# MONTANA HIGHWAY PATROL

## Traffic Stop Data Analysis Project

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# Washington State University

Division of Governmental Studies and Services

In Partnership with

Montana State University, Billings

# MHP Traffic Stop Data Analysis Project

## Data Analysis Project Report
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**Key Findings**

- Montana Highway Patrol data allow analyses of traffic stop records for the years 2009-2012.
- Analyses of those data indicate there is no apparent evidence of statewide systemic disproportionality in Montana Highway Patrol traffic patrol activity at the level of decision to stop.
- At the state level, both external and internal denominator descriptive comparisons indicate that there is no clear evidence of systemic bias in traffic stops conducted by the MHP.
  - In contrast to expectations that racial/profiling will manifest in increased daylight stops for minority groups, comparison between MHP day and night stops does not reveal any evidence of systemic bias.
  - As with other state-level measures, assessment of crash data does not indicate that bias exists in the decision to stop or to cite drivers.
- Analysis reveals only ten counties where racial/ethnic groups are stopped at higher rates in comparison to their percentage of the population.
  - All of these counties are contiguous to a Native American reservation, raising the possibility that jurisdictional differences and relationships are influencing traffic stops.
  - Eight of those ten counties show White drivers stopped at a higher rate than their proportion of the population, two show that pattern for Native Americans when analyzing percentages. The actual numbers of stops involved are very low.
- Analysis reveals only seven counties where racial/ethnic groups are stopped at substantially different rates when comparing daytime and nighttime stops.
  - Five of those counties show White drivers stopped at higher rates at night than during the day. One county reveals that trend for Asian drivers, and one for Black drivers – based on percentages. The actual numbers of stops involved are very low (<15 stops each in the last two counties).
- Because the county-level differences between census demographics and enforcement rates revealed by our analysis run in both directions, with Whites under-represented in some counties and over-represented in others, and because the actual numbers of cases involved in some of those counties are so small as to negate any statistically valid conclusions, we find no compelling evidence of systemic bias in traffic stops conducted by the Montana Highway Patrol

## Introduction

This report provides the observations and findings resulting from analyses of Montana Highway Patrol (MHP) traffic stop records conducted by a multi-disciplinary team of researchers associated with the Division of Governmental Studies and Services at Washington State University (WSU). This report also discusses the theoretical and practical influences and limitations on descriptive data analyses that have been performed on MHP traffic stop data by the research team.

The Montana Highway Patrol originally contacted WSU's Division of Governmental Studies and Services (DGSS) for assistance with this pilot analytical project in 2011. Following those early discussions, it was decided to include representatives of the Department of Sociology at Montana State University, Billings (MSUB) in this project due to their local knowledge, reputation in the state, and proximity to the MHP data repository. An initial contract for data analysis between MSUB and MHP was executed in July, 2012 – calling for analyses of traffic stop data collected by MHP from 2009-2011 for evidence of systemic bias in the decision to stop motorists in the State of Montana. A sub-award agreement between MSUB and WSU was formalized in late August, 2012. WSU obtained Institutional Review Board approval to work with these *human subjects* data in late September, 2012. The DGSS component of the research team assumed primary responsibility for initial quality assurance and all subsequent management and conversion of the data provided by MHP.

Prior to actually performing analyses designed to examine the data for evidence of biased policing, DGSS undertook a long and rigorous process of evaluability testing, quality assurance and data format examination to determine if biased policing analysis was possible using MHP data. Only after several rounds of data transfer and discussions with MHP data managers did

DGSS undertake actual analyses for purposes of this report. Analyses performed by DGSS were focused – consistent with the Scope of Work negotiated by the parties – on the decision to stop. Thus, our primary goal has been to convert disparate data sets, provided by MHP, into a consistent format that supports analyses which inform discussion of on the one hand, the apparent role of race in traffic stops conducted by the MHP, and on the other, whether convincing evidence of disproportionate enforcement activity is present in those data. While DGSS was working with MHP to obtain and evaluate traffic stop data, another year (2012) of traffic stop data became available and were added to the analysis. This report is thus based on separate and combined analyses, using several unique files received by DGSS from MHP which contain traffic stop data for the period January 2009 through December 2012. These separate files contain more than 350,000 records. DGSS was able to conduct several descriptive statistical assessments using these data. It is clear from the research and analyses conducted to this point that, there is no apparent evidence of statewide systemic disproportionality in Montana Highway Patrol traffic patrol activity at the point of decision to stop.

The most pressing issue in the study of biased traffic policing or "racial profiling" remains how to test for proportionality in police activities. This is not a simple task. It is largely dependent upon the availability of reliable data. The comparison between Census or other population demographics and the rate of police stops for minority drivers serves as an initial test for apparent disproportionality, and may serve to raise questions if disproportionality is found, but is not sufficient to establish the existence of racial profiling. For this reason, researchers attempt to broaden the number and type of comparisons used to test for disproportionality. MHP have worked collaboratively with DGSS researchers meeting and communicating regularly on traffic stop data issues and exploring the availability of other traffic stop or crash incident-related data coded for gender, race and ethnicity of drivers which might supplement Census data

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for comparative analyses. Experience elsewhere has confirmed that data on the race/ethnicity of all drivers (not solely those at fault) provide a robust standard of comparison that most closely approximates the race/ethnicity of drivers in a jurisdiction as well as their driving behavior. MHP added an element to their data collection protocol in November, 2011 to begin capturing race/ethnicity data for all drivers involved in crashes. Because these crash data are only available for comparison for 2012 and did not contain sufficient records including race/ethnicity to be of benefit at this time, we did not assess comparisons to crash data for this report. In future years, this separate dataset will serve as a very useful comparison for traffic stop data analyses.

Nor is disproportionality a clear indication of bias. Each individual encounter between citizen and police is based upon many factors – many of which have little to do with race or ethnicity. If disproportionality is observed, focusing only on race and ethnicity ignores this complexity. From a rigorous scientific research perspective, any valid approach analyzing apparent disproportionality must attempt to capture many (if not all) of the major factors leading up to and underlying individual contacts between citizens and police. Thus, in order to establish with confidence the presence of a race/ethnic bias in police discretionary decisions, nearly all other factors bearing on such decisions should be taken into proper account as well. To support a finding of racial profiling from an observed disparity in rate of stop, all other likely causes of this disparity must be eliminated. This process of elimination should include both general contextual information (patrol patterns, the demographics of drivers on that roadway, and such other considerations as alerts for described suspects) and incident-specific information such as the time of day, the location, the officer, and the subject of the stop or other police contact. This is a difficult, time-consuming and expensive proposition if done correctly, and one that – in the case with this study for the Montana Highway Patrol – is not critical to our finding of no evidence of systemic disproportionality.

**Theoretical Approaches to Biased Policing Research**

The U.S. Department of Justice defines the term racial profiling to mean "any police-initiated action that relies on race, ethnicity, or national origin rather than the behavior of an individual or information that leads the police to a particular individual who has been identified as being, or having been, engaged in criminal activity" (Ramirez, McDevitt and Farrell, 2000:3). This definition and the practical recognition that the opportunity for biased policing arises most frequently in situations which call for the exercise of that *discretion* with which society vests law enforcement personnel, must drive any research into this question.

Criticism of racial profiling on the part of law enforcement agencies has been largely based on anecdotes, but by the end of the 1990s widespread concern over the issue lead a number of jurisdictions to collect and analyze detailed quantitative data. Hundreds of law enforcement agencies in the U.S. report collecting information on the race/ethnicity of those citizens stopped by police officers (Mosher, Miethe and Philllips, 2002). While virtually every extant study of such data indicates that racial profiling **may** be occurring, it is important to stress that these studies do not provide **proof** that biased policing occurs. Without appropriate "denominator" data keyed to specific racial and ethnic populations, and without the addition of multivariate analyses of appropriate contextual information concerning traffic stops, it is not possible to distinguish biased policing from entirely appropriate, but demographically disproportionate, enforcement outcomes with respect to racial and ethnic characteristics. One approach to the denominator question, applied in this study, is the use of "internal benchmarking" (Walker, 2003) from data collected as part of the profiling study. It should be noted that there is no threshold evidence of systemic disproportionality in MHP stops. Nonetheless, we examined other comparative data,

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and were able to identify potential internal benchmarks in the data provided by the MHP.

## Montana Data Analysis Project

This project originated with a request from the Montana Highway Patrol for a research team from WSU and MSUB to apply their expertise in analytical approaches to the analyses of MHP data. The primary focus has been on external comparison with Census data because of the limited availability of data for "internal" analyses which can be accomplished using solely the data provided by MHP. This effort has resulted in several distinct areas of inquiry which include examination of the relationship between ethnicity and enforcement activity at the county level.

## Approaches to "Denominator" Analysis

One of the greatest problems associated with the analysis of traffic stop data is a problem that Samuel Walker (2000) and others have referred to as the "denominator problem." The denominator problem refers to the lack of a baseline or starting point in this kind of research that can be used for meaningful comparison. In order to confirm or disconfirm the presence of bias, researchers have to be able to compare observed rates of stop and enforcement activity with separate measures. Due to the fact that a baseline or starting point does not exist, it is necessary to find alternative data that can be used for comparison. The large majority of current studies on racial profiling have relied on simple comparisons of the race/ethnicity of those stopped with the relative representation of racial/ethnic groups in the population of the jurisdiction. DGSS uses this analytical strategy in these analyses of the Montana Highway Patrol data.

The DGSS team was able to obtain only very limited samples of other contextual data, which make external comparisons with observed MHP activity difficult and focused our analyses

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on comparisons to Census figures and such comparisons internal to the MHP traffic stop data as are available to explore the same relationships. None of the descriptive analytical work performed to date reveals compelling evidence of any statewide systemic bias in MHP stopping decisions. Our analysis of the data yield findings which do not confirm the existence of a significant statewide problem of disproportionate enforcement (biased policing) within the Montana Highway Patrol.

## Observations and Findings

The team's intensive work with supervisory, patrol and data-handling personnel in the MHP and the data themselves have provided the basis for the identification of a number of analytical models. Some of the models turned out to be impossible to test given the data as supplied or otherwise available. Each of the models used for analysis attempts to define or refine the application of comparative standards, or "denominators," to the observed rates for stop activity in the MHP Traffic Stop data. In this report we look at external comparisons to assess the relationship between race/ethnicity and traffic stops at the state and county levels to the extent that this is possible at this time. We also look at other denominator comparisons using internal comparisons among types of stops and time of stop. In some instances – especially at the county level – although the analyses can be accomplished, the number of actual cases involved is so small as to radically reduce the value of the statists.

## State Level Analysis

At the state level, both external and internal denominator descriptive comparisons indicate that there is no clear evidence of systemic bias in traffic stops conducted by the MHP.

# Stops[1]

*Table 1 (Montana Census Demographics – 2010 Census)*

| Montana Statewide Census Race & Ethnicity | Number | Percent |
|---|---|---|
| White | 884,961 | 89.4 |
| Black or African American | 4,027 | 0.4 |
| American Indian and Alaska Native | 62,555 | 6.3 |
| Asian | 6,253 | 0.6 |
| Native Hawaiian and Other Pacific Islander | 668 | 0.1 |
| Hispanic or Latino (of any race) | 28,565 | 2.9 |
| Total population | 989,415 | 100.0 |

Using 2010 census information for comparison at the state level, Table 2 illustrates minor differences between the proportion of specific groups in the population and the proportion of traffic stops for these groups. The analysis indicates that Native American Drivers and Hispanic Drivers are slightly under-represented in the number of stops statewide, while White Drivers, Asian Drivers and Black Drivers are slightly over-represented. These observed minor variations from the Census demographics are either too small to be problematic or – in the case of White drivers – opposite what would be expected if biased policing were a systemic issue.

*Table 2 (Percentage of Stops by Race/Ethnicity)*

| Enforcement Action | White Drivers | Asian Drivers | Black Drivers | Native American Drivers | Hispanic Drivers |
|---|---|---|---|---|---|
| Stops | 92.6% | .7% | .8% | 4.4% | 1.5% |
| Census | 89.4% | .6% | .4% | 6.3% | 2.9% |

Another comparison that has proven useful in traffic stop analyses is the "internal" comparison between types of observed offense, to test for patterns which might indicate bias.

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[1] Commercial violations have been removed from this analysis.

When analyzing reasons for stop among different race/ethnic groups, the percentage of drivers stopped for each offense are close to census demographics and do not yield evidence of a systemic pattern. Whites are slightly over-represented in stops for hazardous moving violations and license/registration/insurance offenses, while Native Americans are slightly over-represented in stops for equipment violations. Black drivers are slightly over-represented in stops for all offenses in comparison to census figures, while Hispanic drivers are slightly under-represented for each reason for stop.

**Table 3(Statewide Reason for Stop by Race/Ethnicity)**

| Specific Infractions | White Drivers | Asian Drivers | Black Drivers | Native American Drivers | Hispanic Drivers |
|---|---|---|---|---|---|
| Moving Violations Hazardous | 92.7% | .8% | .8% | 4.1% | 1.6% |
| Moving Violations Serious | 89.6% | .6% | 1.2% | 5.8% | 2.8% |
| Equipment | 89.8% | .4% | .5% | 7.5% | 1.8% |
| License/Registration/Insurance | 92.1% | .3% | .7% | 5.7% | 1.2% |
| Other | 90.8% | .4% | 1.2% | 5.5% | 2.2% |

When further comparing reasons for stop, there seems to be some variation in offense patterns among different race/ethnic groups. All race/ethnic groups are most likely to be stopped for hazardous moving violations. However, Native American drivers are more likely to be stopped for serious moving violations, vehicle license/registration offenses, and equipment violations than other drivers. While all groups are most often stopped for hazardous moving violations, Asian drivers are more likely than any other drivers to be stopped for these offenses.

**Table 4 (Within-group comparison of citations received by race/ethnicity)**

| Type of Infraction | White Drivers | Asian Drivers | Black Drivers | Native American Drivers | Hispanic Drivers |
|---|---|---|---|---|---|
| Moving Violations Hazardous | 86.4% | 93.5% | 88% | 81.4% | 86.9% |
| Moving Violations Serious | .8% | .7% | 1.2% | 5.8% | 2.8% |
| Equipment | 1.9% | .9% | 1.2% | 3.3% | 2.3% |
| License/Registration/Insurance | 10% | 4.4% | 8.2% | 13% | 8% |
| Other | .9% | .6% | 1.4% | 1.2% | 1.3% |

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## Daylight versus Night-Time Stops

Another effective "internal" comparison or denominator has proven to be the comparison between daytime and nighttime stops. It would stand to reason that improper application of race to traffic stop decisions would be more likely to take place during daylight hours when driver race/ethnicity can be more easily observed. In contrast to expectations that racial/profiling will manifest in increased daylight stops for minority groups, comparison between MHP day and night stops does not reveal any evidence of bias. The percentage of stops for Asian drivers, Black drivers, Native American drivers, and Hispanic drivers actually slightly increases at night. In fact, only the percentage of White drivers stopped by the Montana Highway Patrol decreased at night. These observations are contrary to what would be expected if biased policing were a systemic issue for the Montana Highway Patrol.

*Table 5 (Percentage of Day and Night Stops by Race/Ethnicity)*

| Time of Day | White Drivers | Asian Drivers | Black Drivers | Native American Drivers | Hispanic Drivers |
|---|---|---|---|---|---|
| Day | 92.8% | .7% | .8% | 4.1% | 1.5% |
| Night | 91.6% | .8% | 1% | 4.9% | 1.7% |

## Involvement in Crashes

Another effective benchmark used elsewhere for determining if racial disparity is present in the decision to stop is comparing traffic stop data with rates of involvement in crashes. In fact, it may be the most effective benchmark to utilize because officers do not know in advance the race of individuals involved in crashes; therefore, crash data can be seen as a racially "blind" measure. Unfortunately, until recently, crash data collected by the Montana Highway Patrol only includes race and ethnicity information for drivers that received a citation or warning. While this limits the effectiveness of this comparison as a truly comprehensive external

benchmark, the data can still provide useful information regarding driving trends. Table 6 displays the percent of drivers contacted by the Montana Highway Patrol due to an involvement in motor vehicle crashes, grouped by race,.[2] As with other state-level measures, assessment of crash data does not indicate that bias exists in the decision to stop or to cite drivers. As can be seen, the percentage of crashes by race and ethnicity track closely with the population demographics for the State of Montana.

**Table 6 (Statewide Crashes by Race/Ethnicity)**

|  | Crashes | Citations | Census |
|---|---|---|---|
| White Drivers | 90% | 90.1% | 89.4% |
| Asian Drivers | .5% | .8% | .6% |
| Black Drivers | .8% | 1% | .4% |
| Native American Drivers | 6% | 5.6% | 6.3 |
| Hispanic Drivers | 2.7% | 2.3% | 2.9% |

**County-level Analysis**

Most existing analyses of racial profiling/biased policing usually analyze data at either the state or city levels. Aggregating the data at the level of the state could potentially conceal important differences in the race/ethnicity of those contacted in individual counties. Thus, we have conducted analyses at the county level to test that our findings at the state level are borne out at this more particular level of analysis. Our analyses examine contacts and the outcome of contacts with respect to traffic stop enforcement activity for each of these racial/ethnic groups by county. Tables 7 through 9 report various elements of this analysis, building from simple census comparisons to more robust comparative analyses.

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[2] Crash data provided by the Montana Highway Patrol only included accident contacts that resulted in a traffic warning or citation. The data was provided in a separate file and not included with the statewide citations and warning data.

## Stops by County

Table 7 confirms that variations exist across Montana counties in the racial/ethnic proportions of traffic stop activity. In order to examine whether these differences are reflective of population differences, the percentage of stops for each racial/ethnic group was subtracted from their percentage of the population for each county to develop a net difference measure. The criterion used to determine whether such observed differences are significant is adopted from several other studies on racial profiling/biased policing, which assert that differences are substantially significant when the percentage of those contacted in a racial/ethnic group is more than 5 percentage points larger than their percentage of the population. This superficial analysis reveals a few counties where certain racial/ethnic groups are stopped at higher rates in comparison to their percentage of the population. White drivers are over-represented in contacts compared to their proportion of the population in Big Horn, Blaine, Chouteau, Glacier, Hill, Lake, Roosevelt, and Rosebud Counties. In several of these counties, the difference is quite significant. In eight of these counties (Big Horn, Blaine, Choteau, Glacier, Hill, Lake, Roosevelt, and Rosebud) the difference is well over the 5 percentage point criterion. This is again contrary to what would be expected if biased policing were occurring in those counties. The analysis also reveals that Native Americans are over-represented in stops compared to their proportion of the population in two counties with significant propinquity to Native American reservations: McCone and Petroleum Counties. It should also be noted that the number of cases upon which these county-level assessments are based is quite small. In McCone and Petroleum Counties, for instance, the percentage differences reflect fewer than ten individual cases.

## Table 7 (Percent Stopped by Race and County)

| County | White Drivers | Asian Drivers | Black Drivers | Native American Drivers | Hispanic Drivers | Number of Stops |
|---|---|---|---|---|---|---|
| Beaverhead | 94.4% | 1% | 1.2% | 1% | 2.4% | 2465 |
| Big Horn | 65.1% | .9% | 1.9% | 29.1% | 3% | 5347 |
| Blaine | 74.7% | .3% | .9% | 23.5% | .6% | 3177 |
| Broadwater | 96.6% | .9% | .7% | .8% | 1% | 6143 |
| Carbon | 95.8% | .6% | .6% | .7% | 2.3% | 2977 |
| Carter | 93.1% | 0 | 3.4% | 0 | 3.4% | 26 |
| Cascade | 93.8% | .8% | 1.6% | 2.6% | 1.2% | 26235 |
| Chouteau | 85% | .6% | .4% | 12.9% | 1.1% | 2971 |
| Custer | 93.2% | .7% | 1.3% | 2.3% | 2.6% | 9242 |
| Daniels | 95.8% | .1% | .4% | 2.3% | 1.4% | 795 |
| Dawson | 92.3% | 1% | 1.4% | 3.6% | 1.6% | 8233 |
| Deer Lodge | 95% | 1.4% | 1.2% | 1% | 1.5% | 9424 |
| Fallon | 96.7% | .2% | 0 | .4% | 2.7 | 508 |
| Fergus | 95.4% | .2% | .5% | 3% | .9% | 2603 |
| Flathead | 97.8% | .4% | .2% | .9% | .6% | 36349 |
| Gallatin | 96.4% | .9% | .6% | 1.5% | .6% | 32860 |
| Garfield | 97.8% | .2% | .8% | .9% | .3% | 892 |
| Glacier | 85% | .7% | .3% | 13.3% | .7% | 2808 |
| Golden Valley | 94.5% | .6% | 1.1% | 2.4% | 1.3% | 580 |
| Granite | 94.2% | 1.8% | 1.4% | .8% | 1.8% | 2198 |
| Hill | 80.5% | .3% | .6% | 17.9% | .8% | 9828 |
| Jefferson | 95.4% | 1% | 1.1% | 1.1% | 1.4% | 7252 |
| Judith Basin | 94.9% | .8% | 1.3% | 1.9% | 1.1% | 2967 |
| Lake | 90.2% | .3% | .4% | 8.2% | .9% | 12850 |
| Lewis and Clark | 96.9% | .5% | .5% | 1.2% | .9% | 20176 |
| Liberty | 92.4% | .4% | .9% | 5% | 1.4% | 758 |
| Lincoln | 97.9% | .3% | .3% | .6% | .8% | 7312 |
| Madison | 96.9% | 1% | .3% | .4% | 1.4% | 2180 |
| McCone | 87% | .9% | .3% | 11.1% | .7% | 552 |
| Meagher | 97.9% | .7% | .4% | 0 | 1.1% | 279 |
| Mineral | 93.3% | 1.8% | 1.5% | 1.4% | 2% | 6946 |
| Missoula | 95.6% | .8% | .6% | 1.7% | 1.2% | 21141 |
| Musselshell | 92.9% | .5% | .6% | 4.6% | 1.4% | 2008 |
| Park | 95.7% | 1.1% | .9% | .6% | 1.7% | 9539 |
| Petroleum | 87.3% | .6% | 1.2% | 7.9% | 3% | 160 |
| Phillips | 90.5% | .4% | .6% | 7.7% | .8% | 1454 |
| Pondera | 84.7% | 1.6% | .7% | 11.9% | 1% | 3849 |
| Powder River | 90.4% | .9% | 1.6% | 2.7% | 4.3% | 624 |
| Powell | 94.5% | 1.6% | 1.2% | 1.1% | 1.7% | 11823 |
| Prairie | 91.1% | 1.3% | 1.5% | 3.7% | 2.4% | 1006 |
| Ravalli | 98.3% | .3% | .2% | .3% | .9% | 11144 |
| Richland | 94.6% | .3% | 1.1% | 1% | 3% | 3284 |
| Roosevelt | 79.2% | .4% | 1.2% | 17.1% | 2.1% | 4894 |
| Rosebud | 90.5% | .7% | 1% | 5.8% | 2% | 6964 |
| Sanders | 97.8% | .4% | .3% | 1.1% | .4% | 3594 |
| Sheridan | 95.7% | .3% | .6% | 1.9% | 1.4% | 1140 |
| Silver Bow | 95.2% | 1% | .8% | 1.3% | 1.7% | 8546 |
| Stillwater | 90.8% | .8% | 1.2% | 1.2% | 6.1% | 5876 |
| Sweet Grass | 92.7% | 1.5% | 1.3% | 1.3% | 3.2% | 2694 |
| Teton | 93.2% | 1% | .6% | 4.4% | .9% | 1499 |
| Toole | 92.4% | 1.1% | .8% | 4.7% | 1% | 3109 |
| Treasure | 93.4% | 1.3% | 1.5% | 106% | 2.1% | 944 |
| Valley | 90.5% | .2% | .7% | 7.3% | 1.3% | 3391 |
| Wheatland | 93.4% | 1% | 1.2% | 2.5% | 1.8% | 857 |
| Wibaux | 95.2% | .5% | 1.6% | .9% | 1.7% | 723 |
| Yellowstone | 91.8% | .5% | 1.1% | 3.8% | 2.8% | 27383 |

Table 8 shows the net difference between MHP contact percentages and Census percentages for each county. Counties where that difference exceeds the 5% threshold are indicated with an asterisk (*) and include Big Horn, Blaine, Glacier, Lake, Roosevelt and Rosebud – where White drivers are significantly over-represented – and McCone and Petroleum Counties – where Native Americans are over-represented. It may be, as we suspect from the information available to us at this time, that the presence of a Native American reservation, with different requirements for driving and licensing vehicles and with different enforcement agreements in place, is a contributing factor to these facial disproportionalities. Without further analysis, however, these disproportionalities simply raise questions for further assessment, rather than serving as proof of bias – especially of a systemic variety.

# Table 8 (Percent Contacted Minus Percent in Population by Race and County)

| County | White Drivers | Asian Drivers | Black Drivers | Native American Drivers | Hispanic Drivers |
|---|---|---|---|---|---|
| Beaverhead | -0.7 | +0.4 | +0.4 | -0.6 | -1.5 |
| Big Horn* | +33.3* | +.03 | +1.5 | -35.3 | -1.7 |
| Blaine* | +26.6* | 0 | +0.7 | -25.9 | -1.5 |
| Broadwater | +0.3 | +0.7 | +.03 | -0.6 | -2.5 |
| Carbon | -1.3 | +0.2 | +0.1 | -0.3 | +0.1 |
| Carter | -5.2 | +0.1 | +3.3 | -1 | +2.7 |
| Cascade | +4.2 | -0.1 | -0.2 | -1.9 | -2.6 |
| Chouteau* | +7.7* | +0.2 | +0.2 | -7.4 | -0.7 |
| Custer | -2.2 | +0.3 | +0.8 | +0.4 | +0.1 |
| Daniels | +0.1 | -0.2 | +0.2 | +0.1 | -0.5 |
| Dawson | -3.2 | +0.6 | +1.1 | +1.7 | -1 |
| Deer Lodge | +1.9 | +0.9 | +0.7 | -2.4 | -1.4 |
| Fallon | -0.8 | -0.4 | -0.2 | +0.2 | +1.2 |
| Fergus | -1.1 | -0.1 | +0.2 | +1.7 | -0.9 |
| Flathead | +2.2 | -0.3 | -0.2 | -0.3 | -1.9 |
| Gallatin | +0.9 | -0.3 | +0.2 | +0.5 | -2.3 |
| Garfield | -0.1 | 0 | +0.6 | +0.5 | -0.3 |
| Glacier* | +52.5* | +0.4 | +0.1 | -50.4 | -1.6 |
| Golden Valley | -1.1 | -0.1 | +0.6 | +1.4 | -2.2 |
| Granite | -2.5 | +1.5 | +0.9 | -0.3 | +0.1 |
| Hill* | +7.2* | -0.3 | +0.2 | -4.2 | -1.9 |
| Jefferson | +0.1 | +0.6 | +0.7 | -0.4 | -0.5 |
| Judith Basin | -3.1 | +0.5 | +1.2 | -1.1 | -0.3 |
| Lake | +21.3* | -0.2 | 0 | -14.8 | -2.8 |
| Lewis and Clark* | +2.7 | -0.1 | -0.2 | -0.9 | +1.8 |
| Liberty | -5.9 | +0.3 | +0.8 | +0.3 | +0.7 |
| Lincoln | +2 | -0.1 | 0 | +0.5 | -1.8 |
| Madison | -0.1 | +0.6 | -0.2 | +0.4 | -1.3 |
| McCone | -10.5 | +0.8 | -0.2 | +10.5* | -0.3 |
| Meagher | +0.3 | +0.4 | 0 | -0.5 | -0.3 |
| Mineral | -1.2 | +1.1 | +1 | -0.3 | -0.6 |
| Missoula | +2.8 | -0.5 | +0.1 | -1 | -1.6 |
| Musselshell | -3.2 | +0.2 | +0.1 | +3.4 | -1.3 |
| Park | -0.8 | +0.7 | +0.7 | -0.5 | -0.8 |
| Petroleum | -11.9 | +0.6 | +1.2 | +7.9* | +2 |
| Phillips | +2.8 | +0.1 | +0.6 | -1.7 | -1.4 |
| Pondera | +2.1 | +1.2 | +0.4 | -2.7 | -0.5 |
| Powder River | -5.7 | +0.6 | +1.5 | +1.1 | +2.7 |
| Powell | +2.2 | +1.1 | 0 | -3.6 | -0.5 |
| Prairie | -4.6 | +0.4 | +1.5 | +3.4 | +0.6 |
| Ravalli | +2.2 | -0.3 | -0.1 | -0.7 | -2.2 |
| Richland | -1.1 | 0 | +0.8 | -0.7 | -0.9 |
| Roosevelt* | +42.5* | -0.1 | +1 | -42.4 | +0.3 |
| Rosebud* | +29.5* | +0.1 | +0.7 | -29.3 | -1.7 |
| Sanders | +5.8 | 0 | 0 | -3.2 | -2.1 |
| Sheridan | +0.3 | -0.2 | +0.2 | +0.3 | -0.3 |
| Silver Bow | +0.4 | +0.4 | +0.4 | -0.7 | -2.2 |
| Stillwater | -6.7 | +0.4 | +0.7 | +0.6 | +3.3 |
| Sweet Grass | -4 | +0.8 | +1 | +0.7 | +1.6 |
| Teton | -3 | +0.9 | +0.5 | +2.7 | -0.6 |
| Toole | +0.8 | +0.5 | +0.1 | -0.5 | -2.2 |
| Treasure | -1.2 | +0.9 | +1.4 | -0.7 | -1.7 |
| Valley | +3 | -0.3 | +0.4 | -2.3 | -0.3 |
| Wheatland | -2.6 | +0.5 | +0.8 | +1.7 | +0.2 |
| Wibaux | -2.2 | 0 | +1.1 | +0.4 | -0.4 |
| Yellowstone | +0.4 | +0.3 | +0.3 | -0.5 | -2.1 |

County-level analysis of day and night stops was also conducted in order to determine if minority race/ethnic groups were stopped at higher percentages during the day (indicating possible bias) than night. The analysis reveals that White drivers are stopped at substantially higher percentages during the day in Big Horn, Glacier, Hill, Lake and Roosevelt counties. Black drivers are more likely to be stopped during daylight hours only in Carter County, while Asian drivers are more likely to be stopped during the day in Treasure County.

*Table 9 (Percentage of "Day and Night" Contacts by Race/Ethnicity and County)*

| County | White Drivers | | Asian Drivers | | Black Drivers | | Native American Drivers | | Hispanic Drivers | | Number of Stops | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night |
| Beaverhead | 95% | 92% | .9% | 1.2% | 1% | 2.2% | 1% | .8% | 2.1% | 3.8% | 1984 | 481 |
| Big Horn* | 66%* | 52.7% | 1.2% | .3% | 1.6% | 1.4% | 28.7% | 41.7% | 2.5% | 3.9% | 4092 | 1255 |
| Blaine | 74.8% | 74.4% | .4% | 0% | .9% | 1% | 23.5% | 23.7% | .5% | 1% | 2360 | 817 |
| Broadwater | 96.7% | 96.3% | .9% | .9% | .7% | .7% | .6% | 1.2% | 1.1% | .9% | 4693 | 1450 |
| Carbon | 96% | 95% | .7% | .5% | .6% | .5% | .5% | 1% | 2.1% | 2.9% | 2198 | 779 |
| Carter* | 92.6% | 100% | 0 | 0 | 3.7%* | 0 | 0 | 0 | 0 | 0 | 24 | 2 |
| Cascade | 94.4% | 92.1% | .8% | .9% | 1.3% | 2.5% | 2.4% | 3.2% | 1.2% | 1.3% | 19309 | 6926 |
| Chouteau | 85.4% | 82.4% | .6% | .6% | .5% | .2% | 12.4% | 15.6% | 1.1% | 1.3% | 3439 | 532 |
| Custer | 93.1% | 93.3% | .7% | .7% | 1.4% | .9% | 2.2% | 2.5% | 2.6% | 2.5% | 7302 | 1940 |
| Daniels | 96.1% | 94.2% | .1% | 0 | .3% | .8% | 1.8% | 5% | 1.7% | 0 | 675 | 120 |
| Dawson | 92.5% | 91.6% | .9% | 1.2% | 1.5% | 1.4% | 1.5% | 1.7% | 3.5% | 4% | 6470 | 1763 |
| Deer Lodge | 95% | 94.8% | 1.4% | 1.4% | 1.2% | 1.2% | 1% | 1.1% | 1.4% | 1.6% | 7207 | 2217 |
| Fallon | 96% | 99.1% | .3% | 0 | 0 | 0 | .5% | 0 | 3.3% | .9% | 397 | 111 |
| Fergus | 95.1% | 96.2% | .2% | .2% | .5% | .8% | 3.1% | 2.5% | 1% | .3% | 1978 | 625 |
| Flathead | 97.9% | 97.7% | .4% | .4% | .2% | .3% | .9% | .8% | .6% | .8% | 27046 | 9303 |
| Gallatin | 96.6% | 95.9% | .8% | 1% | .6% | .7% | .6% | .7% | 1.4% | 1.7% | 23497 | 9363 |
| Garfield | 98% | 97.1% | .3% | 0 | .4% | 2.3% | .9% | .6% | .4% | 0 | 722 | 170 |
| Glacier* | 86%* | 80.9% | .8% | .5% | .3% | .2% | 12.1% | 18.1% | .8% | .3% | 2229 | 569 |
| Golden Valley | 94.5% | 94.5% | .6% | .9% | 1.2% | .9% | 2.3% | 2.8% | 1.4% | .9% | 475 | 105 |
| Granite | 94.7% | 92.7% | 1.7% | 2.2% | 1.2% | 2% | .7% | 1% | 1.6% | 2.2% | 1612 | 586 |
| Hill* | 81.4%* | 78.1% | .3% | .5% | .5% | .9% | 17.1% | 19.9% | .8% | .7% | 7237 | 2591 |
| Jefferson | 95.5% | 95.2% | 1.1% | .8% | 1.1% | 1.2% | 1.1% | .9% | 1.3% | 1.9% | 6001 | 1251 |
| Judith Basin | 95.1% | 93.8% | .6% | 1.3% | 1.2% | 2% | 1.8% | 2.4% | 1.3% | .6% | 2445 | 522 |
| Lake* | 91.5%* | 85.6% | .3% | .4% | .3% | .6% | 7% | 12.3% | .8% | 1.1% | 9950 | 2900 |

| County | White Drivers | | Asian Drivers | | Black Drivers | | Native American Drivers | | Hispanic Drivers | | Number of Stops | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night |
| Lewis and Clark | 97% | 96.5% | .5% | .5% | .5% | .7% | .9% | .1% | 1.1% | 1.3% | 13949 | 6227 |
| Liberty | 93.1% | 89.8% | .3% | .6% | 1% | .6% | 4% | 8.4% | 1.6% | .6% | 595 | 163 |
| Lincoln | 97.9% | 97.9% | .3% | .3% | .3% | .4% | .6% | .6% | .9% | .7% | 5293 | 2019 |
| Madison | 97.3% | 95.3% | .8% | 1.9% | .2% | .4% | .4% | .4% | 1.3% | 1.9% | 1739 | 441 |
| McCone | 87.3% | 94.8% | 1% | 0 | .2% | 1.3% | 10.9% | 12.7% | .6% | 1.3% | 476 | 76 |
| Meagher | 98.2% | 96.7% | .5% | 1.7% | .5% | 0 | 0 | 0 | .9% | 1.7% | 219 | 60 |
| Mineral | 93.9% | 91.7% | 1.8% | 1.8% | 1.5% | 1.5% | 1% | 2.4% | 1.7% | 2.7% | 5063 | 1883 |
| Missoula | 96.1% | 94.6% | .6% | 1% | .6% | .8% | 1.5% | 2.2% | 1.2% | 1.4% | 13976 | 7165 |
| Musselshell | 92.8% | 93.2% | .6% | .2% | .6% | .6% | 4.5% | 4.7% | 1.5% | 1.4% | 1511 | 497 |
| Park | 95.7% | 95.9% | 1.1% | 1.1% | .8% | .9% | .7% | .4% | 1.7% | 1.7% | 7768 | 1771 |
| Petroleum | 86.4% | 92% | .7% | 0 | .7% | 4% | 8.6% | 4% | 3.6% | 0 | 136 | 24 |
| Phillips | 90.3% | 91.1% | .5% | 0 | .7% | .3% | 7.7% | 7.6% | .8% | 1.1% | 1091 | 363 |
| Pondera | 85.1% | 83.1% | 1.6% | 1.6% | .7% | .7% | 11.4% | 13.9% | 1.1% | .7% | 3046 | 803 |
| Powder River | 89.9% | 92.4% | .8% | 1.4% | 1.9% | .7% | 2.7% | 2.8% | 4.7% | 2.8% | 506 | 118 |
| Powell | 94.7% | 93.3% | 1.5% | 1.8% | 1.1% | 1.6% | 1.1% | 1.2% | 1.6% | 2.1% | 9626 | 2197 |
| Prairie | 91% | 91.5% | .8% | 2.5% | 1.5% | 1.4% | 3.4% | 0 | 3.4% | 4.6% | 731 | 275 |
| Ravalli | 98.4% | 97.9% | .3% | .4% | .2% | .4% | .3% | .4% | .9% | 1% | 8076 | 3065 |
| Richland | 94.6% | 94.5% | .3% | .5% | 1% | 1.4% | 1% | .8% | 3.1% | 2.9% | 2443 | 841 |
| Roosevelt* | 80.8%* | 74.5% | .3% | .7% | 1.2% | 1.3% | 15.7% | 21.2% | 2.1% | 2.4% | 3632 | 1262 |
| Rosebud | 90.7% | 89.4% | .7% | .7% | 1% | 1.4% | 5.8% | 6% | 1.9% | 2.5% | 5855 | 1109 |
| Sanders | 97.9% | 97% | .3% | .8% | .3% | .4% | 1.1% | .9% | .4% | .9% | 3071 | 523 |
| Sheridan | 96.3% | 94.1% | .2% | .6% | .5% | .9% | 1.7% | 2.5% | 1.3% | 1.9% | 835 | 305 |
| Silver Bow | 95.3% | 95% | .9% | 1.2% | .7% | .9% | 1.2% | 1.5% | 1.8% | 1.4% | 5745 | 2801 |
| Stillwater | 90.6% | 91.4% | .8% | 1.1% | 1.2% | 1.1% | 1.1% | 1.3% | 6.3% | 5.1% | 4749 | 1127 |
| Sweet Grass | 92.8% | 92.1% | 1.6% | .9% | 1.4% | .7% | 1.3% | 1.2% | 2.9% | 5.1% | 2268 | 426 |
| Teton | 93.2% | 92.9% | 1% | 1% | 35% | 1% | 4.3% | 4.5% | .9% | .5% | 1301 | 198 |
| Toole | 92.6% | 91.4% | 1.2% | 1% | .7% | 1% | 4.6% | 5.2% | .9% | 1.5% | 2425 | 684 |
| Treasure* | 93.6% | 91.6% | 1.5% | 0 | 1.6% | .9% | 1.4% | 3.7% | 1.9% | 3.7% | 843 | 101 |
| Valley | 90.7% | 89.5% | .3% | 0 | .8% | .4% | 6.8% | 8.9% | 1.4% | 1.2% | 2591 | 800 |
| Wheatland | 93.2% | 93.9% | 1% | 1.1% | 1.1% | 1.5% | 2.7% | 1.9% | 1.9% | 1.5% | 605 | 252 |
| Wibaux | 95.6% | 93.9% | .5% | .6% | 1.5% | 1.8% | .9% | 1.2% | 1.5% | 2.5% | 562 | 159 |
| Yellowstone | 92.4% | 90.4% | .5% | .6% | 1% | 1.4% | 3.4% | 4.8% | 2.8% | 2.8% | 19398 | 7985 |

Because the differences between census demographics and enforcement rates revealed by this partial analysis run in both directions, with Whites under-represented in some counties and over-represented in others, and because the actual number of cases involved in some of the

counties with observed percentage disproportionalities is very small, we do not see these disproportionalities as indicative of systemic bias. Rather, it is more likely that other factors – not covered by the data available – are at work in these specific situations.

## Conclusions

The descriptive analysis conducted does not reveal that racial profiling/biased policing is an issue at the state-wide level. At the point of stop, our comparative analysis of the MHP traffic stop data indicates that non-White racial/ethnic groups examined are not stopped at significantly higher rates than their overall proportion of the population. Rather, the analysis indicates that White drivers are stopped at slightly higher rates when compared to their proportion of the Montana population in most Montana counties. The county-level analysis does suggest that two counties may benefit from further research to examine external factors which might impact the proportionality of stops. The analysis, which is based on such small numbers of stops over the time period studied as to reduce our confidence in any statement from those analyses – reveals Native Americans are over-represented in stops compared to their proportion of the population in McCone and Petroleum Counties. Interestingly, the analysis also indicates that White drivers are over-represented in stops compared to their proportion of the population in 8 counties: Big Horn, Blaine, Chouteau, Glacier, Hill, Lake, Roosevelt, and Rosebud. All of these counties are contiguous to Native American reservations, which may indicate an interplay between jurisdictional requirements and authorities that cannot be assessed with this data.

It is important to note that descriptive analysis can only provide a threshold examination of traffic stop for evidence of racial profiling/biased policing, and is more useful for disproving the existence of systemic bias than for establishing that such bias exists. The potential exists for moving beyond level of stop to examine enforcement activity in more detail, such as assessment

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of patterns in citation and warning. It is also potentially possible to assess other variables which might impact variations in enforcement activities, to develop a more complete assessment of MHP traffic enforcement activities. These were not contemplated in the current project, but might be considered for future studies.

**Recommendations**

Truly effective racial profiling/biased policing data analysis requires multiple types and sources of data to conduct comparisons and make an assessment of whether potential issues may exist. Additional sources of data for contextualization and comparison have been identified which would require further coordination with the Montana Highway Patrol. These include the capturing of information on special patrols, targeted enforcement activity, and all other management-directed activity which would work to reduce individual trooper discretion. Other sources of data such as statewide crash data have also been identified which may provide an additional standard of comparison against which to measure Patrol enforcement activity rates.

The recommendations below suggest some opportunities to refine data gathering and management techniques in order to provide for expanded analyses to determine the presence or absence of indicators of racial profiling/biased policing in the future.

1) Case-wise data management: We strongly urge the Montana Highway Patrol to adopt data management practices which would allow the examination of traffic stops in a case-wise fashion – something we have only been able to accomplish in a limited fashion with this study.

2) In order to increase opportunities for comparison, a uniquely identifiable record of each citizen contact which commonly results in enforcement action by the trooper should be created and maintained. Requiring such a unique record to be generated for every contact will result in comparative data which will allow researchers to

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compare stops where officers have discretion and stops with no officer discretion in order to make stronger assessments of whether evidence of racial profiling/biased policing exists.

3) In addition to requiring a unique identifier for every *enforcement related* contact, it is recommended officers record race/ethnicity information for each citizen contact including dispatched calls for service and citizen assists. This information is a very useful addition to compare types of contact by race/ethnicity including discretionary and nondiscretionary contact.

4) It is also recommended that a central records category describing the type of contact should be created. This capability may already exist. However, creating a field that distinguishes between types of contact will aid data comparison and data management for researchers.

5) We would also recommend that codes which are not customarily observable reasons for a stop be removed from "Reason for Stop" in order to enhance the ability to analyze reason for stop and allow researchers to better determine driving behavior and driving differences among groups.