Executive Summary

This report presents the results of an external benchmark analysis of Michigan State Police (MSP) traffic stops conducted during 2020. There are five primary sections to this report: Census benchmark, traffic-crash benchmark, veil-of-darkness (VOD) benchmark, post-stop outcome analyses, and Secure Cities Partnership analyses. The goal of these analyses is to understand the extent of racial and ethnic disparities in traffic stop behavior. Below we briefly describe the methodology used for each analysis and summarize the main findings. When reviewing the results, it is imperative to understand the difference between "disparity" and "discrimination." Disparity is an observed difference in the proportion of traffic stops involving a specific group of people compared to that group's representation in another source of data. Discrimination, on the other hand, involves a police officer intentionally targeting and stopping racial or ethnic minorities solely because of their group status (i.e., racially profiling people and engaging in biased stop behavior). In this way, discrimination involves intent, whereas observed disparity cannot speak to whether an officer acted with intent. This report and its findings can speak only to the extent of racial/ethnic disparity in MSP traffic stops. The data cannot ascertain whether racially discriminatory practices are occurring within MSP.

Details about the data sources are provided in the body of the report below. However, the primary data—MSP traffic stops—represent all traffic stops conducted by MSP during 2020. MSP troopers are required to report the race of drivers involved in traffic stop reports. MSP policy and training instructs troopers to report the driver's race based on their perception and they are prohibited from asking drivers to self-report their race or ethnicity.

Census benchmark results:

The first set of benchmark analyses involved comparing the racial/ethnic composition of MSP traffic stops to minority group representation in the population using Census data estimates. This type of benchmark is intuitive and provides a good starting point for examining whether racial/ethnic disparities exist within traffic stop data. However, relying solely on Census data as a benchmark is insufficient and can result in inaccurate conclusions. Census data do not accurately represent the racial/ethnic driving population and, therefore, do not adequately estimate the population at risk to be stopped by the police. We recommend only using Census benchmark results for descriptive purposes. The main Census benchmark findings were as follows:

- Across Michigan and within most of MSP's districts, African Americans were significantly more likely to be involved in a traffic stop than we would have expected based on their representation in the population. African Americans in District 8 were *less likely* to be stopped than we would have expected based on their representation in the district's population. African Americans were significantly more likely to be involved in a traffic stop than we would have expected based on their representation in the population in most Michigan counties.
- Hispanic drivers were significantly less likely to be stopped than we would have expected based on their representation in the population across Michigan, most of MSP's districts, and many Michigan counties.

- Asian drivers were significantly less likely to be stopped than we would have expected based on their representation in the population across Michigan and most of MSP's districts. There was a mixture of counties where Asian drivers were more or less likely to be stopped based on the racial/ethnic composition of the population.

Traffic-crash benchmark results:

Next, we used Michigan traffic crash data as a benchmark against MSP's traffic stop data. Traffic crash data is a useful benchmark because it provides a reasonable estimate of the driving population (and, therefore, accounts for exposure to police supervision), including those that drive in a particular community but who may not live in that location (i.e., the commuter population). Due to data availability at the time analyses started for this report, we were limited to traffic crash data during the first six months of 2021. Accordingly, we benchmarked this against traffic stops that occurred during the first six months of 2020 (to avoid seasonality differences).

We used two types of traffic crash data as benchmarks. First, we compared the racial/ethnic composition of traffic stops and "not-at-fault" crashes. Being involved in a crash that is not one's fault is largely a random process and, therefore, such data provide a good estimate of the driving population—people that drive more frequently are more likely to be involved in "not-at-fault" crashes. Second, we compared the racial/ethnic composition of traffic stops and "at-fault" crashes. This benchmark is useful in racial disparity research because it provides a reasonable estimate of the driving population that engages in risky or illegal driving behavior. If particular groups of people are more likely to be involved in "at-fault" crashes, it is likely because they violate traffic laws more frequently which should expose them to more police intervention. The primary findings from the traffic-crash benchmarks were as follows:

- *"Not-at-fault" traffic crashes benchmark*:
    - African Americans were significantly more likely to be involved in traffic stops than we would have expected based on the racial/ethnic makeup of "not-at-fault" traffic crashes across Michigan and each of MSP's districts. Within a significant portion of Michigan counties, African-American drivers were more likely to be stopped relative to their representation in "not-at-fault" traffic crashes. However, there were many counties where African Americans were represented in traffic stops at a rate equal to what we would have expected based on the racial/ethnic makeup of "not-at-fault" traffic crashes.
    - Across the state and MSP's districts, the results were mixed concerning whether Hispanic drivers were more or less likely to be stopped than we would have expected based on their representation in "not-at-fault" traffic crashes. However, across most Michigan counties, Hispanic drivers were stopped at a rate that we would have expected based on the racial/ethnic composition of "not-at-fault" traffic crashes.
    - Asian drivers were less likely or as likely to be involved in traffic stops compared to their representation in "not-at-fault" traffic crashes.

- *"At-fault" traffic crashes benchmark*:
    - While African-American drivers were *less likely* to be stopped by an MSP trooper across the entire state of Michigan compared to their representation in "at-fault" traffic crashes, they were *more likely* to be stopped in Districts 1, 2, 3, and 5. African-American drivers' representation in traffic stops was equal to their involvement in "at-fault" crashes in Districts 6, 7, and 8. There was similar mixed evidence regarding this benchmark at the county-level of analysis.
    - Hispanic drivers were less likely to be stopped or stopped at an expected rate based on the racial/ethnic makeup of "at-fault" traffic crashes.
    - Asian drivers were less likely to be stopped or stopped at their expected rate relative to the racial/ethnic makeup of "at-fault" traffic crashes across the state, all of Michigan's counties, and all of MSP's districts (except District 5 where they were more likely to be stopped than expected).

It is important to point out the limitations of the traffic-crash benchmark analyses. First, the traffic stop and crash data came from different years and do not cover an entire year. However, we conducted supplemental analyses at the end of this report that addressed part of this problem. Second, and relatedly, the COVID-19 pandemic could have impacted traffic stop behavior and outcomes in 2020 but likely had less of an impact on traffic crashes during 2021. Thus, it is possible that COVID-19 impacted driving and enforcement activities in 2020, but the benchmark data do not contain the same influence on driving patterns related to traffic crashes. Again, however, supplemental analyses suggested this may not be the case because we observed the same racial disparities when using 2020 or 2021 traffic stop data.

Another limitation to the traffic crash benchmark analyses is that the crash data do not perfectly match the locations that MSP troopers may patrol. If troopers are more likely to be deployed in areas with crime or traffic safety problems *and* these areas happen to have more minority residents or drivers, we may expect some level of traffic stop disparity that cannot be explained by the crash benchmark analyses. Crash data from the specific locations that troopers patrol could provide a better benchmark.

Finally, it is important to note that we are missing driver race/ethnicity from about 27% of crashes that occurred in Michigan during the first six months of 2021. This occurred because over 10% of Michigan police agencies did not report driver race/ethnicity on their traffic crash reports. It is possible that different results would emerge if we had complete data for the traffic crash benchmark analyses.

Veil-of-darkness benchmark results:

The third set of benchmark analyses leveraged the "veil-of-darkness" (VOD) methodology. According to the VOD, it is more difficult for police officers to determine the race/ethnicity of a driver prior to making a traffic stop when it is dark outside. If officers are engaging in discriminatory stop behavior, this implies they are using the color of a driver's skin when deciding whether to conduct a stop. If a larger proportion of minority drivers are stopped by the police during daylight

than at night, this would be evidence of racial/ethnic disparity. Within the VOD methodology, we restricted the analyses to only those traffic stops that occurred during the intertwilight period (i.e., the earliest end of civil twilight to the latest end of civil twilight). Doing so created a natural experiment that leverages the seasonal variation in daylight to account for differences in travel patterns across groups of people. The primary VOD results were as follows:

- According to the VOD analyses, traffic stops conducted during daylight were 33% more likely to involve an African-American driver. This is concerning because it is, arguably, easier to see driver race during daylight than during darkness.
- Daylight did not predict whether a driver involved in a traffic stop was Hispanic, Asian, or from another racial/ethnic group.

One problem with the VOD methodology is that it assumes there are no seasonal differences in driving patterns across driver race/ethnicity or other significant changes that may impact the nature of traffic stops throughout the year. This likely is an inaccurate assumption. Accordingly, VOD researchers sometimes restrict the analyses to stops that occurred during the intertwilight period *and* the 30 days before and after the switch to daylight savings time (DST). Doing so accounts for any seasonal changes in driving patters or the nature of traffic stops (i.e., it only focuses on a single season). When we conducted this analysis, the VOD findings changed:

- After accounting for potential seasonal variations in the nature of traffic stops or the makeup of drivers on the road, the VOD results demonstrated that the amount of daylight *did not* predict whether a driver involved in a traffic stop was African American. Put simply, accounting for seasonality in stops and driver makeup on the road rendered the connection between daylight and African-American representation in traffic stops as no longer significant. This VOD analysis suggests there is no racial disparity in traffic stops conducted by MSP troopers. At the same time, however, the observation period for this analysis (February 7 through April 6, 2020) was the start of the COVID-19 pandemic in the United States. Travel patterns and enforcement activities changed dramatically starting in March 2020 with Michigan's stay-at-home orders. This could have accounted for the different results between the main VOD results and those observed in the DST-restricted VOD analysis. It is possible that seasonal variation in the nature of traffic stops and/or the racial composition of drivers on the road may explain why daylight predicts driver race rather than trooper bias. VOD analysis in the coming years will help shed light on this possibility.

Post-stop outcome results:

The post-stop outcome analyses considered whether racial/ethnic disparities existed in the types of outcomes drivers receive after a traffic stop. Specifically, we examined whether driver race/ethnicity predicted the odds of receiving a warning, or being cited, searched, or arrested. The results were as follows:

- African-American drivers were significantly more likely than White drivers to be searched or arrested after traffic stops. There was mixed evidence regarding whether they were less likely to receive a citation than White drivers.

- Hispanic drivers were significantly more likely than White drivers to be searched or arrested after traffic stops.
- Asian drivers were significantly less likely to be searched or arrested compared to White drivers. However, they were significantly more likely to receive a citation than White drivers (and less likely to receive a warning).
- Regarding the reason for the traffic stop, drivers stopped for "hazardous" violations were significantly more likely to receive a citation, but less likely to be searched or arrested.

While we accounted for violent crime rates in the outcome analyses, we did not control for prior criminal history of traffic stop drivers. Doing so could change the results of the post-stop outcome analysis.

Secure Cities Partnership results:

There are 11 cities in Michigan that are part of the Secure Cities Partnership (SCP). Part of the SCP involves MSP providing additional patrol support in these jurisdictions to assist with crime suppression and enforcement. The racial/ethnic composition of these communities is much different than many other areas of Michigan. Therefore, it is possible the SCP location stops could influence the overall disparities observed in other analyses. We re-estimated all the above analyses after restricting our attention to only those stops that occurred in SCP locations and the results were as follows:

- Nearly 77% of all traffic stops in 2020 that occurred in SCP locations by troopers assigned to grant/directed patrol duties involved an African-American driver (compared to about 22% of all MSP traffic stops across the state in 2020).
- African-American drivers were significantly more likely to be stopped in 8-out-of-11 SCP locations than we would have expected based on their representation in the jurisdictions' populations. In three of the SCP locations, the percentage of African-American drivers stopped by MSP troopers was what we would have expected based on their representation in the respective city populations.
- In 7-out-of-11 SCP locations, African Americans were significantly more likely to be stopped by MSP troopers than we would have expected based on their representation in "not-at-fault" traffic crashes. In the remaining locations, African-American drivers were stopped less frequently or as frequently as we would have expected based on their representation in "not-at-fault" traffic crashes.
- African-American drivers were more likely to be stopped in 6-out-of-11 SCP locations than we would have expected based on the racial/ethnic composition of "at-fault" traffic crashes. In the remaining locations, African-American drivers were stopped less frequently or as frequently as we would have expected based on their representation in "at-fault" traffic crashes.
- To check the robustness of the main results of the report, we re-ran the primary analyses after excluding the SCP-related traffic stops. Stops that take place in SCP locations are likely

the result of different patrol/enforcement strategies (when compared to other locations throughout Michigan). The locations themselves also are different in terms of population sociodemographic makeup compared to areas outside of SCP cities. These factors may lead to differences in the racial/ethnic composition of SCP traffic stops compared to those outside of SCP locations. The analyses revealed that many of the substantive findings remained unchanged (i.e., the main findings are not caused solely by SCP location traffic stops). However, the magnitude of racial disparity was smaller across several districts after excluding SCP-related stops. Moreover, the largest difference was observed in District 3. After excluding SCP-related stops from the analysis in District 3, the amount of racial disparity was reduced by nearly 50%.

- The VOD analyses of the traffic stops that took place in SCP locations mirrored the findings from the main VOD results. Stops conducted during daylight were significantly more likely to involve African-American drivers than those that occurred during darkness. However, after accounting for potential seasonal variation in the nature of traffic stops or the makeup of drivers on the road, daylight no longer predicted whether a driver involved in a traffic stop was African American.
- The post-stop outcome analyses for the SCP stops largely reflected those conducted with all the traffic stops. African-American drivers were more likely than White drivers to be searched and arrested, but less likely to receive a citation. Drivers stopped for hazardous violations were more likely to receive a citation and less likely to be searched or arrested in SCP locations.

Conclusion:

- When taken as a whole, the various analyses in this report suggested African-American drivers experienced significant disparities with respect to MSP traffic stops. African-American drivers were significantly more likely to be stopped than we would have expected based on their representation in "not-at-fault" and "at-fault" traffic crashes. They were also more likely to be stopped during daylight compared to during darkness, which suggests racial bias *may* play a role in some troopers' stop behavior. However, after accounting for potential seasonal variation in driving and enforcement patterns, daylight no longer predicted if a driver was African American. This mixed VOD evidence suggests MSP should examine the nature of traffic stops in more detail to better understand where disparities can be addressed. Moreover, African Americans were more likely to be searched and arrested than White drivers, after accounting for relevant predictors of post-stop outcomes (e.g., reason for stop, violent crime rate). Again, the results should not be interpreted as evidence of the existence of racially discriminatory traffic stop practices at MSP. Rather, based on the findings, we strongly encourage MSP to dedicate additional time to more fully understand the extent to which observed disparities manifest because of discriminatory practices. The internal benchmarking dashboard MSP is currently working on is a step in the right direction. Using the dashboard may uncover specific areas or troopers that have problematic behavior. Or, use of the dashboard may provide important insight into why some disparities exist that are not due to discrimination.