop was initiated, to distinguish stops in which an officer's observation of the driver's race/ethnicity could have played a role from stops in which it would be less likely to play a role. Add this data to the CPA database.

The state may also wish to explore ways to address other limitations with the preliminary data used to conduct this analysis. Specifically:

RECOMMENDATION 7: Virginia should examine the need to provide resources to smaller law-enforcement agencies that had difficulty implementing the CPA data collection and reporting requirements. Assistance could be provided in several ways, such as helping these agencies train staff on reporting requirements and practices, and providing them with more effective data collection tools such as a statewide electronic summons application.

RECOMMENDATION 8: Virginia should examine the feasibility of obtaining more accurate data on the race and ethnicity of drivers who are involved in law-enforcement traffic stops. Under the CPA, law-enforcement officers now have two methods for determining and recording the race/ethnicity of a driver: 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 or ethnicity.

RECOMMENDATION 9: Virginia should examine the feasibility of collecting data on the race/ethnicity of the law-enforcement officers making traffic stops, and adding it to the CPA database. This would allow DCJS staff to assess whether there are indications that the race/ethnicity of the officer making a stop is related to racial/ethnic disparities in stops.

RECOMMENDATION 10: DCJS staff should conduct additional research on methods for calculating driver racial/ethnic disparities for agencies serving towns. Currently, the resident driving-age population data needed to examine stops by these agencies is limited, and DCJS staff should determine if this data, or other suitable data, is available. Similarly, DCJS staff should examine whether it is feasible to reliably assess traffic stop disparities for "other" agencies that do not have stable, defined resident population figures.

RECOMMENDATION 11: DCJS staff should continue to work with VSP to determine how data on complaints of excessive use of force can be collected in a manner that allows for an examination of bias-based profiling in use of excessive force cases.

Authority for Report

In 2020, Virginia policymakers enacted § 52-30.3 of the *Code of Virginia,* which directed the Virginia State Police (VSP) 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 (DCJS) 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 first 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

Although recent events such as the killing of George Floyd and Breonna Taylor have dramatically highlighted the need to examine and improve relationships between law enforcement and minority communities, research shows that these relationships have long been strained by the historical unequal treatment of minorities in the United States. As noted in a 1990 report distributed by the U.S. Department of Justice:

> "[T]he history of American police strategies cannot be separated from the history of the Nation as a whole. Unfortunately, our police, and all of our other institutions, must contend with many bitter legacies from that larger history. No paradigm – and no society – can be judged satisfactorily until those legacies have been confronted directly."
> (Williams, H. and Murphy, P, 1990, p. 13).

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). Both research and the living experience of citizens have long presented evidence that racial bias can play a role in who is stopped, why they are stopped, and what happens after they are stopped.

Attempts to 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 bias-based profiling – law-enforcement officers disproportionately profiling and stopping 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 additional 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 officers (see Appendix F for the SB 5030 language). LEAs were also required to post their traffic stop data on a publicly available website. Because the additional SB 5030 reporting requirements did not become effective until July 1, 2021, the additional data collected under those requirements are not addressed in this report. This data will be analyzed and presented in the July 1, 2022, report prepared by DCJS.

How the Data Was Collected and Reported

Virginia State Police (VSP) Data Collection System

Summary of VSP Traffic Stop Reporting Process

In May of 2020, the Virginia State Police (VSP) issued to all Virginia Law-Enforcement Agencies (LEAs) *Community Policing Data Collection Instructions and Technical Specifications Version 3* (see Appendix G). 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 (CPA) are shown in Table 1:

Table 1. Traffic Stop Data Reported Under The Community Policing Act, Effective July 1, 2020

Incident Details	*Driver Details*	*Additional Stop Details*
Record ID	Driver race	Persons searched
Stop date	Driver ethnicity	Vehicle searched
ORI (Originating Agency Identifier)	Driver age	Additional arrest
Location	Driver gender	
Jurisdiction Code	Action taken	
Initial Reason for Stop	Type of violation	
	Specific violation	
	Virginia Crime Code (optional)	

How Law-Enforcement Agencies Reported to VSP

Law-enforcement agencies began collecting data on July 1, 2020. Not all agencies were able to start CPA-mandated data collection and reporting at that time, and some were unable to begin reporting until 2021. 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.

VSP Data Dissemination

Although §§ 15.2-1609.10 and 15.2-1722.1 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 of 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 constantly updated by VSP. All data used for the analysis in this report was "frozen" on May 26, 2021.

Data on Complaints Alleging Use of Excessive Force

In addition to directing DCJS to analyze data on traffic stops, § 9.1-192 directed 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. To date, only limited data has been collected and reported to VSP. Appendix I provides a summary of the data that agencies have reported to VSP for the period July 1, 2020 – December 31, 2020. 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 (DCJS) began receiving Virginia Community Policing Act data from the Virginia State Police in early 2021 via a secure electronic file transfer process, and eventually received a total of 677,255 traffic stop records for the period July 1, 2020 through May 12, 2021. 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 were eliminated because these stops are not discretionary (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 3).*

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	Mandatory?	Criteria for DCJS analysis dataset	Number of records null or out of bounds	Total number of records to exclude
IncidentDate	Y	Between 7/1/2020 and 3/31/2021	1,266 null; 19 invalid entry; 20,207 between 4/1/2021 and 5/12/2021	21,492
AgencyORI	Y	Valid and not null; exclude 2 agencies no longer operating	123	123
ReasonForStop	Y	Values "C", "E", "O", "S" or "T"; "P" excluded from analysis dataset	17,553 null; 1,276="P"	18,829
Age	Y	15 or greater	13,199 age=0 ("Unknown"); 176 age between 1 and 14	13,375
Gender	Y	Values "F", "M", "O"	302 null	302
ActionTaken	Y	Values "W", "S", "A", "N"	5,177 null	5,177
PersonSearchedYN	Y	Values "Y" or "N." All three are reported for each stop record.	4,473 one or more values null; 1 record has PersonSearched value="P"	4,474
VehicleSearchedYN	Y			
AdditionalArrestYN	Y			
Total records excluded from analysis				63,772

Based on the records review described above, 63,772 of the original 677,255 records were excluded, leaving a final statewide analysis dataset containing a total of 613,483 records on drivers age 15 and older that were stopped by Virginia LEAs from July 1, 2020 through March 31, 2021. These records were based on the VSP CPA file finalized on May 26, 2021.

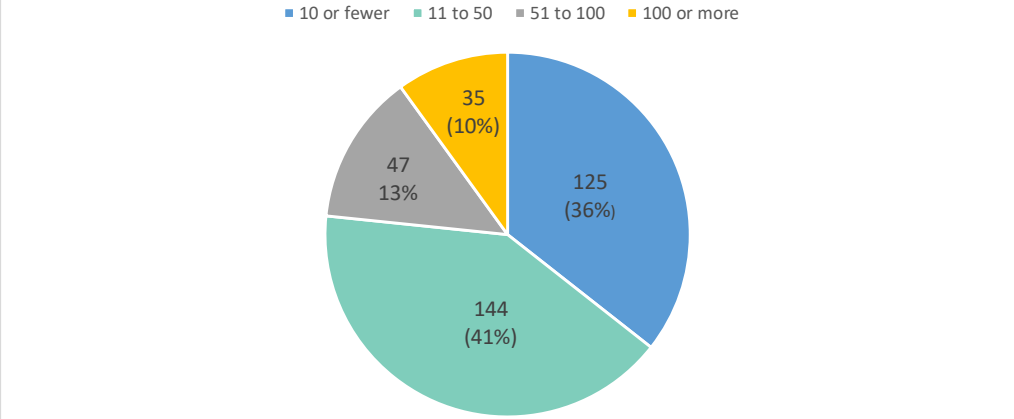
In addition to removing problematic traffic stop records from the analysis dataset, DCJS staff elected not to examine several of the variables contained in the remaining traffic stop records for this preliminary report. These variables include: Location, Jurisdiction Code, Violation Type, and Specific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

There is nothing unusual about encountering these types of data issues when a new statewide data collection system is started. VSP had to develop and distribute the data collection forms and instructions to virtually every law-enforcement agency in Virginia, and each of these agencies in turn had to distribute CPA-related forms and instructions to every one of its officers who might make a traffic stop. There are always

startup issues and a considerable learning curve when implementing a data collection and reporting program of this size.

Implementing the first year of traffic stop data collection and reporting was a challenge for Virginia's smaller LEAs, which struggled to provide the staffing, training, and equipment needed for the CPA data collection. This was because many of Virginia's local LEAs have small staffs and limited resources. As seen in Figure 1 below, more than 77% of local LEAs have 50 or fewer officers, and 125 agencies – more than one-third – have 10 or fewer officers.

Figure 1
Number and Percent of Local Law Enforcement Agencies in Virginia
by Number of Officers with Law Enforcement Duties



This report contains a recommendation that Virginia consider providing assistance to local LEAs to help them meet the reporting requirements of the CPA.

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.
- 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.
- 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 or underrepresented,*

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 H.

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 613,483 records for drivers age 15 and older that were stopped by all Virginia LEAs reporting usable Virginia Community Policing Act data for the period July 1, 2020 through March 31, 2021. Numbers of traffic stops are anticipated to be greater in future reports because the current report is based on nine months of data; some stop records were deleted due to data quality issues; and traffic volume was considerably lower than average during the period over which data was collected due to shutdowns and restrictions related to the COVID-19 pandemic from March of 2020 through mid-2021.

Of the 613,483 traffic stops in the dataset, 66.6% (408,447) were reported by LEAs that serve cities and counties, 20% (122,797) were reported by VSP, 11.3% (69,206) were reported by agencies serving towns, and 2.2% (13,033) 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 613,483 traffic stops statewide.

Table 3. Reasons for Traffic Stops, Virginia Statewide

	All Drivers	
Reason for Stop	*Number of Stops*	*Percent of Stops*
Violation Total	593,427	96.7%
Traffic Violation	523,177	85.3%
Equipment Violation	70,250	11.5%
Investigative Total	13,188	2.1%
Other Non-consensual	10,238	1.7%
Terry Stop	2,950	0.5%
Call for Service	6,868	1.1%
Grand Total	613,483	100.0%

Nearly 97% (593,427) of all stops reported were made for traffic or equipment violations. The vast majority (85.3%) of these were for traffic violations; only 11.5% were for equipment violations. This finding is consistent with traffic stop data from other states, where violations were the majority of the reasons for stops.

Investigative stops made up only 2.1% 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 1.7% of all stops. Terry stops (stops based on a reasonable suspicion of involvement in criminal activity) made up less than one percent of all stops. Calls for service made up just over one percent of the stops.

Person and Vehicle Searches

Only 3.8% (23,719) of the 613,483 stops made resulted in law enforcement searching the driver, a passenger, and/or the vehicle. Table 4 shows a breakout of searches made during the stops.

Table 4. Driver, Passenger and Vehicle Searches, Virginia Statewide		
	All Drivers	
	Number of Stops	*Percent of Stops*
Driver or passenger searched only	5,960	25.1%
Vehicle searched only	5,298	22.3%
Driver or passenger and vehicle searched	12,461	52.5%
Grand Total	23,719	100.0%

Cases where the driver and/or passenger was searched (but not the vehicle) made up about one-quarter of the searches (5,960).[4] Instances where only the vehicle was searched comprised 22.3% of all searches. A little over half of all searches involved both the driver or passenger and the vehicle (52.5%, 12,461).

Outcomes of Stops

Table 5 provides a breakdown of the outcomes for the 613,483 traffic stops.

Table 5. Outcome of Driver Stops, Virginia Statewide		
	All Drivers	
	Number of Stops	*Percent of Stops*
Driver citation/summons issued	388,833	63.4%
Warning issued to driver	191,933	31.3%
No enforcement action to driver	20,373	3.3%
Driver arrested	12,344	2.0%
Grand Total	613,483	100.0%

The most frequent outcome of a stop was issuing a citation or summons (63.4%, or 388,833 stops). A warning was issued in 31.3% (91,933) of the stops. In only 2.0% of the stops was a driver arrested. Passengers were arrested slightly more often than drivers, as 2.1% of stops (12,829) resulted in a passenger arrest. No further analysis of passengers was performed because the race and ethnicity of passengers was not recorded.

[4] Driver and passenger stop counts are combined in the reporting, so it is not possible to separate the number of drivers vs. passengers searched.

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 The National Center for Health Statistics (NCHS) vintage 2019 post-Census estimates of the resident population of the United States (April 1, 2010, July 1, 2010 – July 1, 2019). 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 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 H.

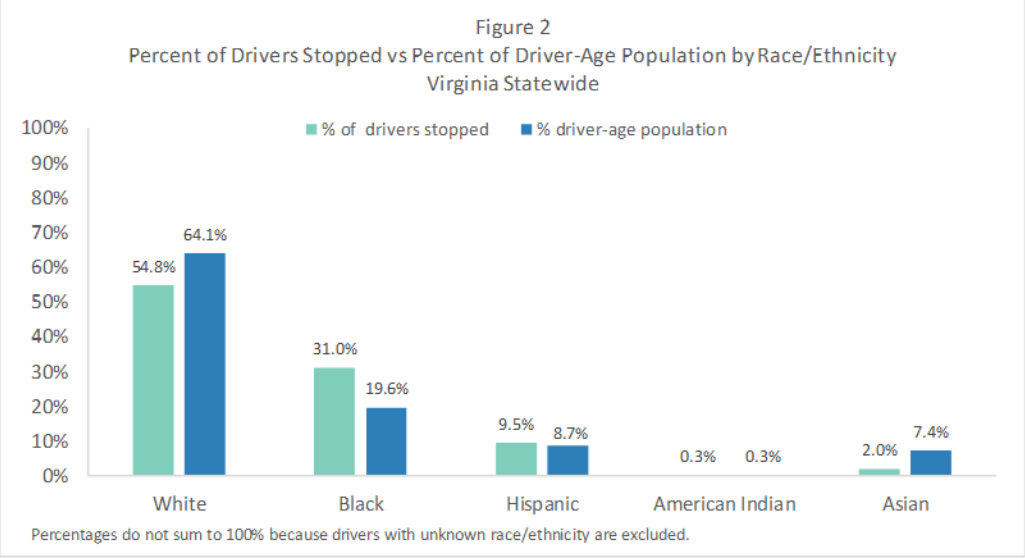
Table 6 shows a breakdown of the race/ethnicity of the 613,483 drivers stopped by Virginia law enforcement from July 1, 2020 through March 31, 2021.

Table 6. Race/Ethnicity of Drivers Stopped, Virginia Statewide

Race/Ethnicity	*Number*	*Percent*
White	336,123	54.79%
Black	190,134	30.99%
Hispanic (any race)	58,576	9.55%
Asian	12,202	1.99%
American Indian	1,539	0.25%
Unknown	14,909	2.43%
Grand Total	613,483	100.00%

White drivers made up more than one-half (54.8%) of all drivers stopped statewide. Black drivers made up 31%, Hispanic drivers made up 9.5%, Asian drivers made up 2%, and American Indian drivers made up 0.25% of the drivers. Race/ethnicity was unknown for 2.4% of the drivers stopped.

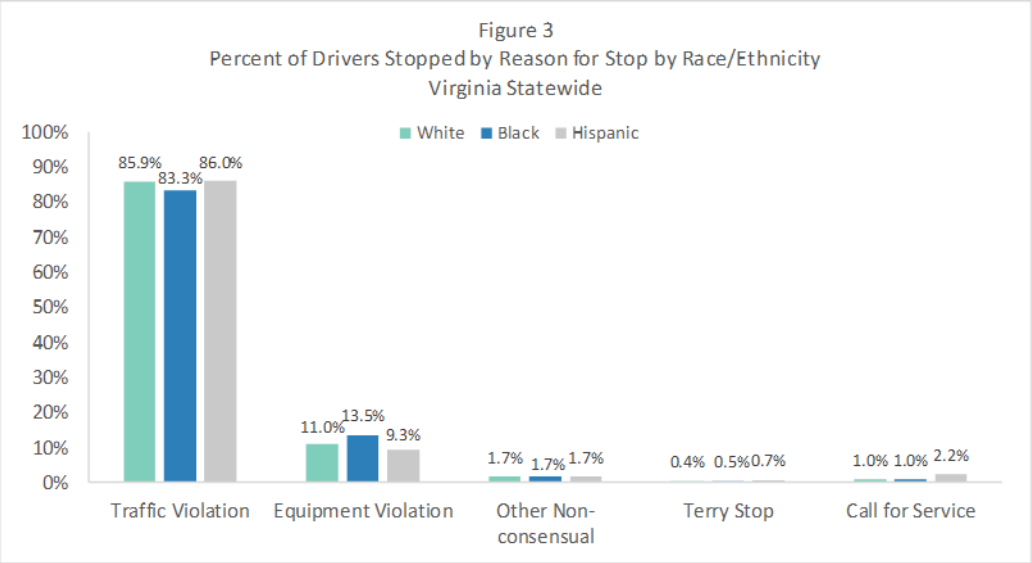
Figure 2 compares the percentage of each racial/ethnic group among drivers stopped to the percentage of each racial/ethnic group in Virginia's driving-age population (age **15+**).



As can be seen in Figure 2, although only 19.6% of Virginia's-driving age population is Black, 31% of the drivers stopped by law enforcement were Black. Hispanic drivers were slightly overrepresented relative to their share of the population (9.5% and 8.7%, respectively). White and Asian drivers were stopped at rates lower than their share of the driving-age population.

Reason for Traffic Stops, by Driver Race/Ethnicity

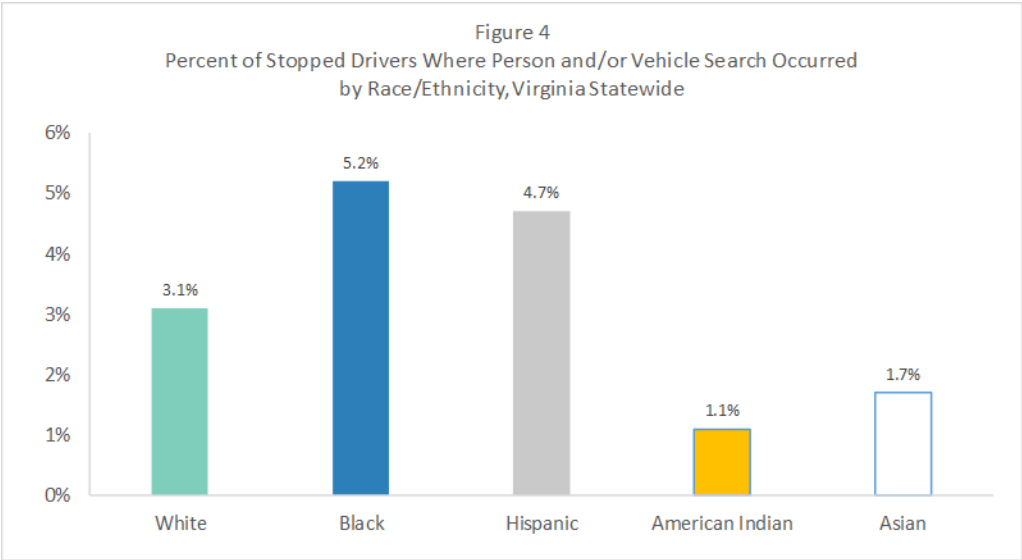
Figure 3 presents the reasons for traffic stops, by driver race/ethnicity. American Indian and Asian drivers were excluded from the figure due to the small numbers in each stop category.



Traffic violations were the overwhelming reason for driver stops among all racial/ethnic groups. About 85% of all drivers were stopped for a traffic violation. Black drivers were slightly less likely (83.3%) to be stopped for a traffic violation than White (85.9%) or Hispanic (86%) drivers. On the other hand, Black drivers were more likely (13.5%) to be stopped for equipment violations than White (11%) or Hispanic (9.3%) 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 a passenger, or of the vehicle? Figure 4 shows the percentage of drivers in each



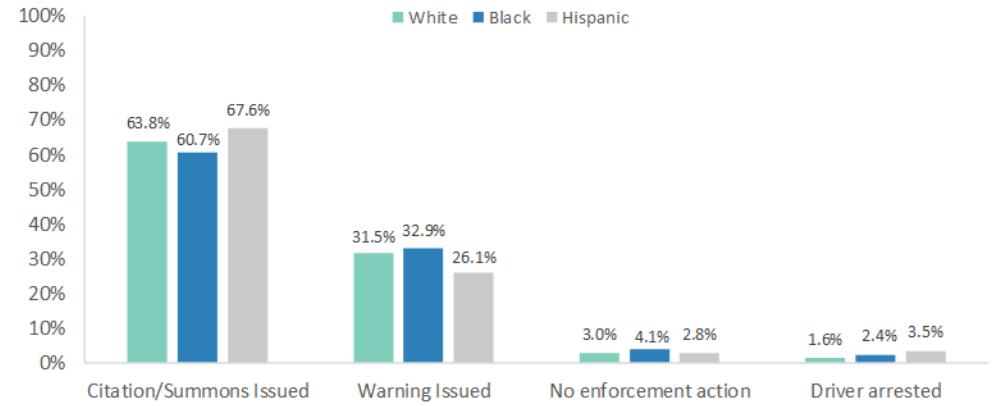
racial/ethnic group for which a search was conducted. “Search” means any person (driver or passenger) and/or the vehicle were searched. Stops of drivers with an unknown race/ethnicity were excluded. No race/ethnicity data on passengers is presented in this report, as demographic data was not collected on passengers.

Overall, searches of drivers and/or passengers, and searches of vehicles, were rare following traffic stops. Only 3.8% 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. 3.1% (10,358 out of 336,123) of stops of White drivers resulted in a search, whereas 5.2% (9,985 out of 190,134) of stops of Black drivers and 4.7% (2,767 out of 58,576) 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.

Figure 5
Outcome of Traffic Stop by Driver Race/Ethnicity
Virginia Statewide



Issuance of a citation or summons was the most likely outcome (more than 60% of the time) of a traffic stop, regardless of driver race/ethnicity. Warnings were the second most likely outcome for all drivers (26% to 33% of the time) across all driver race/ethnicities.

No enforcement action was taken in three to four percent of the stops.

Overall, only about 2% of driver stops resulted in an arrest of the driver. The largest post-stop differences observed were based on race/ethnicity of drivers arrested. Although an arrest occurred in 1.6% of White driver stops, an arrest occurred in 2.4% of Black driver stops and 3.5% of Hispanic driver stops.

Driver Gender, by Race/Ethnicity

Table 7 presents the gender of all drivers stopped, by race/ethnicity.

Table 7. 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	209,526	62.34%	117,660	61.88%	42,361	72.32%
Female	126,396	37.60%	72,292	38.02%	16,169	27.60%
Other	201	0.06%	182	0.10%	46	0.08%
Total	336,123	100.00%	190,134	100.00%	58,576	100.00%
	American Indian		*Asian*		*Unknown*	
	# of stops	% of stops	# of stops	% of stops	# of stops	% of stops
Male	1,116	72.51%	7,980	65.40%	10,452	70.11%
Female	421	27.36%	4,215	34.54%	4,320	28.98%
Other	2	0.13%	7	0.06%	137	0.92%
Total	1,539	100.00%	12,202	100.00%	14,909	100.00%

Males made up the majority of drivers stopped, regardless of race/ethnicity. The percentage of male drivers stopped was about equal for both White (62.3%) and Black (61.9%) drivers. Males made up a somewhat higher percentage of Hispanic (72.3%) and American Indian (72.5%) drivers stopped. Males made up 65.4% of Asian drivers stopped.

Driver Age, by Driver Race/Ethnicity

Table 8 presents the age of all drivers stopped, by race/ethnicity.

Table 8. 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	82,513	24.55%	49,200	25.88%	16,937	28.91%
25 to 34	83,049	24.71%	60,201	31.66%	17,477	29.84%
35 to 44	60,192	17.91%	35,293	18.56%	12,708	21.69%
45 to 54	49,145	14.62%	23,190	12.20%	7,297	12.46%
55 to 64	37,954	11.29%	15,587	8.20%	3,185	5.44%
65 and older	23,270	6.92%	6,663	3.50%	972	1.66%
Total	336,123	100.00%	190,134	100.00%	58,576	100.00%
	American Indian		*Asian*		*Unknown*	
	# of stops	% of stops	# of stops	% of stops	# of stops	% of stops
15 to 24	263	17.09%	2,644	21.67%	3,774	25.31%
25 to 34	471	30.60%	3,082	25.26%	4,635	31.09%
35 to 44	347	22.55%	2,384	19.54%	3,053	20.48%
45 to 54	279	18.13%	2,072	16.98%	1,925	12.91%
55 to 64	129	8.38%	1309	10.73%	1078	7.23%
65 and older	50	3.25%	711	5.83%	444	2.98%
Total	1,539	100.00%	12,202	100.00%	14,909	100.00%

Younger drivers (age 15–34) made up 49.3% of White drivers stopped, but 57.5% of Black drivers and 58.7% of Hispanic drivers stopped. Asian drivers had the lowest percentage of younger 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:

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

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 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 9.

Table 9. 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, 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:

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

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.

Statewide DIs for driver stops, and for events following the stop, for each driver racial/ethnic group are displayed in Table 10.

To illustrate how the data is presented in Table 10, the "Driver Stopped" section of Table 10 shows that Black drivers made up 19.58% of Virginia's driving-age population, yet they made up 30.99% of the drivers stopped in Virginia. The comparison of the percentage of Black drivers stopped to the percentage of Virginia's statewide Black driving-age population produces a traffic stop DI of 1.6 for Black drivers statewide (30.99%/19.58% = 1.6).

For another example of how the data in Table 10 is presented, the "Outcome of Stop" section of this report shows that Black drivers made up 30.99% of the drivers stopped in Virginia, but they made up 36.39% 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 1.2 for Black drivers statewide (36.39%/30.99%= 1.2).

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 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 Falls Church City Sheriff's Office had an extremely high driver stop DI of 94.6 for American Indian drivers. This group made up only 0.35% of the jurisdiction's total driving-age population, but it made up 33% of the drivers stopped by the LEA. In this case, the LEA reported only 3 traffic stops, 1 of which involved an American Indian driver. The driver stop DI was therefore calculated as:

$$\frac{\text{33\% (the percentage of all stops that involved American Indian drivers)}}{\text{0.35\% (the percentage of driving-age population that was American Indian)}} = 94.6$$

33% is disproportionately higher than 0.35%, resulting in the extremely high DI of 94.6. In this particular 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.)

Table 10.

Traffic Stop Report: VIRGINIA STATEWIDE

Stops Dated July 1, 2020-March 31, 2021

	Total	White	Black-African American	Hispanic (any race)	American Indian or Alaska Native	Asian-Other Pacific Islander	Race or Ethnicity Unknown
Population Demographics							
Number Age 15+ in CY2019 Population	6,989,921	4,480,087	1,368,801	605,082	21,956	513,995	~
Percent Age 15+ in CY2019 Population	100.00%	64.09%	19.58%	8.66%	0.31%	7.35%	~
Drivers Stopped							
Number of Drivers Age 15+ Stopped	613,483	336,123	190,134	58,576	1,539	12,202	14,909
Percent of Drivers Age 15+ Stopped	100.00%	54.79%	30.99%	9.55%	0.25%	1.99%	2.43%
Disparity Index		0.9	1.6	1.1	0.8	0.3	~
Reason for Stop							
Number Stopped for Traffic Violation	523,177	288,606	158,352	50,401	1,362	10,900	13,556
Percent Stopped for Traffic Violation	100.00%	55.16%	30.27%	9.63%	0.26%	2.08%	2.59%
Disparity Index		1.0	1.0	1.0	1.0	1.0	1.1
Number Stopped for Equipment Violation	70,250	37,106	25,742	5,451	138	924	889
Percent Stopped for Equipment Violation	100.00%	52.82%	36.64%	7.76%	0.20%	1.32%	1.27%
Disparity Index		1.0	1.2	0.8	0.8	0.7	0.5
Number Stopped for Call for Service	6,868	3,351	1,903	1,316	15	189	94
Percent Stopped for Call for Service	100.00%	48.79%	27.71%	19.16%	0.22%	2.75%	1.37%
Disparity Index		0.9	0.9	2.0	0.9	1.4	0.6
Number Stopped for Terry Stop	2,950	1,483	916	422	8	78	43
Percent Stopped for Terry Stop	100.00%	50.27%	31.05%	14.31%	0.27%	2.64%	1.46%
Disparity Index		0.9	1.0	1.5	1.1	1.3	0.6
Number Stopped for Other Reason	10,238	5,577	3,221	986	16	111	327
Percent Stopped for Other Reason	100.00%	54.47%	31.46%	9.63%	0.16%	1.08%	3.19%
Disparity Index		1.0	1.0	1.0	0.6	0.5	1.3
Outcome of Stop							
Number of Stops with Warning Issued	191,933	105,908	62,465	15,277	460	4,209	3,614
Percent of Stops with Warning Issued	100.00%	55.18%	32.55%	7.96%	0.24%	2.19%	1.88%
Disparity Index		1.0	1.1	0.8	1.0	1.1	0.8
Number of Stops with Citation/Summons issued	388,833	214,570	115,433	39,603	1,024	7,462	10,741
Percent of Stops with Citation/Summons issued	100.00%	55.18%	29.69%	10.19%	0.26%	1.92%	2.76%
Disparity Index		1.0	1.0	1.1	1.0	1.0	1.1
Number of Stops with Driver Arrested	12,344	5,437	4,492	2,030	14	218	153
Percent of Stops with Driver Arrested	100.00%	44.05%	36.39%	16.45%	0.11%	1.77%	1.24%
Disparity Index		0.8	1.2	1.7	0.5	0.9	0.5
Number of Stops with No Enforcement Action	20,373	10,208	7,744	1,666	41	313	401
Percent of Stops with No Enforcement Action	100.00%	50.11%	38.01%	8.18%	0.20%	1.54%	1.97%
Disparity Index		0.9	1.2	0.9	0.8	0.8	0.8
Additional Details of Stop							
Number of Stops with No Search or Passenger Arrest	582,073	321,482	177,796	54,959	1,515	11,852	14,469
Percent of Stops with No Search or Passenger Arrest	100.00%	55.23%	30.55%	9.44%	0.26%	2.04%	2.49%
Disparity Index		1.0	1.0	1.0	1.0	1.0	1.0
Number of Stops with Search Only	18,581	7,869	7,950	2,266	14	232	250
Percent of Stops with Search Only	100.00%	42.35%	42.79%	12.20%	0.08%	1.25%	1.35%
Disparity Index		0.8	1.4	1.3	0.3	0.6	0.6
Number of Stops with Passenger Arrest Only	7,691	4,283	2,353	850	4	75	126
Percent of Stops with Passenger Arrest Only	100.00%	55.69%	30.59%	11.05%	0.05%	0.98%	1.64%
Disparity Index		1.0	1.0	1.2	0.2	0.5	0.7
Number of Stops with Search and Passenger Arrest	5,138	2,489	2,035	501	6	43	64
Percent of Stops with Search and Passenger Arrest	100.00%	48.44%	39.61%	9.75%	0.12%	0.84%	1.25%
Disparity Index		0.9	1.3	1.0	0.5	0.4	0.5

Data sources:

Community Policing Data Collection, Virginia Department of State Police, May 2021.

Vintage 2019 postcensal estimates of the resident population of the United States (April 1, 2010, July 1, 2010-July 1, 2019), by year, county, single-year of age, bridged race, Hispanic origin, and sex. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of July 9 2020.

Prepared by: Virginia Department of Criminal Justice Services Research Center, June 2021.

Search can involve passenger, driver, vehicle, or some combination of the three.

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 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 or Asian drivers in Virginia.

- Black drivers were stopped at higher rates than White drivers. Although only 19.6% of Virginia's driving-age population was Black, 31% of drivers stopped were Black. Black drivers were overrepresented among stopped drivers regardless of the reason that a traffic stop was initiated.
- Black drivers who were stopped were searched at higher rates than White drivers. 5.2% of stopped Black drivers had a search of their person, a passenger or vehicle conducted, compared to 3.1% of White drivers.
- Black drivers who were stopped were arrested at higher rates than White drivers. 2.4% of Black drivers stopped were arrested, compared to 1.6% of White drivers.
- Hispanic drivers (of any race) were also stopped at higher rates than White drivers, although not as much so as Black drivers. Although Hispanics made up only 8.7% of Virginia's driving-age population, they made up 9.5% of drivers stopped. Hispanic drivers were overrepresented among most, but not all, of the reasons that a traffic stop was initiated.
- Hispanic drivers who were stopped were searched at higher rates than White drivers. 4.7% of stopped Hispanic drivers had a search of their person, a passenger or vehicle conducted, as compared to 3.1% of White drivers.
- Hispanic drivers who were stopped were arrested at higher rates than White drivers or Black drivers. 3.5% of stopped Hispanic drivers were arrested, compared to 1.6% of White drivers and 2.4% of Black drivers.
- Statewide, White, American Indian, and Asian drivers were stopped at rates below their representation in the driving-age population. This underrepresentation occurred not just for drivers stopped, but also for all related measures including reasons for stops, searches of drivers, passengers and vehicles, and stop outcomes such as arrests or citations.
- Male drivers made up similar percentages of both White (62.3%) and Black (61.9%) drivers stopped. Males made up a somewhat higher percentage of Hispanic (72.3%) and American Indian (72.5%) drivers stopped. Males made up 65.4% of Asian drivers stopped.

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 A through D.

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 368 LEAs in Virginia. However, only 305 of these agencies were included in the traffic stop analysis. 63 agencies were not included (see Appendix E) for reasons such as:

- The agencies are no longer operational.
- The agencies did not begin reporting traffic stop data to VSP until after March 31, 2021.
- The agencies have no primary law-enforcement duties (typically a sheriff's office that provides staff and security for jails and courthouses).
- The agencies' jurisdictions do not include public roadways (typically agencies serving some colleges or universities or commercial properties).

The traffic stop analyses for these 305 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 Disparity Index (DI) was calculated for each group of drivers who were stopped by VSP statewide, and for the events following the stop. Statewide driving age population age 15 and older by race and ethnic group was used to calculate DIs for VSP driver stops, searches, and arrests.

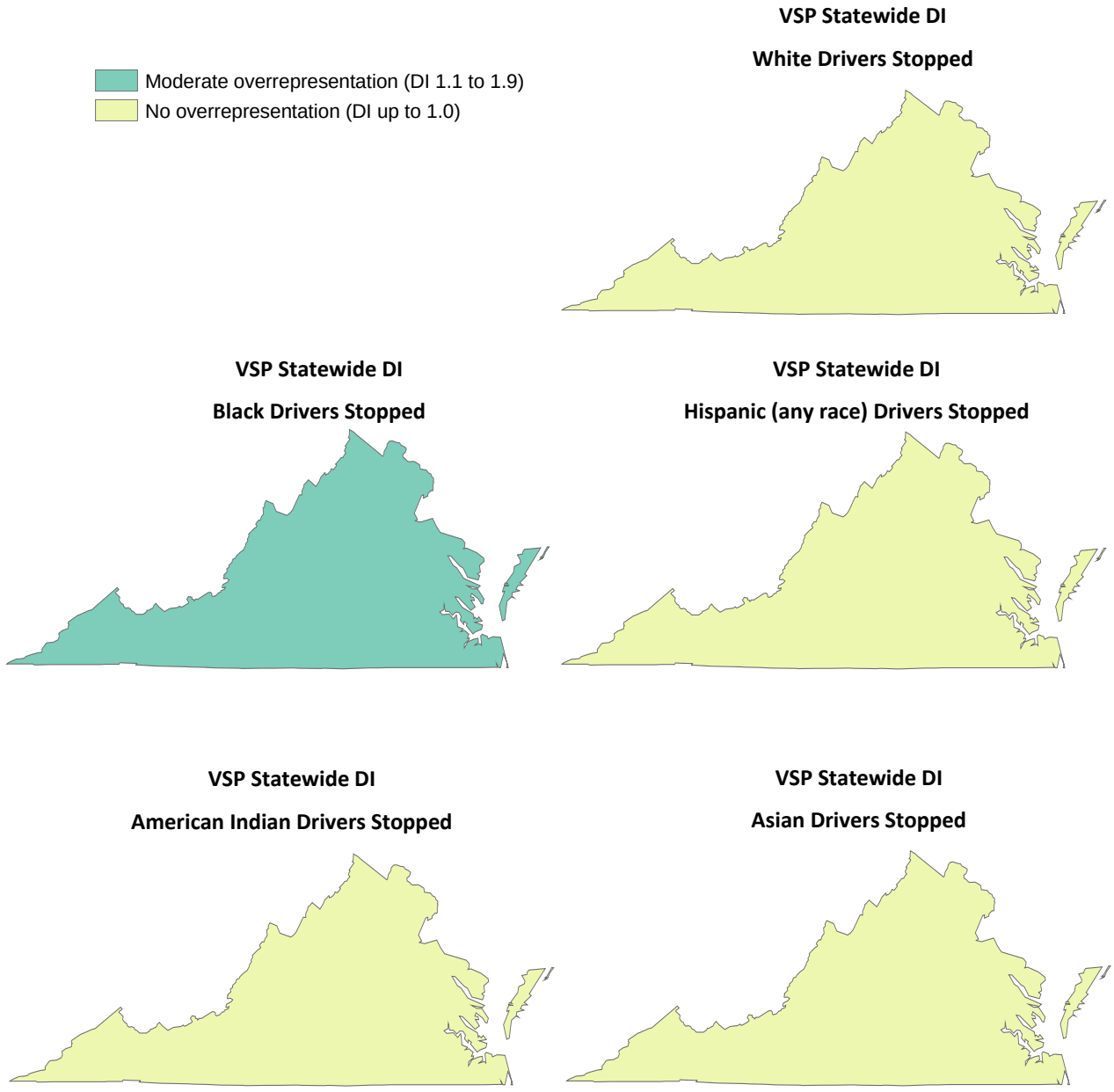
Due to limitations in the data, DCJS was unable to accurately calculate DIs for driver stops or post-stop events for each of the seven individual VSP divisions. These data limitations have been corrected, and division-level DIs will be calculated and reported in the next CPA report.

Detailed DI information for VSP traffic stops, as well as for events that occurred after the stops were made, are shown in Appendix A.

Geographic Presentation of VSP Driver Stop Disparity Indexes (DIs)

The maps in Figure 6 illustrate which driver racial/ethnic groups had moderate or no overrepresentation for driver stops conducted by VSP. Black drivers were the only group moderately overrepresented in VSP driver stops; there was no overrepresentation of any other driver racial/ethnic group among VSP stops. No driver racial/ethnic group had high overrepresentation in stops conducted by VSP.

Figure 6
VSP Maps for 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, passenger, 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 person (driver or passenger), vehicle, or any combination 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 because racial/ethnic data was not collected for passengers.

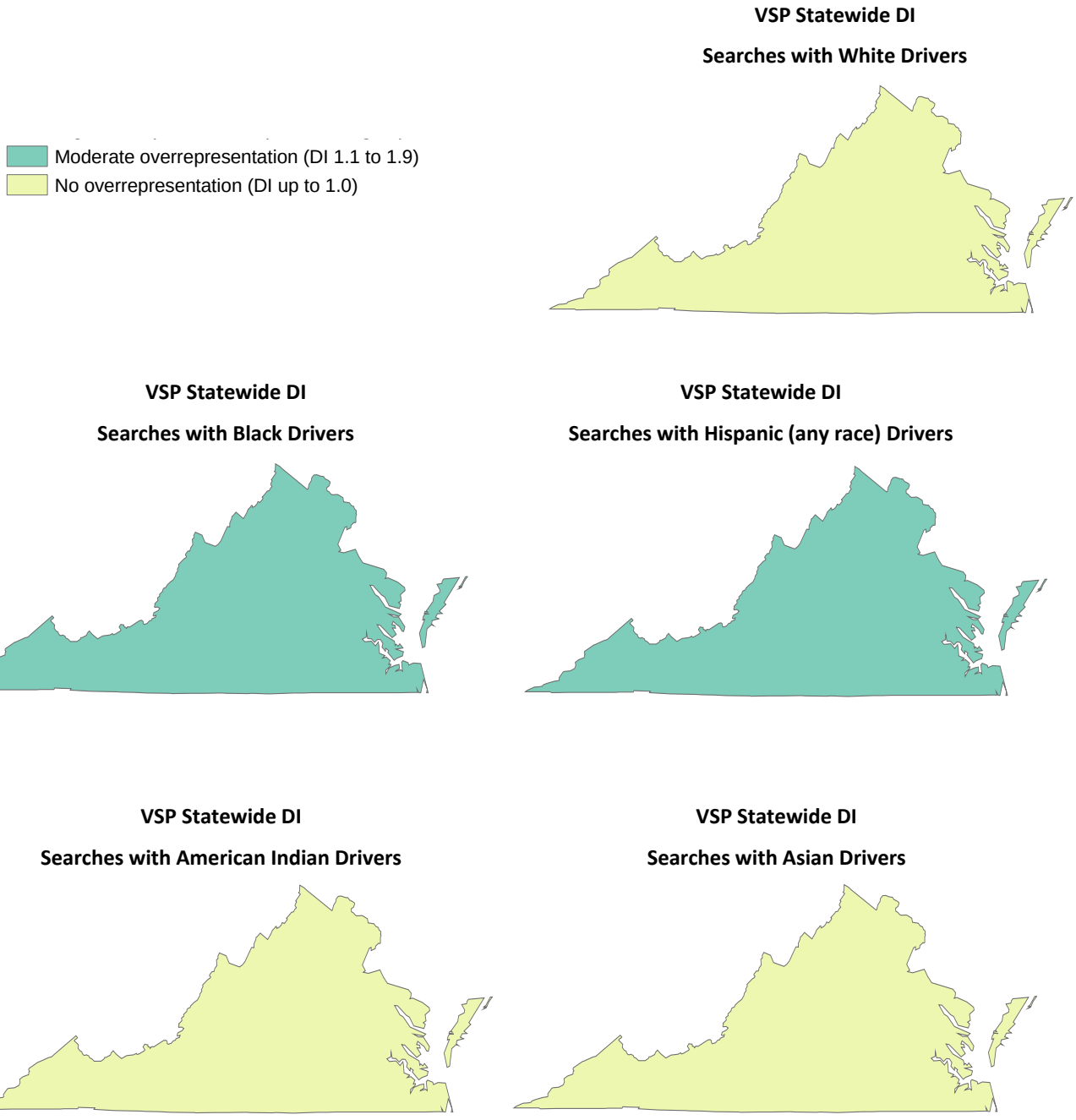
The DIs for events following a traffic stop can be calculated more precisely than the DI regarding whether or not a driver was stopped in the first place. The driver stop DI is based on a comparison of the percentage of drivers in each racial/ethnic group stopped by VSP statewide to the percentage of driving-age individuals in each group in the resident population statewide. 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.

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 the driver was arrested is known.

Geographic Presentation of VSP Search DIs

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

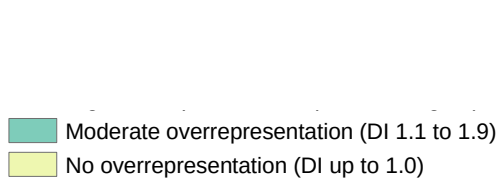
Figure 7
VSP Statewide Maps for Searches by Driver Race/Ethnicity



Geographic Presentation of VSP Driver Arrest DIs

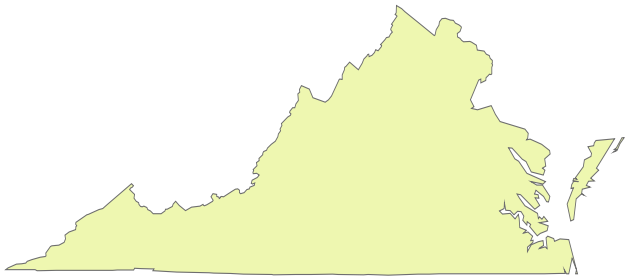
The maps in Figure 8 illustrate which driver racial/ethnic groups had moderate or no overrepresentation for driver arrests conducted by VSP. Black and Hispanic drivers were moderately overrepresented in driver arrests conducted by VSP. White, American Indian, and Asian drivers were underrepresented in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



VSP Statewide DI

White Driver Arrests

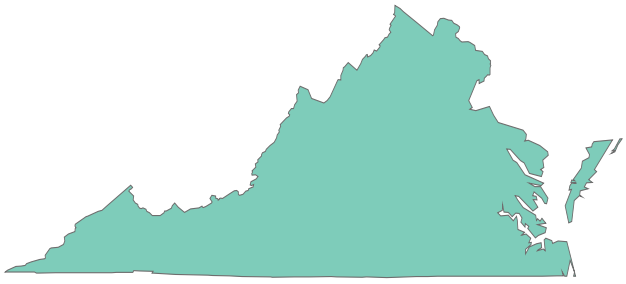


VSP Statewide DI

Black Driver Arrests

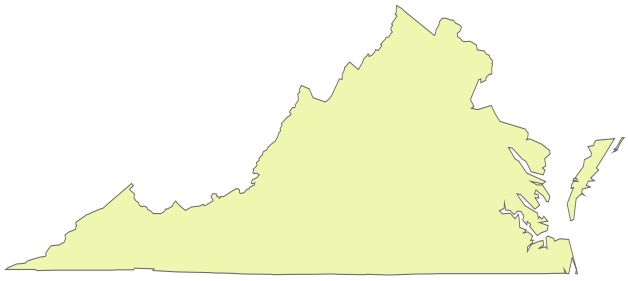
VSP Statewide DI

Hispanic (any race) Driver Arrests



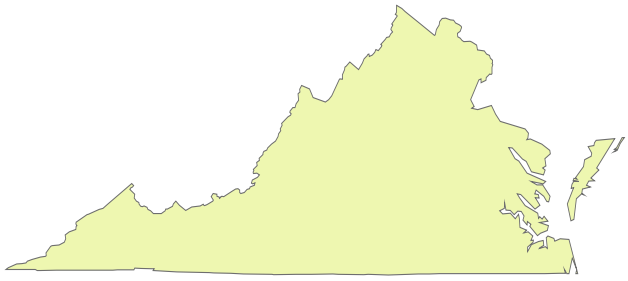
VSP Statewide DI

American Indian Driver Arrests



VSP Statewide DI

Asian Driver Arrests

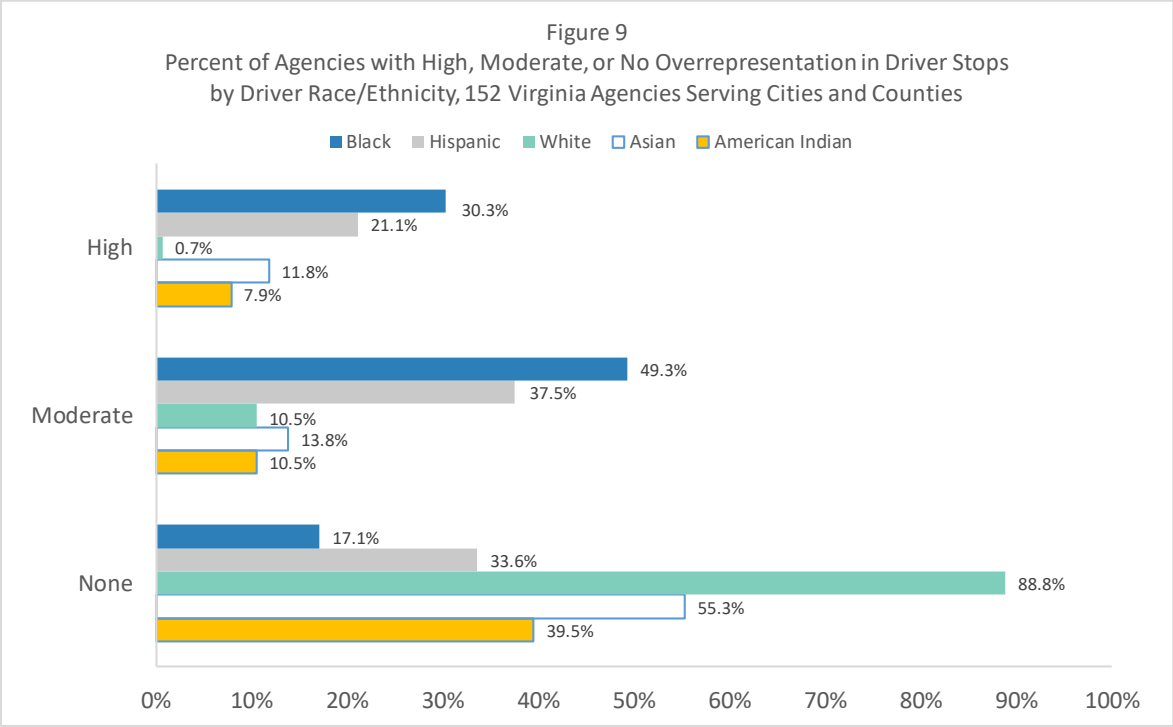


City and County Agency Traffic Stop Analysis

These 152 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).

Driver Stop DIs for City and County Agencies

Figure 9 shows the percentages of the 152 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 minority drivers stopped when compared to the minority resident driving-age population.



The percentages seen in Figure 9 show that, across all 152 agencies:

- 30.3% of city and county agencies had high overrepresentation in stops of Black drivers, 21.1% of agencies had the same for Hispanic drivers, 7.9% of agencies had the same for American Indian drivers, and 11.8% had the same for Asian drivers. Less than 1% of agencies had high overrepresentation for White drivers.
- 49.3% of city and county agencies had moderate overrepresentation in stops of Black drivers, and 37.5% of agencies had the same for Hispanic drivers. 10.5% had the same for American Indian drivers and 13.8% of agencies had the same for Asian drivers. 10.5% of agencies had the same for White drivers.
- Only 17.1% of city and county agencies had no overrepresentation in stops of Black drivers, and only 33.6% of agencies had the same for Hispanic drivers. 39.5% of agencies had the same for American Indian drivers, and 55.3% of agencies had the same for Asian drivers. On the other hand, nearly 90% of agencies had the same for White drivers.

City and county agencies with zero stops, and therefore DIs of zero, are not shown in Figure 9. 3.3% of these agencies (5) did not stop any Black drivers, 7.9% of these agencies (12) did not stop any Hispanic drivers, 42.1% (64) of the agencies did not stop any American Indian drivers, and 19.1% (29) of these agencies did not stop any Asian drivers. White drivers were stopped by all 152 city and county agencies.

Driver Stop DIs for Individual Agencies

Tables 15a–15d show, for each of the 152 agencies serving cities and counties, the driver stop DI calculated for each driver racial/ethnic group (that is, how many drivers in each group were stopped relative to the group's driving-age representation in the resident population of the locality served by the agency). The number of stops made by each agency for drivers in each group is also shown. The numbers of stops reported by each agency will vary due to traffic volumes in each area, and because different agencies reported data for different periods of time for the nine-month period July 1, 2020 – March 31, 2021 (that is, some agencies with high traffic volumes may have reported fewer stops than agencies with lower traffic volumes because the high-volume agency may have reported only six months of data). The number of days of data reported for each agency ("Number of Traffic Days") is also shown in the tables (273 days = July 1, 2020 – March 31, 2021).

Tables are shown for Black, Hispanic, American Indian, and Asian drivers. No DI table is shown for White drivers because the number of agencies with DIs indicating that White drivers were overrepresented was very small (these DIs can be seen in the detailed agency-level tables in Appendix B).

DIs for the joint agencies York-Poquoson Sheriff's Office and Williamsburg-James City County Sheriff's Office were calculated based on the driving-age resident population figures for the joint localities served by each Sheriff's Office.

Several cautions should be kept in mind when examining the DIs for each agency in the tables that follow:

- Driver stop DIs calculated for agencies with a very small resident population and very small numbers of stops are suspect due to the small numbers involved and should not be considered meaningful. This applies to DIs for all racial/ethnic groups. See the previous section *Statewide Disparity Index (DI)* for more explanation.
- As discussed in the section *Statewide Disparity Index (DI)*, driver stop DIs were calculated using each racial/ethnic group's percentage of the resident driving-age population of the area served by the agency. The resident population percentages do not necessarily represent the percentages of drivers in the area. For example, the Carroll County Sheriff's Office had a high Black driver stop DI of 21.7. An examination of the stops for this agency showed that the vast majority of the stops were made on an interstate highway that runs through Carroll County; therefore, the number of Black drivers subject to being stopped by this agency was much higher than the relatively small percentage of Black residents in the county's resident population. Black drivers were less than 1% of the county's population.

Table 15a. Agency Driver Stop Disparity Indexes (DIs) for Black Drivers 152 Agencies Serving Cities and Counties			
Agency	*Black Driver DI*	*Number of Stops*	*Number of Traffic Days*
Accomack County Sheriff's Office	1.8	172	270
Albemarle County Police Department	2	475	273
Albemarle County Sheriff's Office	1.4	5	256
Alexandria City Sheriff's Office	0.7	4	259
Alexandria Police Department	1.7	3,964	273
Alleghany County Sheriff's Office	2.3	74	273
Amelia County Sheriff's Office	1.8	189	272
Amherst County Sheriff's Office	1.5	582	270
Appomattox County Sheriff's Office	1.4	240	271
Arlington County Police Department	3.3	3,777	183
Arlington County Sheriff's Office	2.3	27	257
Augusta County Sheriff's Office	1.9	342	273
Bath County Sheriff's Office	2	7	264
Bedford County Sheriff's Office	2.7	452	273
Bland County Sheriff's Office	3.4	218	272
Botetourt County Sheriff's Office	3.7	579	273
Bristol Police Department	1.2	99	142
Brunswick County Sheriff's Office	0.9	6,505	273
Buchanan County Sheriff's Office	0.2	3	273
Buckingham County Sheriff's Office	0.9	65	270
Buena Vista Police Department	2	64	175
Campbell County Sheriff's Office	1.8	201	248
Caroline County Sheriff’s Office	1.4	335	270
Carroll County Sheriff's Office	21.7	674	265
Charlotte County Sheriff's Office	1.3	333	273
Charlottesville Police Department	1.6	272	273
Chesapeake City Sheriff's Office	1.4	18	258
Chesapeake Police Department	1.7	9,760	273
Chesterfield County Police Department	1.8	11,455	273
Chesterfield County Sheriff's Office	1.7	39	204
Clarke County Sheriff's Office	2.4	68	273
Colonial Heights Police Department	3.8	3,722	273
Covington Police Department	0.7	13	181
Craig County Sheriff's Office	2.3	8	273
Culpeper County Sheriff's Office	1.3	44	268
Cumberland County Sheriff's Office	0.7	96	271

Table 15a. Agency Driver Stop Disparity Indexes (DIs) for Black Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Black Driver DI*	*Number of Stops*	*Number of Traffic Days*
Danville Police Department	1.2	2,197	273
Dickenson County Sheriff's Office	1.6	3	272
Dinwiddie County Sheriff's Office	1.4	2,146	273
Emporia City Sheriff's Office	0.5	268	272
Emporia Police Department	0.7	2,799	253
Essex County Sheriff's Office	0.8	88	170
Fairfax City Police	2.4	185	273
Fairfax County Police Department	2.2	3,654	273
Fairfax County Sheriff's Office	2.1	34	273
Falls Church City Sheriff's Office	0	0	124
Falls Church Police Department	3.5	107	242
Fauquier County Fire Marshal's Office	0	0	1
Fauquier County Sheriff's Office	1.9	922	272
Floyd County Sheriff's Office	2	51	273
Fluvanna County Sheriff's Office	1.6	344	272
Franklin County Sheriff's Office	2	126	272
Franklin Police Department	1.3	649	241
Frederick County Sheriff's Office	2.5	654	273
Fredericksburg City Sheriff's Office	1.8	8	230
Fredericksburg Police Department	1.7	114	57
Galax Police Department	0.9	61	273
Giles County Sheriff's Office	3.4	27	269
Gloucester County Sheriff's Office	2.3	284	273
Goochland County Sheriff's Office	1.4	326	272
Grayson County Sheriff's Office	0.5	12	272
Greene County Sheriff's Office	2	118	267
Greensville County Sheriff's Office	0.5	2,017	273
Halifax County Sheriff's Office	1.2	93	273
Hampton Police Division	1.3	4,349	273
Hanover County Sheriff's Office	3.7	4,855	273
Harrisonburg Police Department	1.7	189	182
Henrico Police Department	1.5	6,090	183
Henry County Sheriff's Office	1.1	455	273
Highland County Sheriff's Office	2.1	2	242
Hopewell City Sheriff's Office	1.1	1,509	273
Hopewell Police Department	1.3	509	182
Isle Of Wight County Sheriff's Office	2.3	567	182
James City County Police Department	2.4	810	273
King And Queen County Sheriff's Office	1	487	273

Table 15a. Agency Driver Stop Disparity Indexes (DIs) for Black Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Black Driver DI*	*Number of Stops*	*Number of Traffic Days*
King George County Sheriff's Office	1.8	637	273
King William Sheriff's Office	1.4	238	273
Lancaster County Sheriff's Office	1.5	170	272
Lee County Sheriff's Office	0	0	84
Lexington Police Department	0.8	57	272
Loudoun County Sheriff's Office	1.6	1,458	273
Louisa County Sheriff's Office	1.4	270	273
Lunenburg County Sheriff's Office	1.1	64	268
Lynchburg City Sheriff's Office	2.5	2	47
Lynchburg Police Department	1.5	1,072	273
Madison County Sheriff's Office	1.9	114	273
Manassas Park Police Department	1.1	555	273
Manassas Police Department	1.4	711	273
Martinsville Police Department	1	1,341	273
Mathews County Sheriff's Office	1.5	79	273
Mecklenburg Sheriff's Office	1.3	730	183
Middlesex County Sheriff's Office	1.1	92	269
Montgomery County Sheriff's Office	2.9	254	273
Nelson County Sheriff's Office	1.4	190	273
New Kent Sheriff's Office	1.9	791	273
Newport News City Sheriff's Office	1	3	218
Newport News Police Department	1.5	6,043	181
Norfolk Police Department	1.6	2,256	153
Northampton County Sheriff's Office	0.8	446	202
Northumberland County Sheriff's Office	1.3	81	91
Norton Police Department	0.9	37	273
Nottoway County Sheriff's Office	1	49	264
Orange County Sheriff's Office	1.7	345	273
Page County Sheriff's Office	1.3	19	273
Patrick County Sheriff's Office	2.1	93	257
Petersburg Bureau Of Police	1	681	213
Petersburg City Sheriff's Office	0.7	33	239
Pittsylvania County Sheriff's Office	1.4	123	273
Poquoson Police Department	11.4	45	181
Portsmouth City Sheriff's Office	1.2	32	80
Portsmouth Police Department	1.3	1,558	273
Powhatan Sheriff's Office	2	407	273
Prince Edward County Sheriff's Department	1.1	287	174
Prince George County Police Department	1.6	1,515	273

Table 15a. Agency Driver Stop Disparity Indexes (DIs) for Black Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Black Driver DI*	*Number of Stops*	*Number of Traffic Days*
Prince William County Police Department	1.3	6,050	273
Prince William County Sheriff's Office	1.4	28	273
Pulaski County Sheriff's Office	1.9	286	272
Radford City Police Department	2	314	272
Rappahannock County Sheriff's Office	1.6	132	273
Richmond County Sheriff's Office	1.4	65	175
Richmond Police Department	1.6	1,991	238
Roanoke City Police Department	1.5	2,071	272
Roanoke County Police Department	2.3	13	11
Rockbridge County Sheriff's Office	4.7	418	273
Rockingham County Sheriff's Office	4.2	170	181
Russell County Sheriff’s Office	2	3	267
Salem Police Department	2.4	400	273
Scott County Sheriff’s Office	1.9	6	171
Shenandoah County Sheriff's Office	2.2	36	212
Smyth County Sheriff's Office	5.4	546	183
Southampton County Sheriff's Office	1.5	649	271
Spotsylvania County Sheriff's Office	1.6	1,143	273
Stafford County Sheriff's Office	1.6	2,418	273
Staunton Police Department	1.2	77	158
Suffolk City Sheriff's Office	0.8	1	126
Suffolk Police Department	1.4	3,942	273
Surry County Sheriff's Office	1	145	150
Sussex County Sheriff's Office	0.7	1,809	273
Tazewell County Sheriff's Office	0.7	24	268
Virginia Beach City Sheriff's Office	2.6	3	57
Virginia Beach Police Department	2	5,981	273
Warren County Sheriff's Office	1.8	310	273
Washington County Sheriff's Office	6.6	975	272
Waynesboro Police Department	1.3	56	135
Westmoreland County Sheriff's Office	1.2	512	273
Williamsburg Police Department	2	891	273
Williamsburg-James City County Sheriff's Office	0	0	35
Winchester City Sheriff's Office	0	0	107
Winchester Police Department	1.4	442	273
Wise County Sheriff's Office	0.8	41	273
Wythe County Sheriff's Office	4.7	596	257
York-Poquoson Sheriff's Office	2.2	545	181

Table 15b. Agency Driver Stop Disparity Indexes (DIs) for Hispanic (any race) Drivers 152 Agencies Serving Cities and Counties			
Agency	*Hispanic Driver DI*	*Number of Stops*	*Number of Traffic Days*
Accomack County Sheriff's Office	1.2	28	270
Albemarle County Police Department	1.7	211	273
Albemarle County Sheriff's Office	0.6	1	256
Alexandria City Sheriff's Office	1.3	5	259
Alexandria Police Department	1.2	1,919	273
Alleghany County Sheriff's Office	3.5	34	273
Amelia County Sheriff's Office	2.4	32	272
Amherst County Sheriff's Office	2.3	99	270
Appomattox County Sheriff's Office	1	18	271
Arlington County Police Department	1.3	2,324	183
Arlington County Sheriff's Office	1.3	24	257
Augusta County Sheriff's Office	1.5	145	273
Bath County Sheriff's Office	0	0	264
Bedford County Sheriff's Office	1.2	56	273
Bland County Sheriff's Office	2.4	33	272
Botetourt County Sheriff’s Office	3.5	239	273
Bristol Police Department	1.2	28	142
Brunswick County Sheriff's Office	3.7	1,054	273
Buchanan County Sheriff's Office	0	0	273
Buckingham County Sheriff's Office	2.2	10	270
Buena Vista Police Department	0.4	5	175
Campbell County Sheriff's Office	1.3	23	248
Caroline County Sheriff’s Office	1.9	77	270
Carroll County Sheriff’s Office	1.8	191	265
Charlotte County Sheriff's Office	3.5	56	273
Charlottesville Police Department	1.4	69	273
Chesapeake City Sheriff's Office	0	0	258
Chesapeake Police Department	0.7	737	273
Chesterfield County Police Department	1.5	3,135	273
Chesterfield County Sheriff's Office	0.7	5	204
Clarke County Sheriff's Office	2.4	75	273
Colonial Heights Police Department	0.9	314	273
Covington Police Department	0.4	1	181
Craig County Sheriff's Office	1.2	8	273
Culpeper County Sheriff's Office	1.4	32	268
Cumberland County Sheriff's Office	1.2	15	271

Table 15b. Agency Driver Stop Disparity Indexes (DIs) for Hispanic (any race) Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Hispanic Driver DI*	*Number of Stops*	*Number of Traffic Days*
Danville Police Department	1	139	273
Dickenson County Sheriff's Office	0.7	2	272
Dinwiddie County Sheriff's Office	2.2	333	273
Emporia City Sheriff's Office	2	98	272
Emporia Police Department	0.4	136	253
Essex County Sheriff's Office	2.5	27	170
Fairfax City Police	1	215	273
Fairfax County Police Department	1.6	3,900	273
Fairfax County Sheriff's Office	1.1	27	273
Falls Church City Sheriff's Office	0	0	124
Falls Church Police Department	2.4	147	242
Fauquier County Fire Marshal's Office	0	0	1
Fauquier County Sheriff's Office	1.8	881	272
Floyd County Sheriff's Office	1.3	35	273
Fluvanna County Sheriff's Office	1.6	71	272
Franklin County Sheriff's Office	2.2	38	272
Franklin Police Department	0.1	2	241
Frederick County Sheriff's Office	1.2	523	273
Fredericksburg City Sheriff's Office	0.6	1	230
Fredericksburg Police Department	1.1	28	57
Galax Police Department	0.8	96	273
Giles County Sheriff's Office	1.5	11	269
Gloucester County Sheriff's Office	0.8	39	273
Goochland County Sheriff's Office	2	72	272
Grayson County Sheriff's Office	3	31	272
Greene County Sheriff's Office	1.8	70	267
Greensville County Sheriff's Office	4.1	565	273
Halifax County Sheriff's Office	0.7	3	273
Hampton Police Division	0.5	188	273
Hanover County Sheriff's Office	1.8	671	273
Harrisonburg Police Department	1.3	312	182
Henrico Police Department	1	731	183
Henry County Sheriff's Office	1.2	96	273
Highland County Sheriff's Office	2.5	2	242
Hopewell City Sheriff's Office	1.2	300	273
Hopewell Police Department	0.6	45	182
Isle Of Wight County Sheriff's Office	0.6	18	182
James City County Police Department	1.3	171	273
King And Queen County Sheriff's Office	1.3	61	273

Table 15b. Agency Driver Stop Disparity Indexes (DIs) for Hispanic (any race) Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Hispanic Driver DI*	*Number of Stops*	*Number of Traffic Days*
King George County Sheriff's Office	1.2	133	273
King William Sheriff's Office	1.1	26	273
Lancaster County Sheriff's Office	1	8	272
Lee County Sheriff’s Office	0	0	84
Lexington Police Department	0.6	14	272
Loudoun County Sheriff's Office	1.6	2,324	273
Louisa County Sheriff's Office	1.7	58	273
Lunenburg County Sheriff’s Office	1.8	13	268
Lynchburg City Sheriff's Office	0	0	47
Lynchburg Police Department	0.4	41	273
Madison County Sheriff's Office	3.6	67	273
Manassas Park Police Department	1.2	1,499	273
Manassas Police Department	1	1,214	273
Martinsville Police Department	1.3	189	273
Mathews County Sheriff's Office	0.4	5	273
Mecklenburg Sheriff's Office	3.4	152	183
Middlesex County Sheriff's Office	1.8	21	269
Montgomery County Sheriff's Office	1.2	76	273
Nelson County Sheriff's Office	1.8	74	273
New Kent Sheriff's Office	1.5	136	273
Newport News City Sheriff's Office	0	0	218
Newport News Police Department	0.3	222	181
Norfolk Police Department	0.6	170	153
Northampton County Sheriff’s Office	1	127	202
Northumberland County Sheriff's Office	0.8	7	91
Norton Police Department	0.2	6	273
Nottoway County Sheriff's Office	1.2	6	264
Orange County Sheriff's Office	2.1	153	273
Page County Sheriff's Office	1.7	18	273
Patrick County Sheriff's Office	1.7	36	257
Petersburg Bureau Of Police	0.1	5	213
Petersburg City Sheriff's Office	0	0	239
Pittsylvania County Sheriff’s Office	1.3	12	273
Poquoson Police Department	1.2	10	181
Portsmouth City Sheriff's Office	0.5	1	80
Portsmouth Police Department	0.6	55	273
Powhatan Sheriff's Office	2.1	85	273
Prince Edward County Sheriff's Department	2	44	174
Prince George County Police Department	0.7	155	273

Table 15b. Agency Driver Stop Disparity Indexes (DIs) for Hispanic (any race) Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Hispanic Driver DI*	*Number of Stops*	*Number of Traffic Days*
Prince William County Police Department	1.2	5,879	273
Prince William County Sheriff's Office	1	21	273
Pulaski County Sheriff's Office	3	125	272
Radford City Police Department	1	43	272
Rappahannock County Sheriff's Office	1.7	134	273
Richmond County Sheriff's Office	0.4	4	175
Richmond Police Department	1	162	238
Roanoke City Police Department	0.9	248	272
Roanoke County Police Department	2.5	6	11
Rockbridge County Sheriff's Office	3.4	150	273
Rockingham County Sheriff's Office	1.7	180	181
Russell County Sheriff's Office	0	0	267
Salem Police Department	0.9	62	273
Scott County Sheriff's Office	0.3	1	171
Shenandoah County Sheriff's Office	1.7	60	212
Smyth County Sheriff's Office	7.5	475	183
Southampton County Sheriff's Office	2.6	56	271
Spotsylvania County Sheriff's Office	1	375	273
Stafford County Sheriff's Office	1.1	1,047	273
Staunton Police Department	1.7	27	158
Suffolk City Sheriff's Office	0	0	126
Suffolk Police Department	0.7	189	273
Surry County Sheriff's Office	2.2	16	150
Sussex County Sheriff's Office	4.8	641	273
Tazewell County Sheriff's Office	1	9	268
Virginia Beach City Sheriff's Office	0	0	57
Virginia Beach Police Department	0.6	729	273
Warren County Sheriff's Office	1.6	260	273
Washington County Sheriff's Office	0.9	121	272
Waynesboro Police Department	0.8	20	135
Westmoreland County Sheriff's Office	1.2	113	273
Williamsburg Police Department	1.1	193	273
Williamsburg-James City County Sheriff's Office	6.2	1	35
Winchester City Sheriff's Office	1	3	107
Winchester Police Department	0.9	375	273
Wise County Sheriff's Office	0.7	6	273
Wythe County Sheriff's Office	6.3	275	257
York-Poquoson Sheriff's Office	0.9	100	181

Table 15c. Agency Driver Stop Disparity Indexes (DIs) for American Indian Drivers 152 Agencies Serving Cities and Counties			
Agency	*American Indian Driver DI*	*Number of Stops*	*Number of Traffic Days*
Accomack County Sheriff's Office	0	0	270
Albemarle County Police Department	0.3	1	273
Albemarle County Sheriff's Office	0	0	256
Alexandria City Sheriff's Office	0	0	259
Alexandria Police Department	1.8	46	273
Alleghany County Sheriff's Office	0	0	273
Amelia County Sheriff's Office	0.5	1	272
Amherst County Sheriff's Office	0.5	8	270
Appomattox County Sheriff's Office	0.5	1	271
Arlington County Police Department	0.6	17	183
Arlington County Sheriff's Office	0	0	257
Augusta County Sheriff's Office	1	7	273
Bath County Sheriff's Office	0	0	264
Bedford County Sheriff's Office	0	0	273
Bland County Sheriff's Office	0.9	2	272
Botetourt County Sheriff's Office	1.9	19	273
Bristol Police Department	0	0	142
Brunswick County Sheriff's Office	2.1	83	273
Buchanan County Sheriff's Office	0	0	273
Buckingham County Sheriff's Office	0	0	270
Buena Vista Police Department	0	0	175
Campbell County Sheriff's Office	0.4	1	248
Caroline County Sheriff’s Office	0	0	270
Carroll County Sheriff's Office	1.9	11	265
Charlotte County Sheriff's Office	0.4	1	273
Charlottesville Police Department	0	0	273
Chesapeake City Sheriff's Office	0	0	258
Chesapeake Police Department	0.2	13	273
Chesterfield County Police Department	0.4	28	273
Chesterfield County Sheriff's Office	0	0	204
Clarke County Sheriff's Office	0	0	273
Colonial Heights Police Department	0.1	2	273
Covington Police Department	0	0	181
Craig County Sheriff's Office	2.1	3	273
Culpeper County Sheriff's Office	0	0	268
Cumberland County Sheriff's Office	0	0	271

Table 15c. Agency Driver Stop Disparity Indexes (DIs) for American Indian Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*American Indian Driver DI*	*Number of Stops*	*Number of Traffic Days*
Danville Police Department	0.2	2	273
Dickenson County Sheriff's Office	0	0	272
Dinwiddie County Sheriff's Office	2.4	35	273
Emporia City Sheriff's Office	0	0	272
Emporia Police Department	1.2	16	253
Essex County Sheriff's Office	0	0	170
Fairfax City Police	1.3	5	273
Fairfax County Police Department	1.2	36	273
Fairfax County Sheriff's Office	0	0	273
Falls Church City Sheriff's Office	94.6	1	124
Falls Church Police Department	0.5	1	242
Fauquier County Fire Marshal's Office	0	0	0
Fauquier County Sheriff's Office	0.1	2	272
Floyd County Sheriff's Office	0.5	1	273
Fluvanna County Sheriff's Office	0.8	3	272
Franklin County Sheriff's Office	1.1	2	272
Franklin Police Department	0	0	241
Frederick County Sheriff's Office	0.4	6	273
Fredericksburg City Sheriff's Office	0	0	230
Fredericksburg Police Department	3.8	4	57
Galax Police Department	0	0	273
Giles County Sheriff's Office	1.3	1	269
Gloucester County Sheriff's Office	0.1	1	273
Goochland County Sheriff's Office	0.2	1	272
Grayson County Sheriff's Office	0	0	272
Greene County Sheriff's Office	0.4	1	267
Greensville County Sheriff's Office	0.6	9	273
Halifax County Sheriff's Office	0	0	273
Hampton Police Division	0	0	273
Hanover County Sheriff's Office	0.9	49	273
Harrisonburg Police Department	1.8	6	182
Henrico Police Department	0.1	4	183
Henry County Sheriff's Office	0	0	273
Highland County Sheriff's Office	0	0	242
Hopewell City Sheriff's Office	0.2	3	273
Hopewell Police Department	0	0	182
Isle Of Wight County Sheriff's Office	0.3	1	182
James City County Police Department	0.5	4	273
King And Queen County Sheriff's Office	0.1	4	273
King George County Sheriff's Office	0.2	2	273

Table 15c. Agency Driver Stop Disparity Indexes (DIs) for American Indian Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*American Indian Driver DI*	*Number of Stops*	*Number of Traffic Days*
King William Sheriff's Office	0.3	4	273
Lancaster County Sheriff's Office	0	0	272
Lee County Sheriff's Office	0	0	84
Lexington Police Department	1	2	272
Loudoun County Sheriff's Office	9.8	202	273
Louisa County Sheriff's Office	0	0	273
Lunenburg County Sheriff's Office	0	0	268
Lynchburg City Sheriff's Office	0	0	47
Lynchburg Police Department	0.4	4	273
Madison County Sheriff's Office	2.9	4	273
Manassas Park Police Department	2.5	25	273
Manassas Police Department	2.1	18	273
Martinsville Police Department	0.1	1	273
Mathews County Sheriff's Office	0.6	1	273
Mecklenburg Sheriff's Office	1.1	6	183
Middlesex County Sheriff's Office	0	0	269
Montgomery County Sheriff's Office	0.7	3	273
Nelson County Sheriff's Office	0.7	3	273
New Kent Sheriff's Office	0.2	6	273
Newport News City Sheriff's Office	0	0	218
Newport News Police Department	0.1	4	181
Norfolk Police Department	0.4	7	153
Northampton County Sheriff's Office	0	0	202
Northumberland County Sheriff's Office	0	0	91
Norton Police Department	0	0	273
Nottoway County Sheriff's Office	0	0	264
Orange County Sheriff's Office	1.1	6	273
Page County Sheriff's Office	1.3	2	273
Patrick County Sheriff's Office	0	0	257
Petersburg Bureau Of Police	0.8	3	213
Petersburg City Sheriff's Office	0	0	239
Pittsylvania County Sheriff's Office	2	2	273
Poquoson Police Department	0	0	181
Portsmouth City Sheriff's Office	0	0	80
Portsmouth Police Department	0.2	2	273
Powhatan Sheriff's Office	0.5	4	273
Prince Edward County Sheriff's Department	1.3	3	174
Prince George County Police Department	0.1	1	273
Prince William County Police Department	0.2	11	273
Prince William County Sheriff's Office	0	0	273

Table 15c. Agency Driver Stop Disparity Indexes (DIs) for American Indian Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*American Indian Driver DI*	*Number of Stops*	*Number of Traffic Days*
Pulaski County Sheriff's Office	0	0	272
Radford City Police Department	0.5	2	272
Rappahannock County Sheriff's Office	2.4	12	273
Richmond County Sheriff's Office	0	0	175
Richmond Police Department	0.7	6	238
Roanoke City Police Department	0.3	3	272
Roanoke County Police Department	0	0	11
Rockbridge County Sheriff's Office	0.3	5	273
Rockingham County Sheriff's Office	0	0	181
Russell County Sheriff’s Office	0	0	267
Salem Police Department	0.7	4	273
Scott County Sheriff’s Office	0	0	171
Shenandoah County Sheriff's Office	1.4	2	212
Smyth County Sheriff's Office	1.6	11	183
Southampton County Sheriff's Office	0.9	5	271
Spotsylvania County Sheriff's Office	0.7	9	273
Stafford County Sheriff's Office	0.4	13	273
Staunton Police Department	0.7	1	158
Suffolk City Sheriff's Office	0	0	126
Suffolk Police Department	0.6	13	273
Surry County Sheriff's Office	0	0	150
Sussex County Sheriff's Office	0.8	12	273
Tazewell County Sheriff's Office	0	0	268
Virginia Beach City Sheriff's Office	0	0	57
Virginia Beach Police Department	1.3	76	273
Warren County Sheriff's Office	0.2	3	273
Washington County Sheriff's Office	0.2	3	272
Waynesboro Police Department	0.9	1	135
Westmoreland County Sheriff's Office	0	0	273
Williamsburg Police Department	0.2	2	273
Williamsburg-James City County Sheriff's Office	0	0	35
Winchester City Sheriff's Office	0	0	107
Winchester Police Department	0.2	1	273
Wise County Sheriff's Office	0	0	273
Wythe County Sheriff's Office	3.2	27	257
York-Poquoson Sheriff's Office	0	0	181

Table 15d. Agency Driver Stop Disparity Indexes (DIs) for Asian Drivers 152 Agencies Serving Cities and Counties			
Agency	*Asian Driver DI*	*Number of Stops*	*Number of Traffic Days*
Accomack County Sheriff's Office	1	3	270
Albemarle County Police Department	0.3	39	273
Albemarle County Sheriff's Office	0	0	256
Alexandria City Sheriff's Office	1	2	259
Alexandria Police Department	0.6	451	273
Alleghany County Sheriff's Office	4.4	11	273
Amelia County Sheriff's Office	0.4	1	272
Amherst County Sheriff's Office	0	0	270
Appomattox County Sheriff's Office	1.3	6	271
Arlington County Police Department	0.5	753	183
Arlington County Sheriff's Office	0.9	14	257
Augusta County Sheriff's Office	0.5	12	273
Bath County Sheriff's Office	5.5	2	264
Bedford County Sheriff's Office	0.6	19	273
Bland County Sheriff's Office	2.9	25	272
Botetourt County Sheriff's Office	1.3	45	273
Bristol Police Department	0.2	2	142
Brunswick County Sheriff's Office	1.4	188	273
Buchanan County Sheriff's Office	0	0	273
Buckingham County Sheriff's Office	2.1	2	270
Buena Vista Police Department	0.2	1	175
Campbell County Sheriff's Office	0.1	1	248
Caroline County Sheriff’s Office	1.1	11	270
Carroll County Sheriff's Office	3	25	265
Charlotte County Sheriff's Office	3.6	11	273
Charlottesville Police Department	0.3	26	273
Chesapeake City Sheriff's Office	0	0	258
Chesapeake Police Department	0.3	209	273
Chesterfield County Police Department	0.4	389	273
Chesterfield County Sheriff's Office	0.3	1	204
Clarke County Sheriff's Office	1.1	10	273
Colonial Heights Police Department	0.2	57	273
Covington Police Department	0	0	181
Craig County Sheriff's Office	2.7	3	273
Culpeper County Sheriff's Office	0.2	1	268
Cumberland County Sheriff's Office	0.8	2	271
Danville Police Department	0.2	10	273

Table 15d. Agency Driver Stop Disparity Indexes (DIs) for Asian Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Asian Driver DI*	*Number of Stops*	*Number of Traffic Days*
Dickenson County Sheriff's Office	0	0	272
Dinwiddie County Sheriff's Office	1.2	49	273
Emporia City Sheriff's Office	0.7	7	272
Emporia Police Department	0.8	58	253
Essex County Sheriff's Office	0	0	170
Fairfax City Police	0.8	183	273
Fairfax County Police Department	0.3	1112	273
Fairfax County Sheriff's Office	0.4	15	273
Falls Church City Sheriff's Office	0	0	124
Falls Church Police Department	0.8	56	242
Fauquier County Fire Marshal's Office	0	0	1
Fauquier County Sheriff's Office	1.2	149	272
Floyd County Sheriff's Office	0.2	1	273
Fluvanna County Sheriff's Office	0.8	12	272
Franklin County Sheriff's Office	0.5	2	272
Franklin Police Department	0	0	241
Frederick County Sheriff's Office	0.5	51	273
Fredericksburg City Sheriff's Office	0	0	230
Fredericksburg Police Department	0.1	1	57
Galax Police Department	0.3	3	273
Giles County Sheriff's Office	1.6	5	269
Gloucester County Sheriff's Office	0.3	6	273
Goochland County Sheriff's Office	0.8	20	272
Grayson County Sheriff's Office	1.5	1	272
Greene County Sheriff's Office	1.4	22	267
Greensville County Sheriff's Office	2.3	107	273
Halifax County Sheriff's Office	0	0	273
Hampton Police Division	0.3	64	273
Hanover County Sheriff's Office	0.5	139	273
Harrisonburg Police Department	0.3	18	182
Henrico Police Department	0.3	353	183
Henry County Sheriff's Office	0.1	1	273
Highland County Sheriff's Office	3.8	2	242
Hopewell City Sheriff's Office	0.5	29	273
Hopewell Police Department	0.1	1	182
Isle Of Wight County Sheriff's Office	0.2	3	182
James City County Police Department	0.4	35	273
King And Queen County Sheriff's Office	0.9	9	273
King George County Sheriff's Office	0.6	28	273

Table 15d. Agency Driver Stop Disparity Indexes (DIs) for Asian Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Asian Driver DI*	*Number of Stops*	*Number of Traffic Days*
King William Sheriff's Office	0.2	2	273
Lancaster County Sheriff's Office	0.9	3	272
Lee County Sheriff's Office	0	0	84
Lexington Police Department	0.3	8	272
Loudoun County Sheriff's Office	0.3	653	273
Louisa County Sheriff's Office	1.2	10	273
Lunenburg County Sheriff’s Office	0	0	268
Lynchburg City Sheriff's Office	0	0	47
Lynchburg Police Department	0.4	28	273
Madison County Sheriff's Office	7.3	32	273
Manassas Park Police Department	0.2	103	273
Manassas Police Department	0.5	116	273
Martinsville Police Department	0.1	4	273
Mathews County Sheriff's Office	0.2	1	273
Mecklenburg Sheriff's Office	2	30	183
Middlesex County Sheriff's Office	0.7	2	269
Montgomery County Sheriff's Office	0.1	14	273
Nelson County Sheriff's Office	1.5	13	273
New Kent Sheriff's Office	0.6	27	273
Newport News City Sheriff's Office	0	0	218
Newport News Police Department	0.2	75	181
Norfolk Police Department	0.4	57	153
Northampton County Sheriff's Office	1.1	19	202
Northumberland County Sheriff's Office	3.3	5	91
Norton Police Department	0.3	3	273
Nottoway County Sheriff's Office	0	0	264
Orange County Sheriff's Office	1.1	21	273
Page County Sheriff's Office	0.6	2	273
Patrick County Sheriff's Office	0	0	257
Petersburg Bureau Of Police	0.3	3	213
Petersburg City Sheriff's Office	1.3	1	239
Pittsylvania County Sheriff’s Office	0.4	1	273
Poquoson Police Department	0.3	3	181
Portsmouth City Sheriff's Office	2.2	2	80
Portsmouth Police Department	0.5	21	273
Powhatan Sheriff's Office	2.1	28	273
Prince Edward County Sheriff's Department	0.6	7	174
Prince George County Police Department	0.1	9	273
Prince William County Police Department	0.4	836	273

Table 15d. Agency Driver Stop Disparity Indexes (DIs) for Asian Drivers 152 Agencies Serving Cities and Counties *(Continued)*			
Agency	*Asian Driver DI*	*Number of Stops*	*Number of Traffic Days*
Prince William County Sheriff's Office	0	0	273
Pulaski County Sheriff's Office	1.7	29	272
Radford City Police Department	0.3	12	272
Rappahannock County Sheriff's Office	2	42	273
Richmond County Sheriff's Office	0	0	175
Richmond Police Department	0.3	19	238
Roanoke City Police Department	0.2	43	272
Roanoke County Police Department	0	0	11
Rockbridge County Sheriff's Office	1.3	29	273
Rockingham County Sheriff's Office	0.3	5	181
Russell County Sheriff’s Office	0	0	267
Salem Police Department	0.6	27	273
Scott County Sheriff’s Office	0	0	171
Shenandoah County Sheriff's Office	0.2	1	212
Smyth County Sheriff's Office	3.3	68	183
Southampton County Sheriff's Office	0.9	7	271
Spotsylvania County Sheriff's Office	0.2	25	273
Stafford County Sheriff's Office	0.4	133	273
Staunton Police Department	0	0	158
Suffolk City Sheriff's Office	0	0	126
Suffolk Police Department	0.3	43	273
Surry County Sheriff's Office	1.1	2	150
Sussex County Sheriff's Office	2.2	44	273
Tazewell County Sheriff's Office	0	0	268
Virginia Beach City Sheriff's Office	0	0	57
Virginia Beach Police Department	0.4	517	273
Warren County Sheriff's Office	0.6	32	273
Washington County Sheriff's Office	1.4	72	272
Waynesboro Police Department	0.5	3	135
Westmoreland County Sheriff's Office	0	0	273
Williamsburg Police Department	0.2	51	273
Williamsburg-James City County Sheriff's Office	0	0	35
Winchester City Sheriff's Office	1.7	1	107
Winchester Police Department	0.4	30	273
Wise County Sheriff's Office	1.1	4	273
Wythe County Sheriff's Office	2.1	52	257
York-Poquoson Sheriff's Office	0.4	50	181

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 10 below shows the percentages of the 152 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 10
Percent of Agencies with High, Moderate, or No Overrepresentation in Searches by Driver Race/Ethnicity, 152 Virginia Agencies Serving Cities and Counties

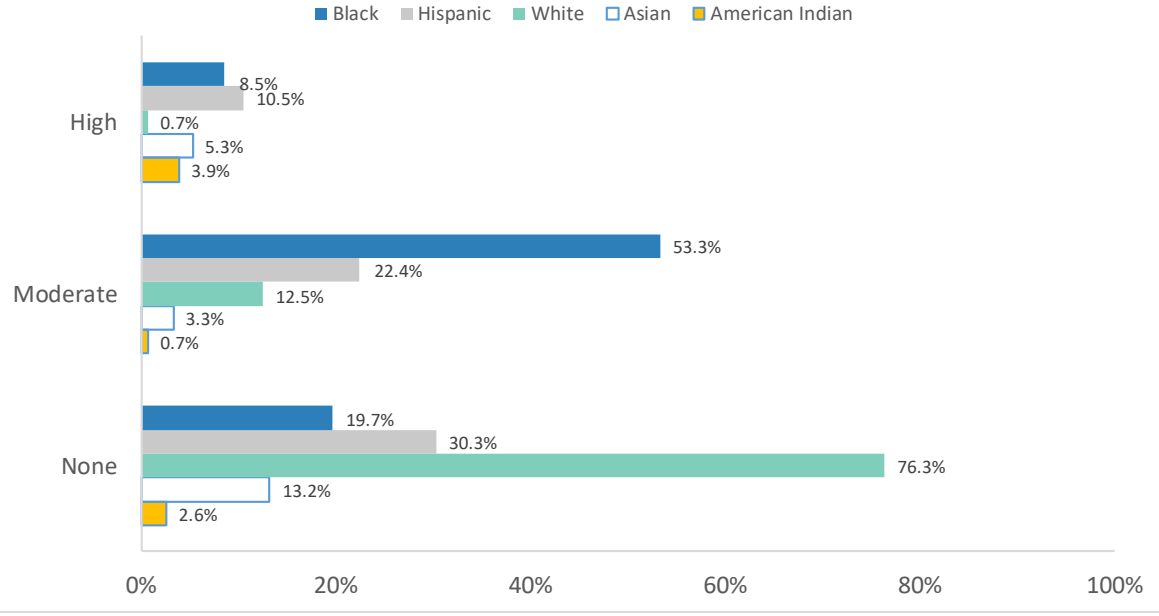


Figure 10 shows the following:

- Black and Hispanic drivers predominate when there was high or moderate overrepresentation for searches, and White drivers predominate when there was no overrepresentation for searches. Black and Hispanic drivers had consistently higher search DIs than White drivers.
  - 8.5% of city and county agencies had high overrepresentation for searches involving Black drivers, 10.5% of agencies had the same for Hispanic drivers, 3.9% of agencies had the same for American Indian drivers, and 5.3% had the same for Asian drivers. Less than 1% of agencies had the same for White drivers.
  - 53.3% of city and county agencies had moderate overrepresentation for searches involving Black drivers, and 22.3% of agencies had the same for Hispanic drivers. Less than 1% of agencies had the same for American Indian drivers, and 3.3% of agencies had the same for Asian drivers. 12.5% of agencies the same for White drivers.

- 19.7% of city and county agencies had no overrepresentation for searches involving Black drivers, 30.3% of agencies had the same for Hispanic drivers, 2.6% of agencies had the same for American Indian drivers, and 13.2% of agencies had the same for Asian drivers. By comparison, 76.3% of agencies had the same for White drivers.

City and county agencies with zero searches, and therefore search DIs of zero, are not shown in Figure 10 above. 10.5% of city and county agencies (16) reported no searches involving White drivers, 18.4% agencies (28) reported none involving Black drivers, 36.2% of agencies (56) reported none involving Hispanic drivers, 92.7% of agencies (141) reported none involving American Indian drivers, and 73.3% (119) reported no searches involving Asian drivers.

Driver Arrests

Figure 11 shows the percentages of the 152 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 11
Percent of Agencies with High, Moderate, or No Overrepresentation in Driver Arrests by Driver Race/Ethnicity, 152 Virginia Agencies Serving Cities and Counties

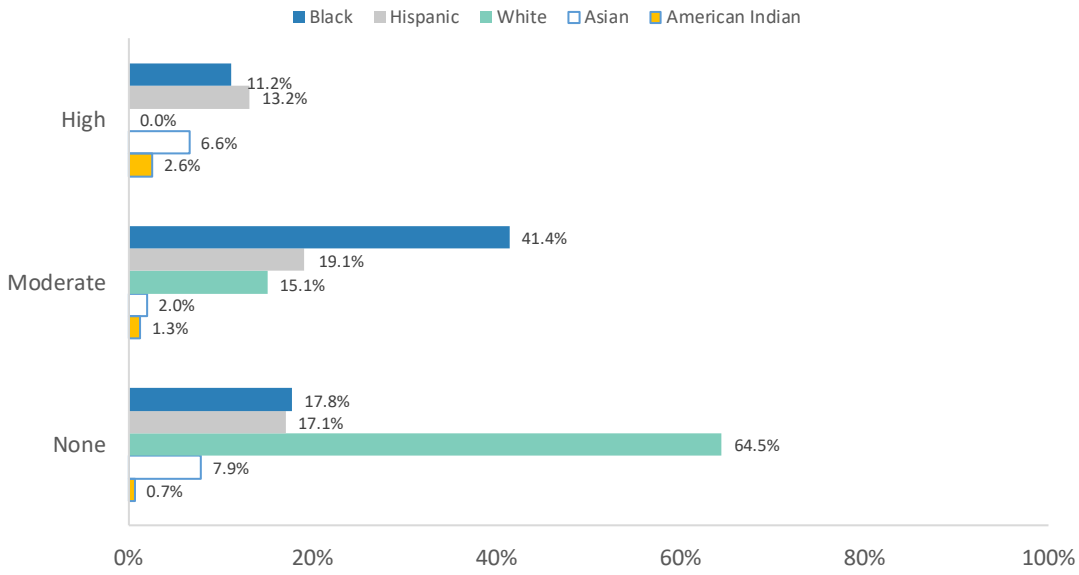


Figure 11 above shows the following:

- As was the case for searches, Black and Hispanic drivers predominate when there was high or moderate overrepresentation for arrests and White drivers predominate when there was no overrepresentation for arrests. Black and Hispanic drivers had consistently higher arrest DIs than White drivers.
  - 13.2% of county and city agencies had high overrepresentation of Hispanic drivers arrested, 11.2% of agencies had the same for Black drivers, 2.6% of agencies had the same for American Indian drivers, and 6.6% of agencies had the same for Asian drivers. No agencies had high overrepresentation for White drivers arrested.

- 41.4% of county and city agencies had moderate overrepresentation of Black drivers arrested, 19.1% of agencies had the same for Hispanic drivers, 1.3% of agencies had the same for American Indian drivers, and 2.0% of agencies had the same for Asian drivers. 15.1% of agencies had the same for White drivers.
- 17.8% of county and city agencies had no overrepresentation of Black drivers arrested, 17.1% of agencies had the same for Hispanic drivers, less than 1% of agencies had the same for American Indian drivers, and 7.9% of agencies had the same for Asian drivers. 64.5% of agencies had the same for White drivers.

City and county agencies with zero driver arrests, and therefore driver arrest DIs of zero, are not shown in Figure 11 above. 20.4% of these agencies (31) did not arrest any White drivers, 29.6% of these agencies (45) did not arrest any Black drivers, 50.7% of agencies (77) did not arrests any Hispanic drivers, 95.4% of agencies (145) did not arrest any American Indian drivers, and 83.5% of agencies (127) did not arrest any Asian drivers.

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

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.

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 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 31% of drivers stopped statewide were Black, 20% of drivers stopped by town agencies were Black. Hispanic drivers were 9.6% of those stopped statewide and were 8.9% of drivers stopped by town agencies. The percentage of White drivers stopped by town agencies, 66.4%, was higher than the percentage of White drivers stopped statewide, 54.8%.

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 town agencies.

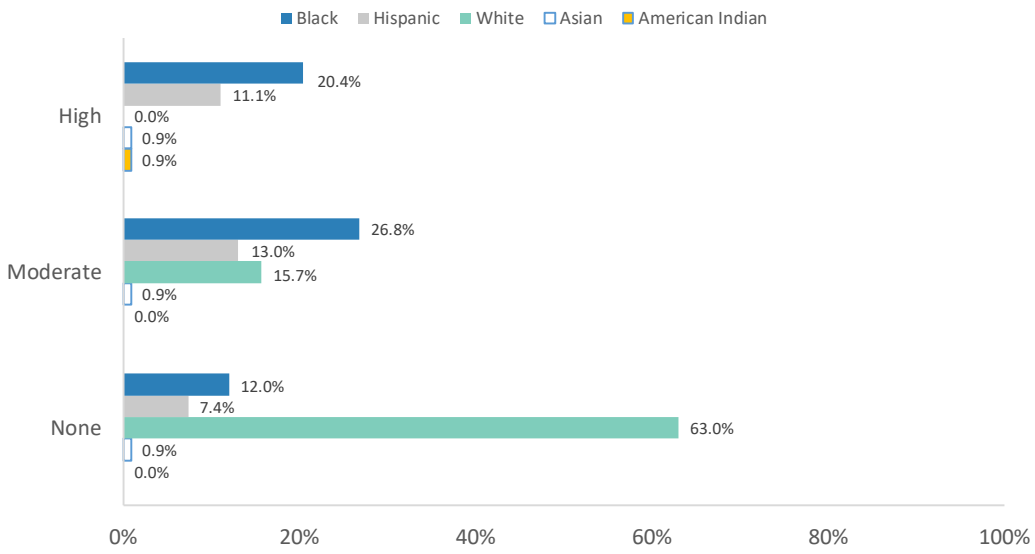
Analysis of Events Following Traffic Stops for Town Agencies

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 12 shows the percentages of the 108 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 12
Percent of Agencies with High, Moderate, or No Overrepresentation in Searches by Driver Race/Ethnicity, 108 Virginia Agencies Serving Towns



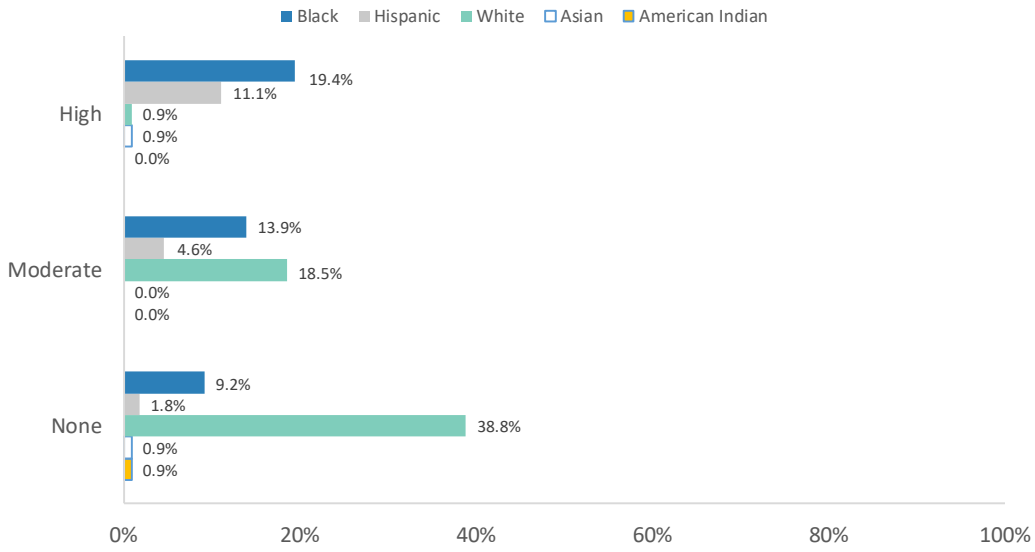
- Black and Hispanic drivers again tended to have higher search DIs than other drivers.
  - 20.4% of town agencies had a high overrepresentation for searches involving Black drivers and 11.1% of agencies had the same for searches involving Hispanic drivers. No agency had the same for searches involving White drivers.
  - 26.8% of town agencies had a moderate overrepresentation for searches involving Black drivers and 13% of agencies had the same for searches involving Hispanic drivers. 15.7% of agencies had the same for searches involving White drivers.
  - Only 12% of town agencies had no overrepresentation for searches involving Black drivers and only 7.4% of agencies had the same for searches involving Hispanic drivers. By comparison, 63% of agencies had the same for searches involving White drivers.
  - American Indian and Asian drivers were underrepresented in searches.

Town agencies with zero searches, and therefore search DIs of zero, are not shown in Figure 12 above. 21.3% of these agencies (23) did not conduct any searches involving White drivers, 40.7% (44) reported no searches involving Black drivers, 68.5% (74) reported no searches involving Hispanic drivers, 99.1% (107) reported no searches involving American Indian drivers, and 97.2% (105) reported no searches involving Asian drivers.

Driver Arrests

Figure 13 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.

Figure 13
Percent of Agencies with High, Moderate, or No Overrepresentation in Driver Arrests by Driver Race/Ethnicity, 108 Virginia Agencies Serving Towns



- Black and Hispanic drivers again tended to have consistently higher arrest DIs than other drivers.
  - 19.4% of town agencies had a high overrepresentation for Black drivers arrested and 11.1% of agencies had the same for Hispanic drivers. Less than 1% of town agencies had the same for White drivers.
  - 13.9% of town agencies had a moderate overrepresentation for Black drivers arrested and 4.6% of agencies had the same for Hispanic drivers. 18.5% of agencies had the same for White drivers.
  - 9.2% of town agencies had no overrepresentation for Black drivers arrested and 1.8% of agencies had the same for Hispanic drivers. 38.8% of agencies had the same for White drivers.
  - There was no overrepresentation in arrests of American Indian or Asian drivers.

Town agencies with zero driver arrests, and therefore arrest DIs of zero, are not shown in Figure 13 above. 41.7% of these agencies (45) did not arrest any White drivers, 57.4% (62) reported no arrests of Black drivers, 82.4% (89) did not arrest Hispanic drivers, 99.1% (107) had no arrests of American Indian drivers, and 98.2% (106) had no arrests of Asian drivers.

DIs for individual agencies serving towns are shown in Appendix C

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

The maps in Figures 14–16 illustrate which local areas of Virginia had high, moderate, or no overrepresentation for driver stops, searches, and driver arrests, 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 H).

Figure 14
Local Area Maps for Driver Stops by Driver Race/Ethnicity

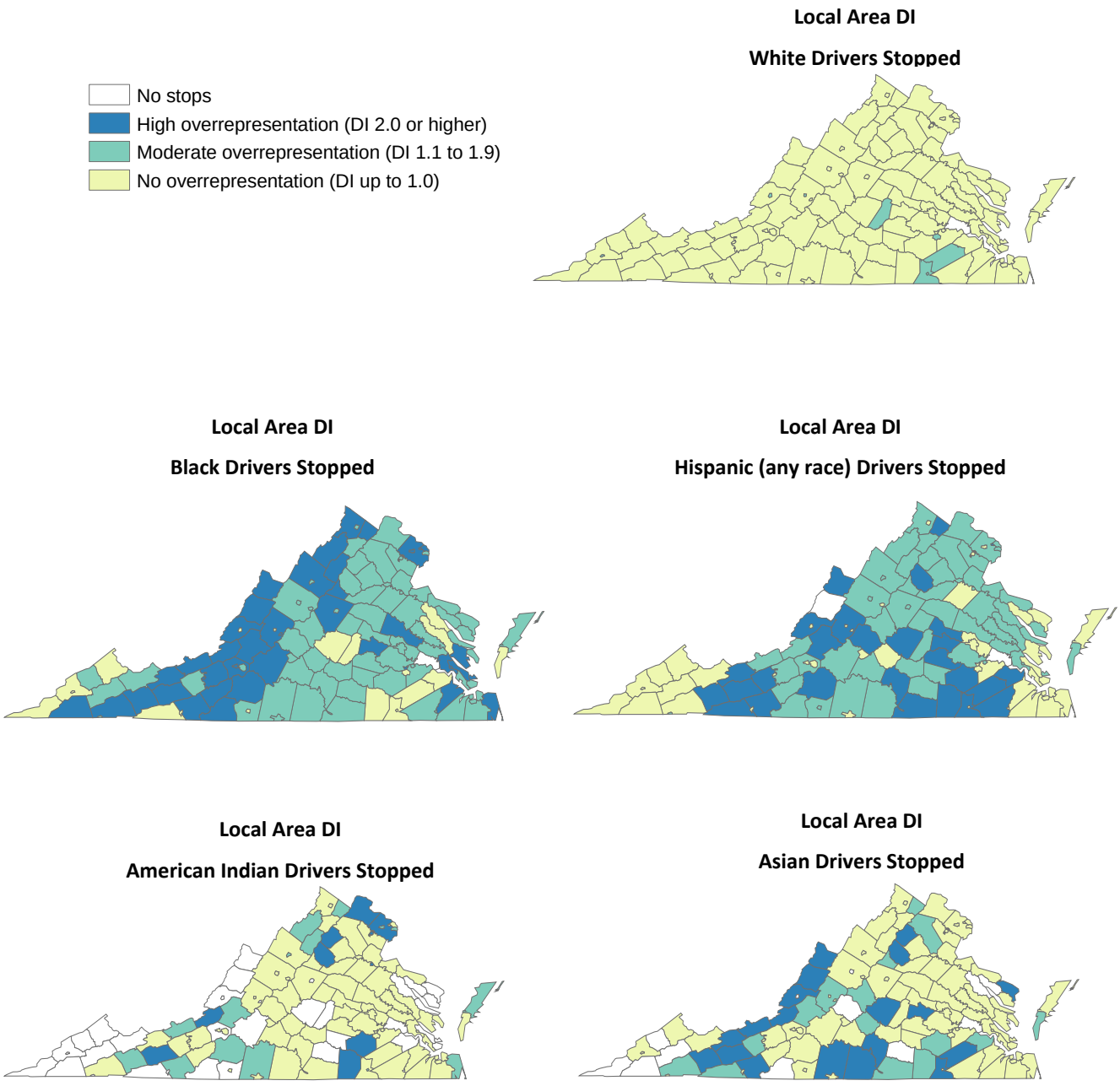


Figure 15
Local Area Maps for Searches by Driver Race/Ethnicity

A search may have been conducted of the driver only, of a passenger only, of the vehicle only, or of any combination of the three. Since only the driver race/ethnicity was reported, a search is defined here with respect to the driver's race/ethnicity. It does not necessarily mean that the driver was searched.

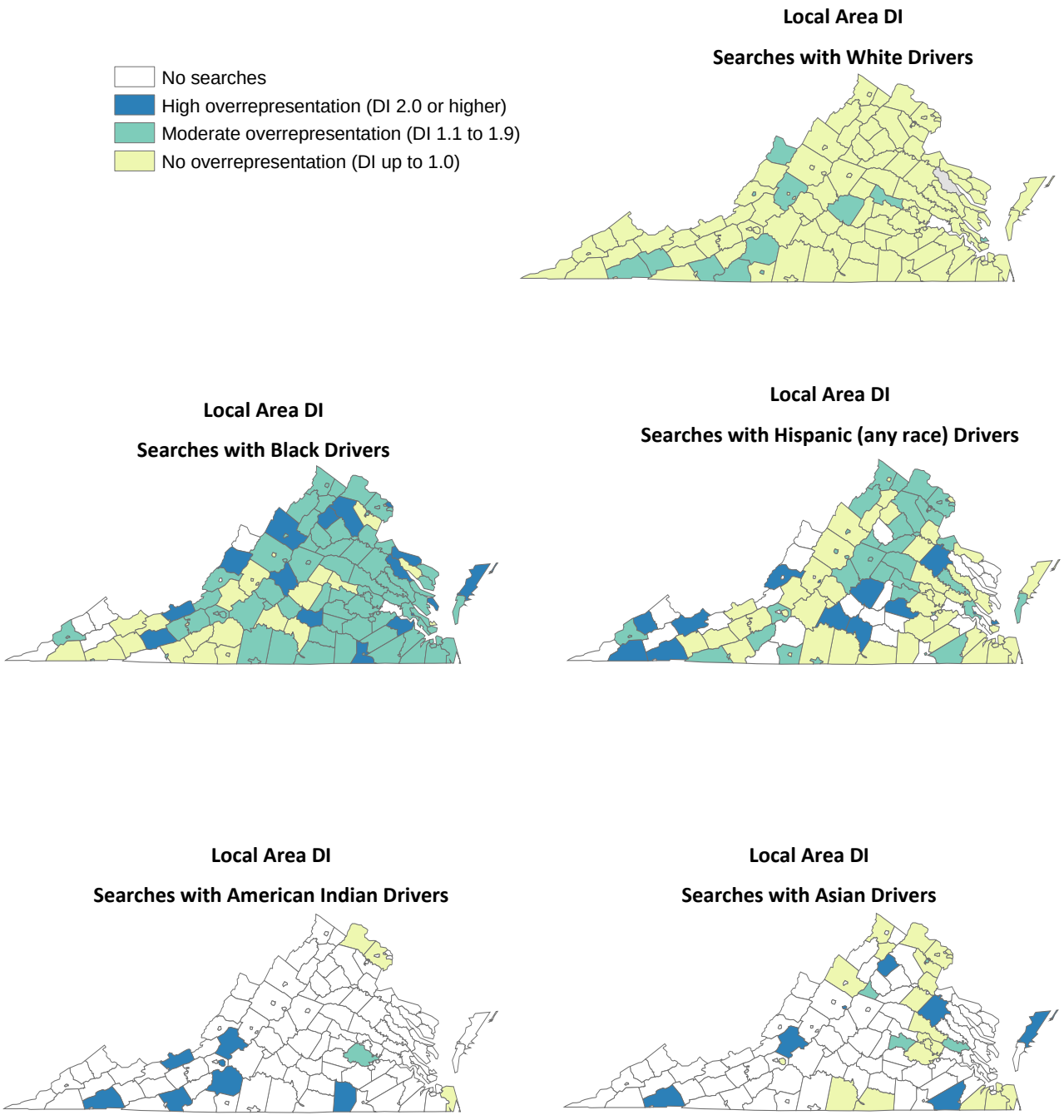
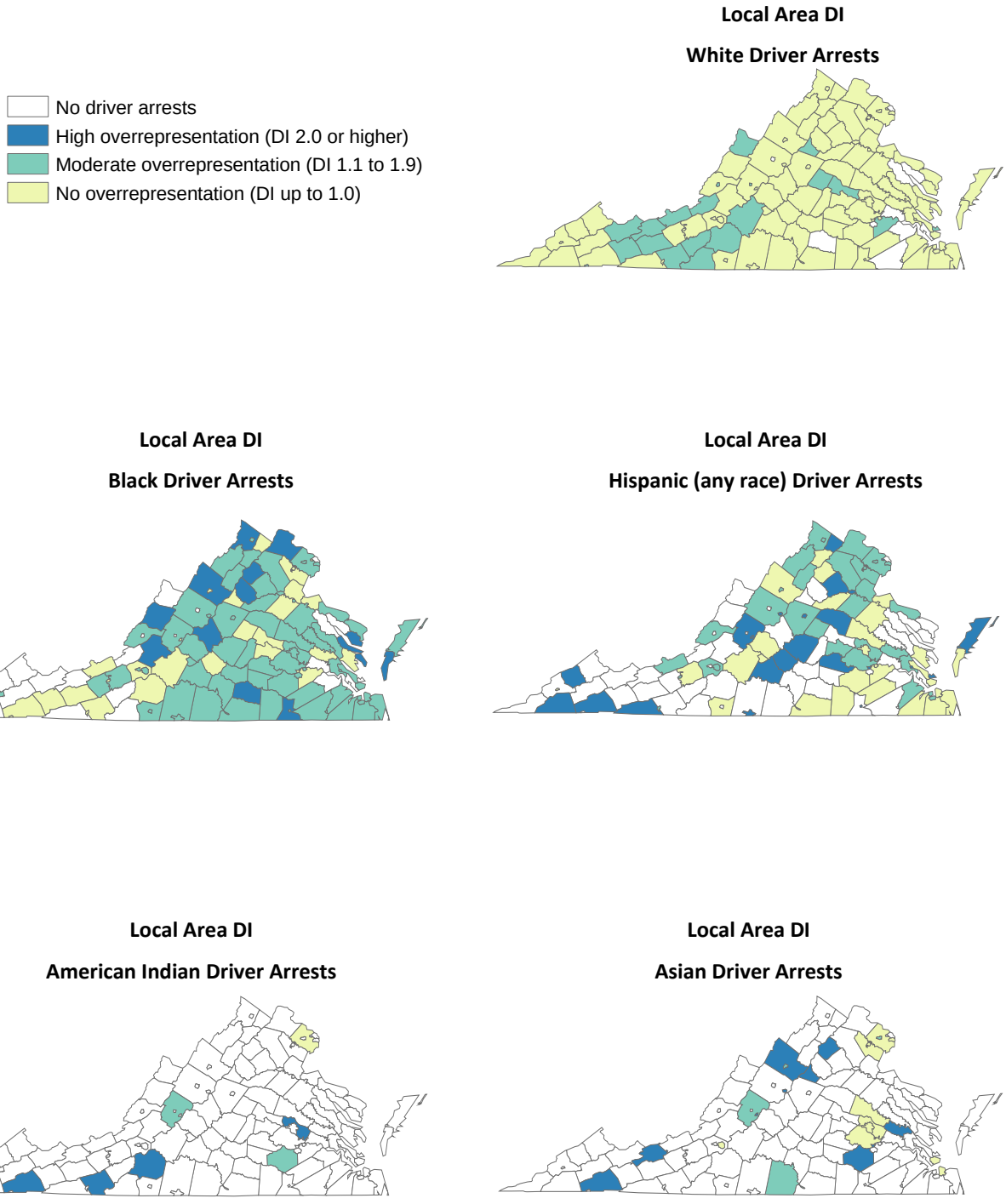


Figure 16
Local Area Maps for Arrests by Driver Race/Ethnicity



Other Agencies Traffic Stop Analysis

There were 44 "Other" state, local and private agencies serve 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 stopped statewide.

The percentages of White and Black drivers stopped by other agencies was similar to the percentages stopped statewide. 54.3% of drivers stopped by other agencies were White, compared with 54.8% of stops statewide, and 30% of drivers stopped by other agencies were Black, while 31% of all stops statewide were of Black drivers. The percentage of Hispanic drivers stopped by other agencies, 7.9%, was lower than the percentage stopped statewide, 9.5%

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.

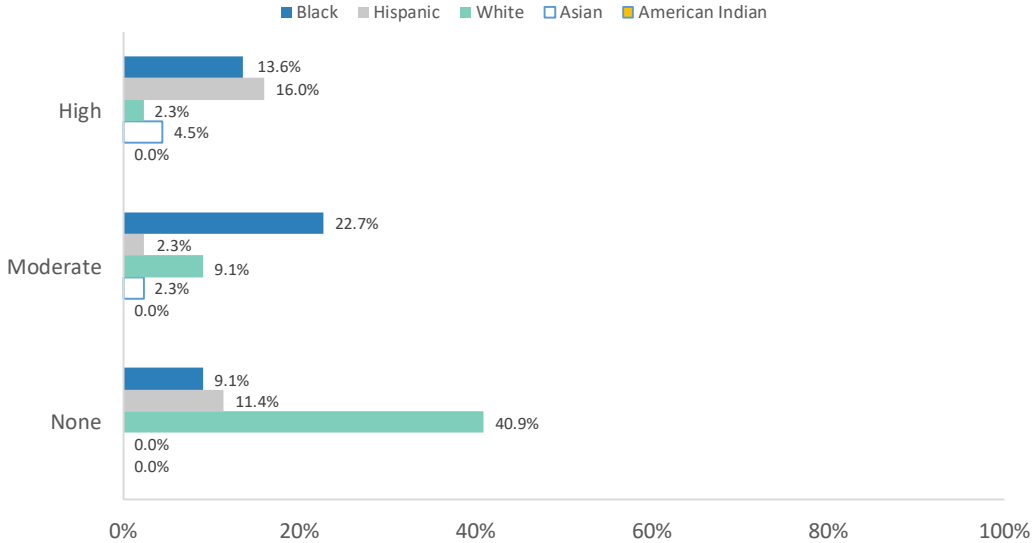
Analysis of Events Following Traffic Stops for Other Agencies

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 17 shows the percentages of the 44 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.

Figure 17
Percent of Agencies with High, Moderate, or No Overrepresentation in Searches by Driver Race/Ethnicity, 44 Virginia Other Agencies



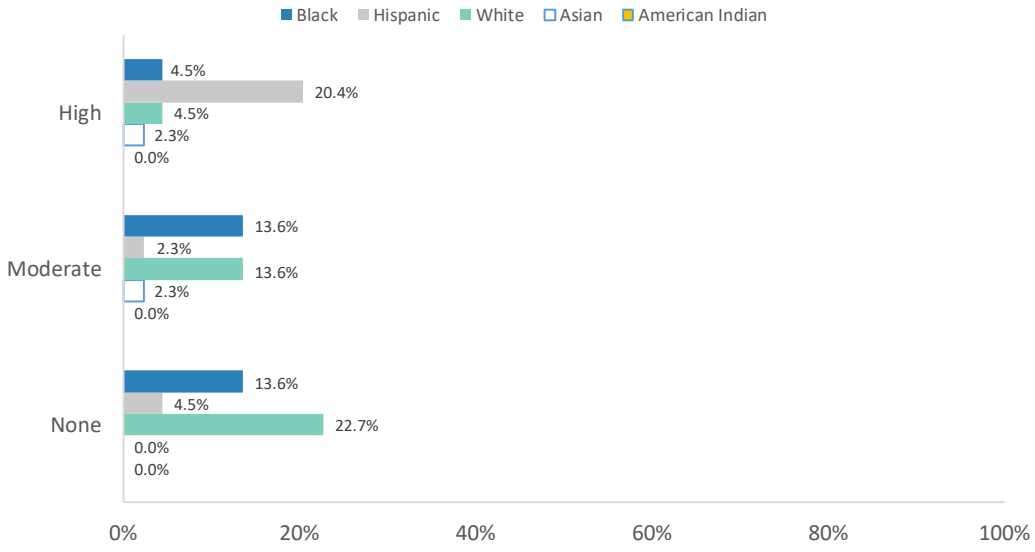
- Black and Hispanic drivers again tended to be searched at a higher rate than other driver groups, with mostly higher search DIs than other drivers.
  - 13.6% of other agencies had a high overrepresentation for searches involving Black drivers and 16% of agencies had the same for Hispanic drivers. 2.3% of other agencies had the same for White drivers.
  - 22.7% of other agencies had a moderate overrepresentation for searches involving Black drivers and 2.3% of agencies had the same for Hispanic drivers. Only 9.1% of agencies had the same for White drivers.
  - Only 9.1% of other agencies had no overrepresentation for searches involving Black drivers, while 11.4% of agencies had the same for Hispanic drivers. By comparison, nearly 41% of agencies had the same for White drivers.
  - 4.5% of other agencies had a high overrepresentation for Asian drivers and 2.3% had a moderate overrepresentation. No agencies had an overrepresentation for American Indian drivers.

Other agencies with zero searches, and therefore search DIs of zero, are not shown in Figure 17 above. 70.4% of these agencies (31) did not conduct any searches involving Hispanic drivers, 54.5% (24) reported no searches involving Black drivers, 47.7% (21) reported no searches involving White drivers, and 93.2% (41) had no searches involving Asian drivers. No other agency reported any searches involving American Indian drivers.

Driver Arrests

Figure 18 shows the percentages of the 44 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.

Figure 18
Percent of Agencies with High, Moderate, or No Overrepresentation in Driver Arrests by Driver Race/Ethnicity, 44 Virginia Other Agencies



- DIs for arrests of Black and Hispanic drivers by other agencies were mixed, with some DIs comparable to those for other drivers.
  - 4.5% of other agencies had a high overrepresentation for Black and White drivers and 20.4% of agencies had the same for Hispanic drivers.
  - 13.6% of other agencies had a moderate overrepresentation for Black and White drivers arrested. 2.3% of agencies had the same for Hispanic drivers.
  - 13.6% of other agencies had no overrepresentation for Black drivers arrested and 4.5% of agencies had the same for Hispanic drivers. 22.7% of agencies had the same for White drivers.
  - Only about 2% of other agencies had either high or moderate overrepresentation for Asian drivers. No agencies had an overrepresentation for American Indian drivers.

Other agencies with zero driver arrests, and therefore arrest DIs of zero, are not shown in Figure 18 above. 59.1% of these agencies (26) did not arrest any White drivers, 68.2% (30) reported no arrests of Black drivers, 72.7% (32) did not arrest any Hispanic drivers, and 99.4% (42) had no arrests of Asian drivers. No other agency had any arrests of American Indian drivers.

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

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 preliminary 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 (minorities may be more likely to drive in or through higher crime areas, which are policed more than other areas).
- Different agency practices (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 preliminary 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. Examples of extreme DIs likely due to this issue were pointed out in the report section presenting the analysis of agency-level traffic stop data.

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 searchers are made involving stopped drivers in each racial/ethnic group.
- Comparing data on the how many drivers in each racial/ethnic group are residents or non-residents of the locality in which the traffic stop was made.
- 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.

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 preliminary 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.

To improve Virginia's ability to determine the existence and prevalence of bias-based profiling and the prevalence of complaints alleging the use of excessive force, the Virginia Department of Criminal Justice Services makes the following recommendations:

Currently, researchers 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. Additionally, many localities have high numbers of drivers from different racial/ethnic groups who are passing through the locality – and subject to being stopped – but who are not residents and therefore are not counted in the localities' resident population figures. These nonresident driver stops can skew measures of traffic stop disparities for such localities.

> **RECOMMENDATION 1:** The percentages and Disparity Indexes (DIs) presented in this preliminary 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.

Finding an appropriate benchmark to represent the actual driving population for any given racial/ethnic group is a problem that limits all traffic stop research, not just Virginia's efforts. Some researchers have identified methods that can allow for better (but not exact) ways of examining the extent to which bias-based profiling may play a role in driver stops, or can at least help remove some of the confounding factors that make it difficult to determine the roles that profiling may play. These methods, described below, could be applied in Virginia's analysis of traffic stop data, but would require additional driver stop information not currently collected under the Community Policing Act. Specific recommendations for additional information to be collected in accordance with the Act are listed below. In addition, as noted in Recommendation 7, the state may wish to consider allocating additional resources to law-enforcement agencies, particularly smaller agencies, to assist with the collection of existing and future data elements required under the Community Policing Act.

- *Comparing the percentages of traffic stops made for each driver racial/ethnic group during daylight hours to those of drivers stopped during nighttime hours*. This approach assumes that, during nighttime hours, law-enforcement officers would be less likely to discern the race/ethnicity of drivers they decide to stop than during daylight hours. If this is true, disparities based on driver race/ethnicity should occur less frequently in stops made during nighttime hours than in stops made during daylight

hours. Research in other states has found evidence that non-White drivers are stopped less often during nighttime hours—when their race/ethnicity is less visible to law-enforcement officers.

RECOMMENDATION 2: Collect data on the time of day at which each traffic stop was made, and add this data to the CPA database. This data would allow DCJS to analyze traffic stop data by comparing disparities in driver stops made during hours of daylight and nighttime.

- *Comparing the percentage of traffic stops made for drivers in each racial/ethnic group to the percentage of these drivers involved in traffic accidents.* Research has shown that the racial/ethnic makeup of accident-involved drivers provides a better representation of the actual driving population than the racial/ethnic makeup of the resident driving-age population.

  RECOMMENDATION 3: Collect data on the race/ethnicity, age, and gender of drivers involved in traffic accidents in each Virginia locality. (It would not be necessary to collect personally identifiable information on the driver, only the demographic data.) How and where this data would be collected and stored would need to be determined, but the data would need to be maintained in a way that would allow DCJS to compare it with traffic stop data for each locality.

- *Comparing how often contraband is found when searches are made involving stopped drivers in each racial/ethnic group.* Research in other states has found that contraband "hit rates" are lower for non-White drivers than for White drivers. This may indicate that officers are making decisions to search non-White drivers based on a lower evidentiary bar than for searches of White drivers, *suggesting* that racial/ethnic bias may have been a factor when making search decisions.

  RECOMMENDATION 4: Collect data on searches made for contraband during traffic stops, and the results of the searches, and add this data to the CPA database.

- *Comparing data on how many drivers in each racial/ethnic group are residents or nonresidents of the locality in which the traffic stop was made.* This would allow DCJS staff to better understand the extent to which the resident driving-age population of a locality represents the actual driving population in the locality.

  RECOMMENDATION 5: Collect data on the residence of drivers involved in traffic stops, and add this data to the CPA database. This might be done using data collected from the driver's license.

- *Identifying traffic stops in which the role of bias-based profiling may be minimal or nonexistent, so these stops can be eliminated from the DCJS traffic stop analysis when appropriate.* These could include traffic stops made based on checkpoints or roadblocks, or made using electronic devices such as Radar, Laser, Light Detection and Ranging (LIDAR); Visual Average Speed Computer and Recorder (VASCAR); and license plate readers.

  RECOMMENDATION 6: Collect data on the method by which the traffic stop was initiated, to distinguish stops in which an officer's observation of the driver's race/ethnicity could have played a role from stops in which it would be less likely to play a role. Add this data to the CPA database.

Additional Recommendations

RECOMMENDATION 7: Virginia should examine the need to provide resources to smaller law-enforcement agencies that had difficulty implementing the CPA data collection and reporting requirements. Assistance could be provided in several ways, such as helping these agencies train staff on reporting requirements and practices, and providing them with more effective data collection tools such as a statewide electronic summons application.

RECOMMENDATION 8: Virginia should examine the feasibility of obtaining more accurate data on the race and ethnicity of drivers who are involved in law-enforcement traffic stops. Under the CPA, law-enforcement officers now have two methods for determining the race/ethnicity of a driver: 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 or ethnicity.

RECOMMENDATION 9: Virginia should examine the feasibility of collecting data on the race/ethnicity of the law-enforcement officers making traffic stops, and adding it to the CPA database. This would allow DCJS staff to assess whether there are indications that the race/ethnicity of the officer making a stop is related to racial/ethnic disparities in stops.

RECOMMENDATION 10: DCJS staff should conduct additional research on methods for calculating driver racial/ethnic disparities for agencies serving towns. Currently, the resident driving-age population data needed to examine stops by these agencies is limited, and DCJS staff should determine if this data, or other suitable data, is available. Similarly, DCJS staff should examine whether it is feasible to reliably assess traffic stop disparities for "other" agencies that do not have stable, defined resident population figures.

RECOMMENDATION 11: DCJS staff should continue to work with VSP to determine how data on complaints of excessive use of force can be collected in a manner that allows for an examination of bias-based profiling in use of excessive force cases.

Appendices *(available online)*

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

APPENDIX B:
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/Appendix-B_152CityCounty.pdf

APPENDIX C:
Traffic Stop Tables for Law-Enforcement Agencies Serving Towns
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/Appendix-C_108Town.pdf

APPENDIX D:
Traffic Stop Tables for Other Law-Enforcement Agencies
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/Appendix-D_44Other.pdf

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

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

APPENDIX G:
VSP Community Policing Data Collection Instructions and Technical Specifications (Version 3)
https://www.dcjs.virginia.gov/sites/dcjs.virginia.gov/files/publications/research/cpad-appendices/Appendix-G.pdf

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

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

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