Final Report:

Police Vehicle Stops in Sacramento, California

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Executive Summary

Final Report

on

Police Vehicle Stops in Sacramento, California

This document reports findings from the University of Southern California's study of race and vehicle stops made by officers of the Sacramento Police Department.

Data presented in this report are based primarily upon records of 36,854 vehicle stops completed by Sacramento police officers during a year-long study period, from July 1, 2000, to June 30, 2001. Extensive use has also been made of data from the 2000 United States Census and police department records of crime reports, suspect descriptions, radio communications, and parolee residence locations to provide a context for racial patterns in vehicle stops.

The study's key objective has been to assess the degree to which, between July 1, 2000, and June 30, 2001, "racially-biased policing" or "racial profiling" may have taken place in vehicle stops carried out by Sacramento police. These terms are understood here to signify inappropriate consideration of race in initiating law enforcement activities (e.g., vehicle stops, detentions, arrests, searches). Policing patterns intended to control crime which incidentally result in more frequent stops of minority drivers, even if

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motivation for making these stops may in part include the driver's race, cannot be

considered racial profiling.   For further discussion, see page 10.

Analysis of data collected in this study clearly indicates that Sacramento police officers stop African-American drivers more often than their representation in the driving-age population would suggest. The data, however, support explanations of this pattern other than deliberate stopping of drivers only because they are minorities. Several observations suggest that the Sacramento Police Department does not differentially stop, detain, or search members of any racial group for reasons other than police work of a kind consistent with community needs and requests.   Reasons for this conclusion include:

- Relative to their percentages in the population, people who are reported as crime suspects by citizens, and who thus risk being stopped by police, are more likely to be African-American.

- White officers are no more likely to stop minority drivers than are African-American and Hispanic officers.

- The actions of the officers who stop the highest proportion of minorities do not significantly inflate the representation of minorities among drivers stopped in Sacramento.

- Stops reported in a test period during which officers were not required to identify themselves on study forms evidenced a proportion of minority stops no greater than that reported during the period when all officers were required to identify themselves on the forms.

- Officers in vehicles with cameras were found to stop African-American drivers more frequently than were officers in vehicles without cameras; the opposite would be expected if officers normally practiced racially-biased policing.

- Several pieces of evidence suggest that officers are frequently unable to identify the race of a driver prior to stopping his or her car. See page 39.

These basic facts also emerge from the study:

- While African-Americans are over-represented among individuals stopped by Sacramento police, Asian/Pacific Islanders and whites are underrepresented; Hispanics are stopped in the approximate proportion in which they are found in the driving-age population.

- African-Americans and Hispanics are more likely to be searched when stopped than whites.

- When stopped, African-Americans and Hispanics are more likely to be subject to long detention (thirty minutes or longer) than whites, usually due to a search, arrest, or tow.

- The fact that African-Americans are over-represented both among suspects and victims of crime offers a potential explanation of over-representation of African-Americans among drivers who are stopped.

Several limitations must be acknowledged in the study. The most important regards the population against which the distribution of stopped drivers is compared. Most frequently in this report, proportions of specific minority groups among drivers stopped are compared with the percentages these minorities represent in the City of Sacramento's population over 15 years of age according to the 2000 United States Census. But the population over 15 years of age, as enumerated by the census, constitutes only an approximation of the individuals driving within the City of Sacramento during the study period. The census may differ from the driving population because:

- Not all Sacramento residents age 15 and over drive or have vehicles.

- Many people driving in Sacramento at any given time (about one-third in a sample of vehicle stop records) reside outside the city.

- The census undercounts the population, and is believed to undercount minorities by the greatest magnitude.

Another source of error includes the possibility that officers will, through misperception, incorrectly categorize the driver's race on the study form. Still another source of error may be that drivers of different races have different likelihood of committing traffic violations.

Based on this research it is recommended that ways be sought to sharpen the ability of officers to distinguish likely criminals from non-criminals when working in minority areas. The greatest over-representation of minorities occurs in "high-discretion" stops, which officers often carry out for investigative purposes. It seems likely that a substantial number of drivers who are not connected with criminal activity are stopped by officers as part of patrol or investigative work. In conducting investigative work, officers must find a balance between officer safety and courteous, professional treatment of the drivers they stop.

Overview

The University of Southern California (USC) School of Policy, Planning, and Development has performed a study for the Sacramento Police Department to determine: (1) whether vehicle stops made by officers of the Department over-represent minority drivers; (2) where and under what conditions over-representation of minorities is likely to take place; and, (3) whether any over-representation of minorities among drivers stopped in Sacramento reflects racial profiling or racially-biased policing. This work has also sought to determine whether minority drivers are more often subject to intrusive procedures associated with stops. These include requests that drivers and passengers exit the car, vehicle searches, and stops lasting longer than usual for a particular type of detention. The City of Sacramento and the USC have undertaken this work as a pro-active step toward addressing the national issue of "racial profiling."

"Racial profiling" and "racially-biased policing" are understood to mean law enforcement activities (e.g., detentions, arrests, searches) that are inappropriately initiated on the basis of race. The Sacramento Police Department has a policy that expressly prohibits bias-based policing. Racial profiling and racially-biased policing are recognizable by over-representation of minorities among drivers stopped by police officers in a manner which cannot be explained by traffic patterns, area demographics, or police practices strictly intended to control crime in particular communities.

Procedures used in the research reported here included the following:

- Developing a data form to be completed by police officers for all vehicle stops.

- Accompanying officers in their vehicles ("ride-alongs") to pre-test the data form and assess the ability of police officers to identify a driver's race prior to stopping his or her car.

- Validating information reported in the data forms via telephone calls to citizens who had been stopped.

- Compiling computer files including data on vehicle stops, police officer characteristics, area demographics, suspect description broadcasts, and crime report demographics.

- Performing descriptive and multivariate data analysis to determine whether selected minorities are over-represented in vehicle stops even after social, crime, and geographic background variables have been explained.

- Determining whether members of minority groups who are stopped experience a greater likelihood of intrusive procedures such as longer-than-average stops, requests to exit the car, and searches.

The research team was headed by Professor Howard P. Greenwald and included USC

personnel Richard Callahan and Paul Danczyk.   Activities of the project team included

meeting with police and citizens, directly observing police officers at work, making

independent observations of traffic, and periodically discussing observations with the

Police Department's leadership to obtain their comments and suggestions for additional

analyses.

The present report contains analysis of the final and complete data obtained in the study.

What are Racial Profiling and Racially Biased Policing?

The data on police stops collected for this report must be interpreted according to

conceptions of acceptable and unacceptable police practices regarding race. Although

this study was originally framed in terms of "racial profiling," the term has fallen into

widespread disfavor among police and citizens. "Racially-biased policing" appears to be

applicable to a broader range of activities than "racial profiling."

The "Racial Profiling" Concept

Racial profiling is a term most often associated with vehicle stops by police officers. The

term "profiling" originates from policies historically developed for interception of illicit

drugs. The practice was said to be intensely employed on interstate routes in the eastern

United States known to be used for drug distribution. According to alleged profiling

policies, race was a key criterion in determining which cars were stopped. The practice

of racial profiling became controversial as members of the public began to believe that

race was being used as the predominant or sole criterion according to which drivers were

stopped. Racial profiling of this kind was said to result in numerous stops and searches

of innocent people, perceived by many as intrusive and humiliating.

Today, observers of law enforcement often refer to racial profiling as a pattern of police

behavior, deliberate or accidental, in which contact with a citizen is initiated primarily

because of the citizen's race. The concept of profiling may also include nationality, age,

sexual orientation, gender, religion, or disability.

As currently viewed by analysts, the central feature of racial profiling is its use of race as

the predominant motivation for stopping, questioning, searching, or detaining a citizen.

A United States Department of Justice publication defines racial profiling as:

> Any police-initiated action that relies on the 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.[1]

A University of Minnesota study arrives at a highly similar definition.[2]

It is noteworthy that both the federal and University of Minnesota definitions characterize racial profiling as a practice which "relies on" race rather than using it exclusively for deciding to initiate a citizen encounter. It would appear that many more police officers "rely upon" race – that is, use it as a factor of predominant importance -- rather than employ race as the sole criterion for stopping a citizen. Racial profiling according to this standard is more inclusive than the "sole reason" test.

"Racially-Biased Policing" and the "Appropriateness" Test

More recent thinking about race and law enforcement has come to reflect the complexity involved in a police officer's decision to initiate an encounter with a specific citizen. The term "racially biased policing" goes beyond the criterion of sole or predominant reliance upon race in initiating police action. A recent Police Executive Research Forum (PERF) document states that racially-biased policing occurs when "law enforcement inappropriately considers race or ethnicity in deciding with whom and how to intervene in an enforcement capacity."[3]

This definition is more flexible than the traditional definitions of racial profiling. As considered by PERF in its discussion of racially-biased policing, *sole* use of race and *reliance* upon race are set aside in favor of *appropriateness* of race as the test of whether bias does or does not exist. Emerging from this discussion is the possibility that a police officer may use race as an important – though not exclusive -- reason for stopping a citizen. The PERF document cites these instances as examples of conditions under

which race is an appropriate criterion for helping identify an individual to approach or question:

- A white college student observed making a late-night visit to an inner-city apartment building at which drug trafficking is known to occur.

- A Hispanic observed exchanging goods for cash in the vicinity of a school whose students have reported gun sales carried out by a Hispanic individual.

The document explicitly excludes the following case from the criterion of appropriateness:

- A poorly dressed African-American male seen walking through an upper-class, white neighborhood.

Initiating an encounter due, in part, to a citizen's race, is appropriate only when the total picture indicates that people of the specific race, at a specific location, and at a specific time, might be considered suspicious for a clearly identifiable act.

Generally, the PERF document indicates the appropriateness of race as a criterion for initiating an encounter with a citizen as a situation in which "trustworthy, locally relevant information links a person or persons to a particular unlawful (incident or incidents)."

This criterion is consistent with the theories of probable cause and reasonable suspicion appearing in the Fourth and Fourteenth Amendments to the United States Constitution and subsequent, legal interpretation of these amendments.

Under this rule, it would appear that a police officer may use race as a reason to stop a citizen if race is a feature of the totality of crime patterns in a locality. In the third instance cited by PERF, the poorly-dressed African-American male cannot be considered suspicious for an identifiable crime. If it were the case, though, that a rash of burglaries involving African-American suspects had recently occurred in the neighborhood where he was seen, then police might well be justified in stopping him.

Stopping a driver who fits a suspect description is the most obvious application of the "appropriateness" principle. But the principle implies that race may be used as a criterion in other situations as well, when, in combination with other factors, race suggests reason for suspicion. Suspicion may be justified, for example, regarding a driver whose race is that which predominates among perpetrators of a widely-observed crime, and who is observed in an area in which the crime frequently takes place and at a time of day or night when the crime typically occurs.

Application to Study Data

Findings from this or other studies that demonstrate an observed over-representation of minority drivers among those stopped does not necessarily reflect racial profiling or

racially-biased policing stemming from department policy or an individual officer's

motivation. An observed over-representation of this kind might reflect greater likelihood

among members of a particular race of being reported as committing violent or property

crime. The stopping of individuals of this race may reflect, then, "trustworthy, locally

relevant information" about crime incidence. This is not to say that it is justified of

police officers to stop people of a given race just because others of that race are reported

to commit crimes. Rather, it should be asked whether people of the race in question are,

more often than others, observed to be driving at a time and in a location in which crime

is often committed. Under such conditions, race may be one of several valid criteria

used by police officers in determining whether or not to stop a driver.

Observed over-representation of minorities among stopped drivers, then, cannot in itself

be interpreted as racial profiling if the representation of minorities correlates with

patterns of crime incidence. Rather, such a correlation would suggest that police officers

work in a manner consistent with "community policing" principles or in a "mission-

driven" or "consumer-oriented" fashion. Responsive police departments deploy officers

to areas whose citizens or representatives request resources to apprehend criminals.

High-crime areas are often minority areas, and the predominance of minorities among

victims of crime is well known. Over-representation of minorities among drivers

stopped, then, would be an undesired but inevitable consequence of appropriate police

activity.

Potential correspondence between minority over-representation among drivers who were stopped during the study period with local crime patterns, then, receives significant attention in analysis and interpretation of the data. Applying the "appropriateness" criterion, observed over-representation of a minority group should be considered an outcome of racially-biased policing only if that over-representation occurs:

- outside areas in which large numbers of crimes are shown to be perpetrated by that minority;

- during hours in which the crime or crimes in question are low in incidence; and,

- in a proportion significantly higher than local criminal activity is observed by members of the minority group.

Research Methods

Data Collection Procedures

This study was based primarily on machine-scanned forms distributed to police officers and completed soon after each vehicle stop. A copy of the form used is appended to this report (see Appendix I, *Research Instruments*). The data forms were scanned at the Police Department Headquarters and the resulting data sets copied onto floppy disks. These were given to Dr. Greenwald, who then added them to an aggregate data set. Within this data set were also new variables for analysis derived indirectly from items on

the form. "Derived variables" of this kind include, for example, degree of officer discretion associated with each stop.

The working data set also included data on individual police officers, such as race, age, and education. These data were provided to Dr. Greenwald as a file which contained the officer's badge number, allowing matches to be made of officer characteristics and characteristics of each vehicle stop.

As soon as complete data from the 2000 United States Census became available (July, 2001), demographic data from the enumeration were added to the files. These data made possible comparison of characteristics of individuals stopped in specific locations with surrounding population characteristics, such as age and race. In addition, geographical data were collected by the research team itself on racial distribution of drivers passing strategic points of interest in Sacramento. Data on victim and suspect characteristics, crime incidence, parolee residence, and calls for service were provided by the Police Department.

The USC team carried out an intensive procedure to confirm accuracy of data reported by officers making vehicle stops. Team members conducted a telephone survey of drivers to validate the accuracy of information reported by police officers on the machine-scanned forms. A high degree of compatibility was observed between information provided by the drivers and the police officers who had stopped them.

In a less formal but important procedure, Dr. Greenwald accompanied Sacramento police officers in their vehicles on several occasions. An initial objective of this procedure was to pretest the machine-scanned data form. Pretests were required to ensure that officers could use the forms under actual working conditions with sufficient ease. To assess the form, Dr. Greenwald observed the time required for its completion, asked officers about the clarity of individual questions, and inquired about the officers' interpretation of selected questions. The ride-alongs also provided an opportunity to help assess the ability of an officer to determine a driver's race prior to stopping his or her car. Community representatives often accompanied Dr. Greenwald on the ride-alongs, and were asked whether they could determine the races of persons in other cars under various lighting conditions. Please see page 39 for further discussion of an officers' ability to identify a driver's race prior to stopping his or her car. Dr. Greenwald also attended police roll-calls and talked informally with officers of all ranks to obtain a better understanding of the decision-making process regarding vehicle stops.

Data Analysis

Data analysis consisted of descriptive and bivariate statistical runs, which demonstrate the relationship between pairs of variables. Distributions on key variables, such as driver race, are displayed in this report. Cross-tabulations are also presented to indicate differences in characteristics of stops by race of driver. Correlation is used to assess alternative explanations of the percentages specific racial groups represent among drivers stopped in selected neighborhoods.

Numerical findings in this report are not usually accompanied by the familiar "statistical significance" criterion. In a data set of the size available here, statistical significance is often not a meaningful concept. In instances where large numbers of cases are compared (for example, percentages of African-American versus Hispanic drivers stopped within the entire city of Sacramento), even small differences are likely to be statistically significant (that is, numerically unlikely to have been discovered by chance). Such differences in magnitude may reflect only a marginal distinction between two groups.

In the study reported here, a "rule of thumb" is recommended for judging whether percentage differences are, in most cases, important or not. It is suggested that readers apply a "Five Percent Rule," assuming that a difference of five percent or greater should be considered as of potential, practical importance. In part, this recommendation is made because of possible errors in the data analyzed. Police officers, for example, may err in identifying driver race. The census is known to undercount the United States population by about 1.2 percent; since undercounting is most likely among minorities, it must be assumed minorities represent a larger percentage of the United States (and Sacramento) population than is indicated in reported figures. Because the sum of all such error seems unlikely to exceed five percent, differences greater than five percentage points should be taken as substantive.

In addition to statistical presentations, this report contains a series of density maps produced through the Sacramento Police Department's Geographic Information System (GIS). These maps provide visual representations of patterns indicated by the statistical

data. "Kernel density estimation" is used to produce a continuous "weather map" showing geographic variation in the density or intensity of events such as vehicle stops, parolee or probationer residence, and crimes.

Study Limitations

The most important limitation of this study concerns the "baseline" or "benchmark" against which patterns of vehicle stops should be compared.   This study, like most others of its kind, compares the racial distribution of police stops in a given locale with demographic characteristics of the residents of that locale. For each observation, it is unknown whether the driver resided in the area where the stop was made or not. Likewise, it is not known whether drivers in different racial groups have differences in their likelihood of committing traffic violations.

The form in which data have been made available to the public by the United States Census requires estimation of demographic characteristics of neighborhood-level geographic areas. A small amount of error seems likely to result from the estimation procedure.   It should also be acknowledged that some areas of Sacramento have probably changed significantly even in the short time since the 2000 census enumeration. The percentage of automobile stops for which officers actually filled out a form is not now known, although a preliminary examination indicated that the percentage was very high.

Finally, observations were incomplete in a number of cases. Items on the data collection forms were occasionally omitted, and individual police officer data was not always available due to a procedure designed to assess the effect of officer self-identification on vehicle stops (see Table 18 and accompanying text). For this reason, tables presented below are based on non-uniform numbers of cases.

Principal Findings

Data on which this report is based were collected between July 1, 2000, and June 30, 2001. A total of 36,854 non-duplicated cases were provided via completed forms to the research team in time for the analysis reported here. Findings are presented Figures 1-6 and Maps 1-4, below, as well as in Tables 1-25, in Appendix II, *Statistical Tables*.

Who Is Stopped?

Overall Findings. Figures 1 and 2 provide a basic picture of the racial distribution of vehicle stops by Sacramento police during the study period. The first figure presents the percentages represented by each race within the population of legal driving age (over age 15), according to the 2000 United States Census. The second figure presents the percentages represented by each race among all vehicle stops.

Figure 1. Residents 15 Years and Older

Category	Percent
OTHER	0.3%
NATAM	0.8%
WHITE	47.4%
HISP	19.9%
ASPAC	17.3%
AFAM	14.3%

Figure 2. Drivers Stopped in Sacramento

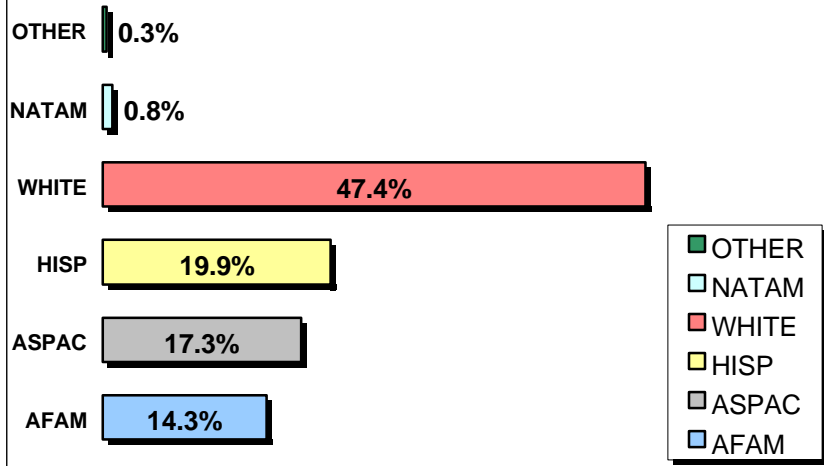| Category	Percent
OTHER	3.4%
NATAM	0.2%
WHITE	40.9%
HISP	18.9%
ASPAC	9.9%
AFAM	26.8%
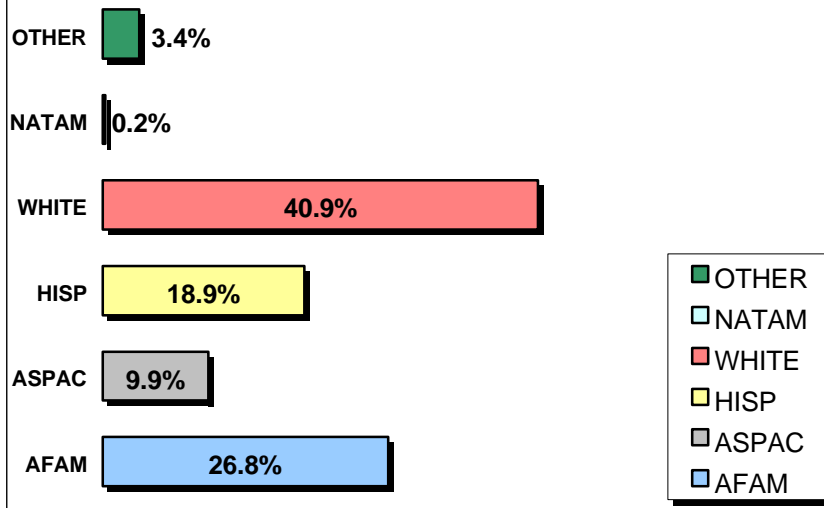
The first set of tables in Appendix II presents systematic comparisons of drivers stopped with the driving-age population.

Table 1 compares numbers of drivers stopped within each major racial group with the population of Sacramento. "Percentage of Each Race," presented for comparison with drivers stopped, is based on characteristics of Sacramento residents 15 years of age and older, the legal driving age.

Table 1 indicates that Hispanic drivers are stopped about as often as the proportion of Hispanics 15 years of age and older in Sacramento's population would suggest. By these criteria, white, non-Latinos and Asian/Pacific Islanders are underrepresented. Too small a number of Native Americans/Alaska Natives were found in the study or by the United States Census to allow analysis here.

For reader interest, Table 2 presents the percentage distribution of race among Sacramento police officers during the early part of the study. The police officer data file was updated at the end of the study for data analysis purposes.

Reasons for Stops. The research team paid special attention to reasons given by police officers for the stops they made, characteristics of the individuals stopped other than their race, and the time at which stops were conducted. It was believed that these factors would provide clues to why stops were made.

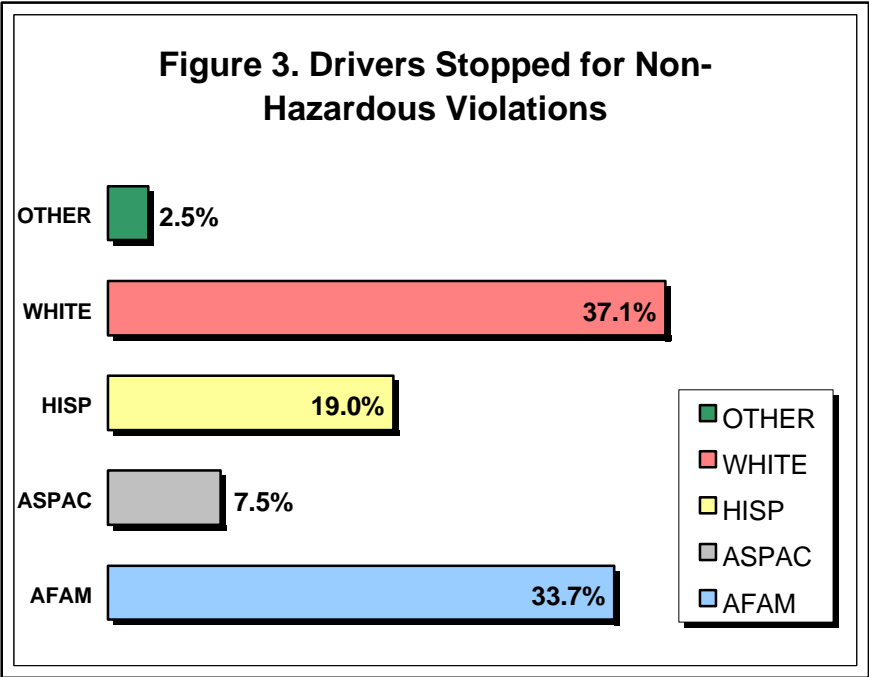Table 3 includes only drivers stopped for "non-hazardous" reasons, namely for equipment and registration violations. Police officers have more discretion in stopping drivers for non-hazardous code violations, such as expired registration, broken headlights or taillights, and cracked windshields. Unlike failing to stop for a red light or stop sign, non-hazardous code violations pose no immediate danger to other people.

Police officers throughout the United States often stop people for non-hazardous reasons for investigative purposes, suspecting, for example, that a driver had come from a drug-dispensing venue, burglary scene, etc. Occasionally referring to these actions as "investigative stops," officers hope to apprehend perpetrators or collect evidence through them. Officers deployed to neighborhoods and blocks where violations have occurred pay close attention to cars whose drivers they believe may have been involved in crimes of local concern.

The table indicates that African-American drivers are more strongly over-represented among those stopped than they are in Table 1. Representation of Latino drivers is unchanged, while representation of white and Asian/Pacific Islander drivers declines.

Figure 3 presents the racial distribution of stops made for non-hazardous violations in a manner easily comparable with the census data in Figure 1 and the racial percentages of all vehicle stops made presented in Figure 2.

Figure 3. Drivers Stopped for Non-Hazardous Violations

Group	Percentage
OTHER	2.5%
WHITE	37.1%
HISP	19.0%
ASPAC	7.5%
AFAM	33.7%

Legend: OTHER, WHITE, HISP, ASPAC, AFAM

Age and Time of Day. Table 4 includes only drivers between ages 15 and 34, and Sacramento residents in this same age range. It was believed that drivers in this age range would be at special risk of being stopped. Because they are less experienced and less cautious, younger drivers appear likely to commit more violations than older drivers. It is well-known that a high percentage of people who commit crimes are between the ages of 15 and 34, predisposing this group to investigative stops.[4]   Within this age group, only African-Americans are over-represented in comparison with the numbers in the age 15 through 34 population.

Many additional analyses were conducted to assess whether particular groups were stopped more often in specific neighborhoods and at different times of day. For the city

as a whole, it was found that African-American drivers were most likely to be stopped between the hours of 9 PM and 5 AM, while white drivers were most likely to be stopped between 5 AM and 9 PM. A white driver appeared most likely to be stopped if he or she was over 35 years old and was driving between 5 AM and 9 PM; white drivers accounted for about 50 percent of the stops made of drivers over 35 years old in that time frame. African American drivers appeared at special risk of being stopped for non-hazardous reasons between 9 PM and 5 AM; nearly 40 percent of stops for non-hazardous reasons were made of African-American drivers during that time period.

Community Context

The information presented above must be understood against the background of the Sacramento Police Department's mission: responsiveness to community needs. Planning and deployment of resources is intended to take place in a community-driven manner. Specific language in the Department's mission statement reads: "…to work in partnership with the Community to protect life and property; solve neighborhood problems, and enhance the quality of life in our city." Directly and through elected representatives, the community transmits its desire for crime to be controlled, often with emphasis on neighborhoods of special concern.

 Figures 1 through 3, and Tables 1, 3, and 4, then, must be viewed in the context of characteristics of the surrounding neighborhoods and the city as a whole. It is crucial, for example, to assess racial and residence patterns which may explain over-representation of

African-Americans among drivers in Sacramento who are stopped, particularly for non-hazardous reasons.

Based on police department records, Figures 4 through 6 present racial breakdowns of victims of crime, suspects of crime, and parolees residing in Sacramento. Table 5 presents this comparison numerically. Figures 4 through 6, and Table 5, enable the reader to compare racial breakdowns of parolees, suspects, and victims with percentages of drivers stopped for all and for non-hazardous violations. Note that the Native American/Alaska Native and "Other" category do not appear in Table 5, because the Sacramento Police Department did not provide files including these categories. It is apparent that percentages of suspects and parolees among African Americans exceeds their representation in the population, and by significantly more than the proportion of drivers stopped for any reason.

Figure 4. Victims of Crime by Race

OTHER/UNK — 3.4%
WHITE — 45.9%
HISP — 18.1%
ASPAC — 8.4%
AFAM — 24.3%

Legend: OTHER/UNK, WHITE, HISP, ASPAC, AFAM

Figure 5. Suspects of Crime by Race

OTHER/UNK 2.7%
WHITE 31.7%
HISP 19.0%
ASPAC 4.9%
AFAM 41.7%

Legend:
- OTHER/UNK
- WHITE
- HISP
- ASPAC
- AFAM

Figure 6. Parolees by Race in Sacramento

OTHER 3.5%
WHITE 32.1%
HISP 18.4%
ASPAC 0.4%
AFAM 45.6%

Legend:
- OTHER
- WHITE
- HISP
- ASPAC
- AFAM
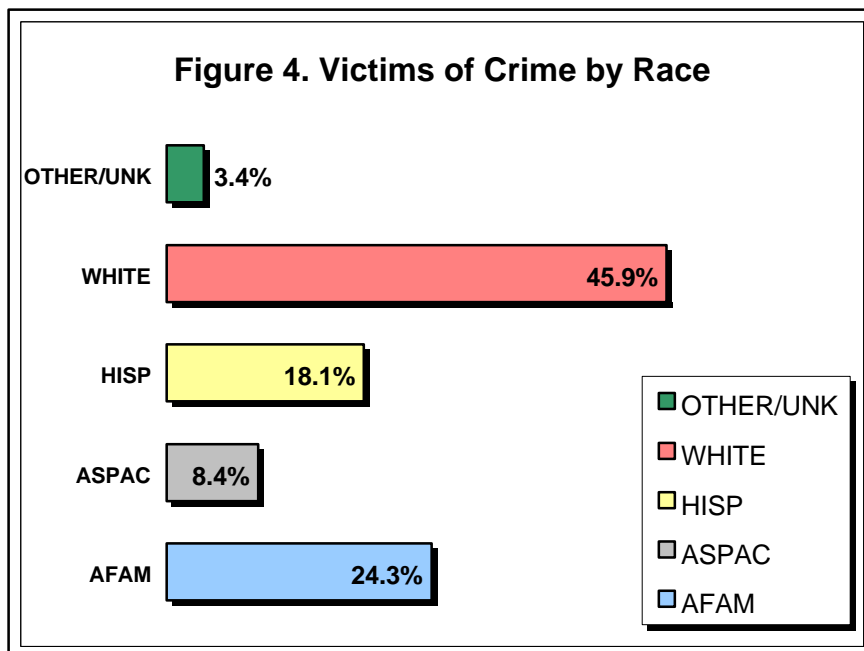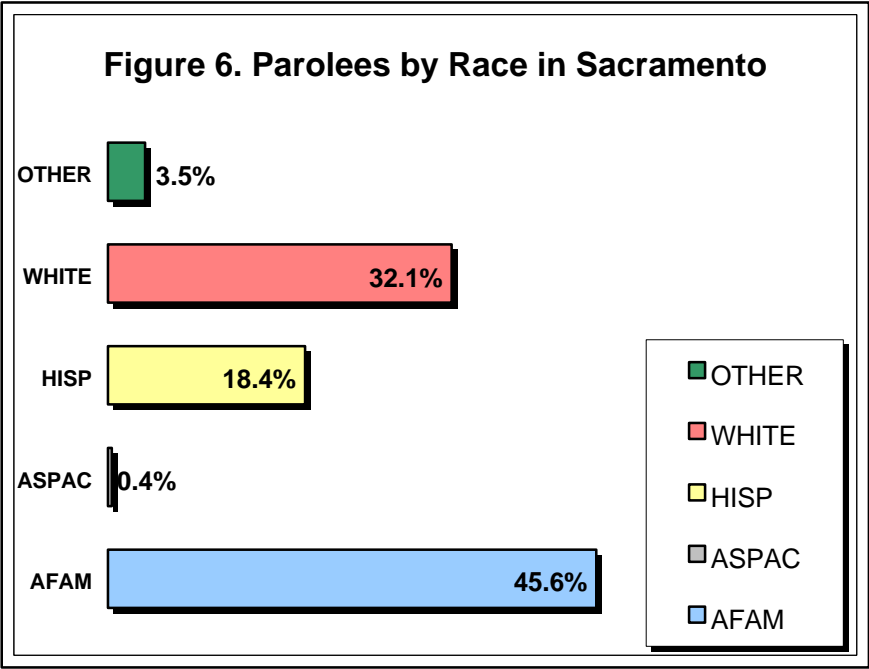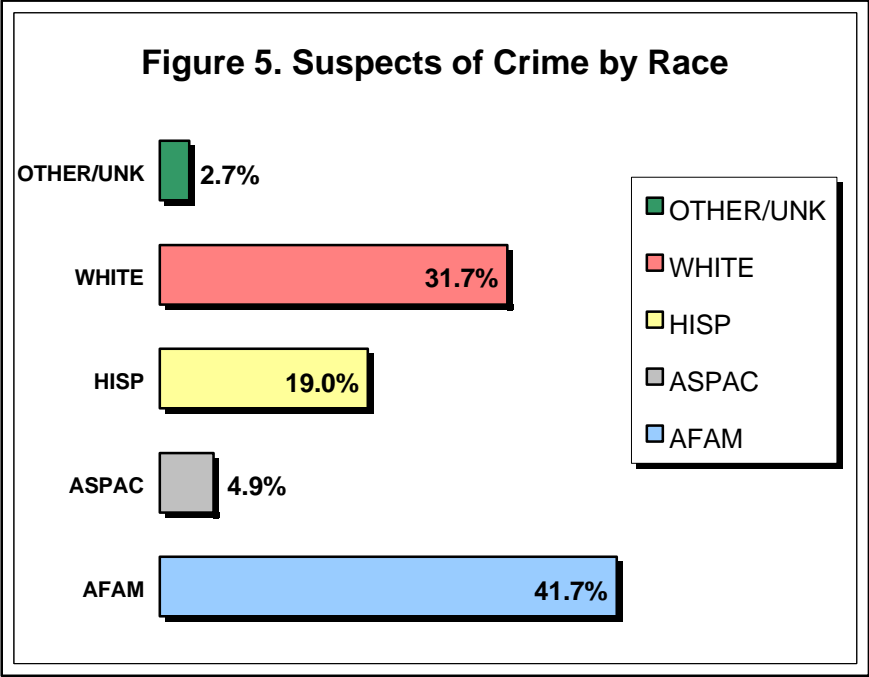
Tables 6 and 7 focus on 18 Sacramento neighborhoods identified by police department officials as particularly important for crime control concerns. Table 6 indicates (a) percentages of each neighborhood's residents who are African-American and age 15 and over, (b) percentage of suspects of crimes committed in these neighborhoods who are African-American, and (c) percentages of drivers stopped in these neighborhoods who are African American. Table 7 presents these percentages for Hispanics. In the vast majority of these neighborhoods, percentages of African-Americans and Hispanics exceed their representation in the city as a whole.

In Table 6, it can be seen that in all but one neighborhood the percentage of African-Americans who were stopped exceeds the percentage of African Americans in the neighborhood's population. The excess of stops of African-Americans in some neighborhoods exceeds their residential representation by over 200 percent. The percentages of crime suspects in these neighborhoods who are African-American exceeds the percentage both of residents who are African-American and drivers stopped who are African-American. In the same neighborhoods (see Table 7), Hispanics are stopped less often than their representation in the population would suggest. The percentages of crime suspects who are Hispanic is sometimes higher and sometimes lower than the percentage of people in a given neighborhood who are Hispanic.

The general picture presented by the figures and tables referenced above is consistent with the principle of community-driven policing. Table 8 presents further evidence in this direction. This table presents coefficients of correlation, first, between percentages

of the population in each neighborhood who are members of selected racial groups, and the percentages of vehicle stops involving members of each race. Second, the table presents correlations between percentages of crime suspects represented by each race and percentages of vehicle stops involving each race. It is clear that both the racial distribution of the population of each neighborhood, and the racial distribution among crime suspects in each neighborhood, are strongly related to the racial percentages of police stops made in each community. Most notably, the percentages of crime suspects represented by each race is the stronger predictor of the distribution of vehicle stops by race.

The patterns of vehicle stops and community context factors are illustrated in a series of density maps. These are displayed below (see Maps 1-4). Within each set of maps, the display on the left-hand side depicts the density of police vehicle stops in specific parts of the city (darker color indicates more frequent stops). On the right-hand side are displayed frequency by locale of citizen calls for service (Map 1), reported crimes (Map 2), residential location of individuals on probation (Map 3), and residential location of individuals on parole (Map 4).   Inspection of these maps indicates a consistent correspondence of vehicle stops made by police with places in which crime and people with criminal histories are concentrated.   In general, density maps such as Maps 1 through 4 illustrate the greatest concentration of an activity being measured. Non-colored areas do not indicate *absence* of this activity.

MAP 1

ALL VEHICLE STOPS and CITIZENS CALLS FOR SERVICE

**DENSITY MAP OF
VEHICLE STOPS**

The darker the area the higher
concentration of Vehicle Stops
in that area.

**DENSITY MAP OF
CITIZENS CALLS FOR SERVICE**

The darker the area the higher
concentration of Citizens Calls
for Service in that area.
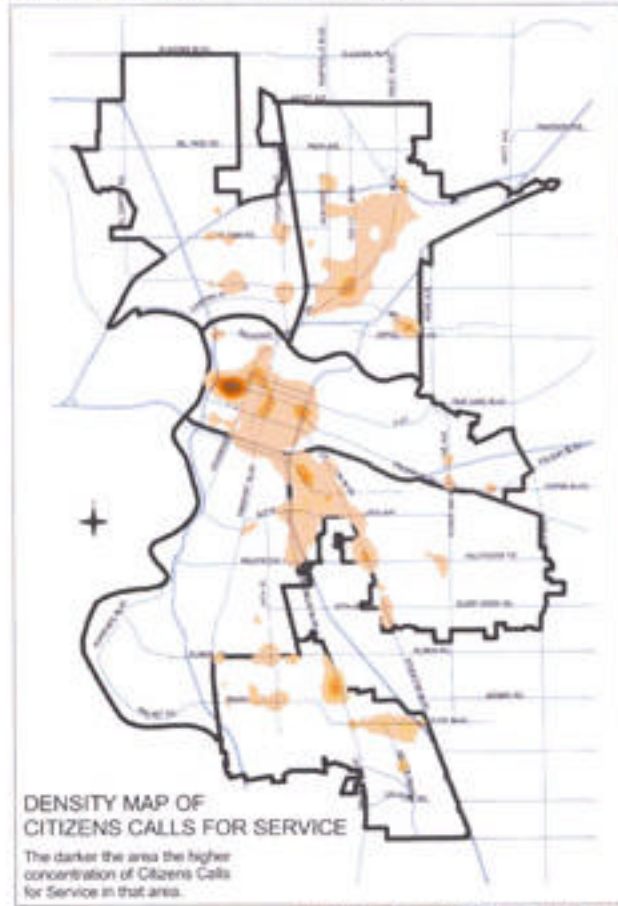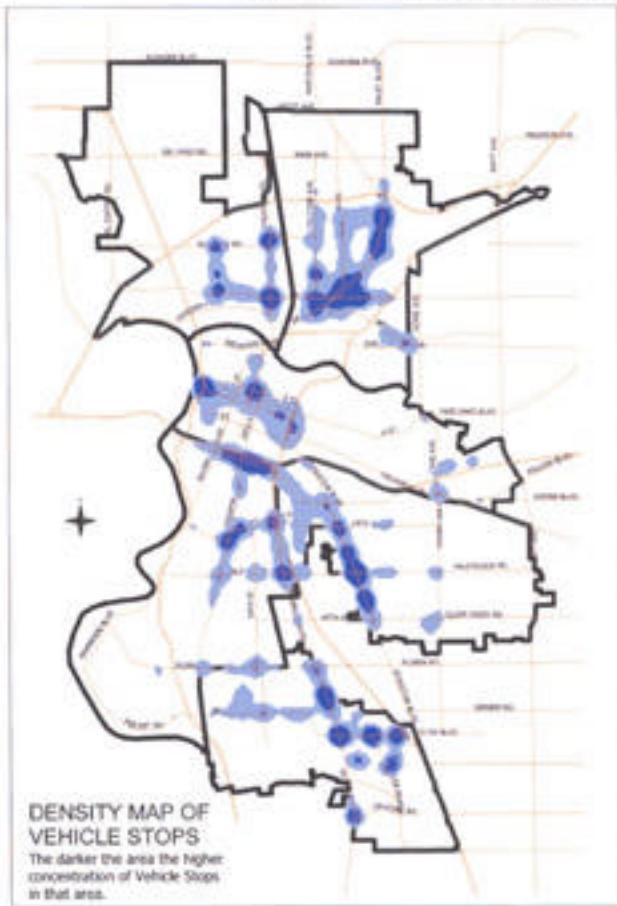
Produced by the Crime Analysis Unit - Sgt. Dorothy Pearson 10/19/01

MAP 2
ALL VEHICLE STOPS and REPORTED CRIMES

DENSITY MAP OF
VEHICLE STOPS
The darker the area the higher
concentration of Vehicle Stops
in that area.

DENSITY MAP OF
REPORTED CRIMES
The darker the area the higher
concentration of Reported Crimes
in that area.

MAP 3

ALL VEHICLE STOPS and INDIVIDUALS ON PROBATION

DENSITY MAP OF
VEHICLE STOPS
The darker the area the higher
concentration of Vehicle Stops
in that area.

DENSITY MAP OF
INDIVIDUALS ON PROBATION
The darker the area the higher
concentration of individuals on
Probation in that area.

Produced by the Crime Analysis Unit - Sgt. Dorothy Pearson 10/19/01

MAP 4
ALL VEHICLE STOPS vs INDIVIDUALS ON PAROLE

DENSITY MAP OF
VEHICLE STOPS
The darker the area the higher
concentration of Vehicle Stops
in that area.

DENSITY MAP OF
INDIVIDUALS ON PAROLE
The darker the area the higher
concentration of individuals on
Parole in that area.
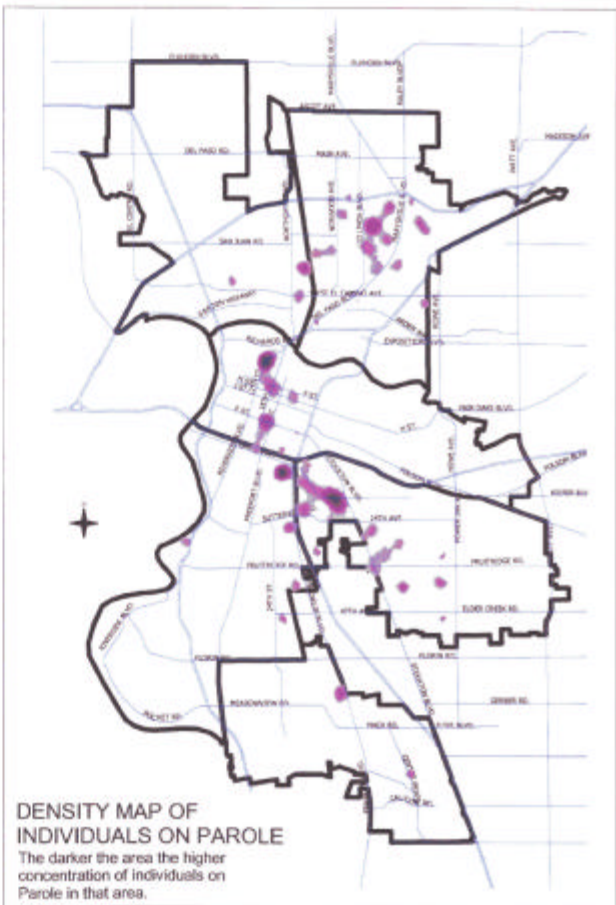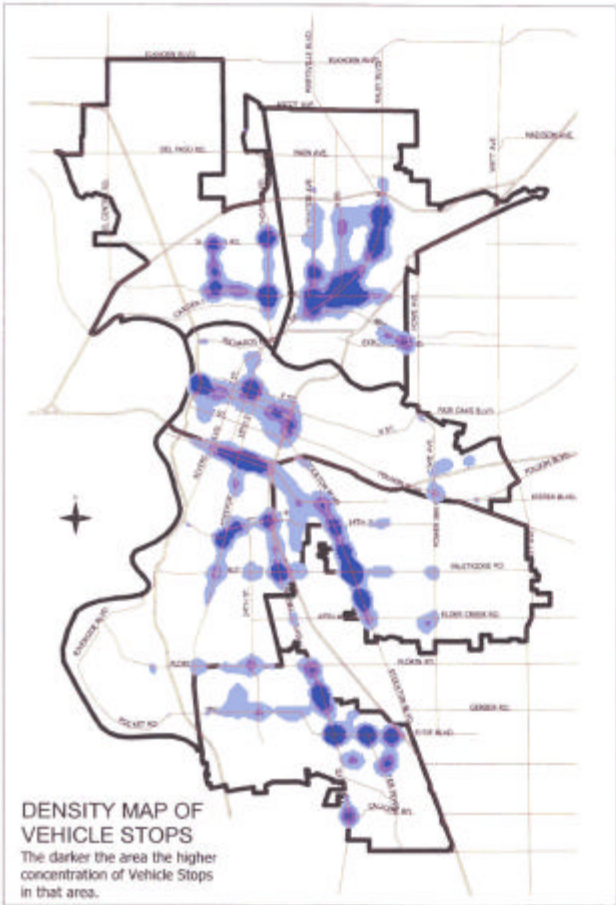
Produced by the Crime Analysis Unit - Sgt. Dorothy Pearson 10/19/01

Intrusiveness of Stops

The experience of being stopped while driving by a police officer is a major part of the concern over racial profiling. But characteristics of the encounter between the driver and the police officer are also of importance. The citizen's recollection of being stopped, and assessment of whether the stop may have been inappropriate, is likely to be influenced by perceived intrusiveness of the encounter. Tables 9 through 13 address three possible events which can occur in a stop and increase its intrusiveness as perceived by the driver: (a) being asked to exit the car; (b) being searched; and, (c) being subject to long detention.

It is apparent that both African-American and Hispanic drivers are subject to more intrusive stops than white drivers. Tables 9 through 11 indicate that African-American and Hispanic drivers are asked to exit their cars, searched, and detained for 30 minutes or longer about twice as often as white drivers. Table 12 indicates that duration of a stop is strongly related to whether a search or seizure of property was carried out (including tow of the vehicle). In stops not involving search, seizure, or tow, drivers of any race (whites, African-Americans, or Hispanics) are seldom subject to stops 30 minutes or longer. Racial percentages of drivers subject to stops more than 15 minutes long are about equal.

It is noteworthy (see Table 13), that among drivers searched, African-Americans and Hispanics are no more or less likely to be discovered with contraband than white drivers.

Officer Characteristics

Several characteristics of the officer involved in the vehicle stop were examined in an attempt to detect patterns of excessive stopping of minorities. Of particular interest was the race of the officer him or herself. Tables 14 through 16 indicate the racial distributions of stops made by white, African American, and Hispanic officers. Tables 14 and 15 indicate that white and non-white officers stop African-American drivers in equal proportions. African-American and non-African American officers stop African-American drivers in about equal proportions. In Table 16, it appears that Hispanic officers stop African-Americans less often than do non-Hispanic officers, but Hispanic and non-Hispanic officers stop about the same proportion of Hispanic drivers.

Table 17 was produced to assess the possibility that a small number of officers might intentionally seek out reasons to stop minority drivers, and thus account for a significant part of the over-representation of minority drivers observed among those stopped in Sacramento. The table presents the racial distribution of police stops after the records of 26 officers have been omitted from the analysis.

Of the stops made by each of these officers, at least 50 percent were of African-Americans.   The table indicates a racial distribution very similar to that displayed in Table 1, suggesting that the behavior of a few selected officers had not skewed the overall racial pattern of vehicle stops.

Tables 18 and 19 are intended to assess possible influence of research on and monitoring of police work on the percentage of drivers of each race stopped by individual officers. In the first week of the study reported here, officers were not asked to enter their badge numbers on the reporting forms. After this trial period, all police officers were required to do so. No difference is detected in racial distribution of stops made after this individual identifier was added. About one-third of all stops reported in this study were made by officers in cars equipped with cameras. Officers in cars with cameras reported stopping a higher percentage of African-American drivers than officers in cars without cameras.

The division or other organizational unit in which an officer worked appeared to affect the racial distribution of stops made by that officer. For example, officers in "Patrol South" were most likely to stop African Americans, while those in traffic operations were least likely to stop African Americans as a percentage of the vehicle stops they made. It seems likely that differences in percentages of African-Americans stopped by officers in different organizational units reflect the areas in which the officers are deployed and the specialized functions they perform.

Accuracy of Data

As is true in all studies of this kind, questions should be raised regarding (a) the baseline or benchmark against which racial breakdowns of police vehicle stops should be

compared, and (b) the accuracy of reports by police officers of the characteristics of the officer-driver encounter and the driver him or herself.

The study reported here carried out several procedures designed to assess the accuracy of data used. Results of these procedures are reported in Tables 20-25.

Table 20 compares the characteristics of drivers who were stopped once during the study period with drivers who were stopped two or more times. It was suspected that drivers who had been stopped on multiple occasions might account for the observed over-representation of African-American drivers, calling use of the city's population 15 years of age and older as a baseline into question. African-American drivers are in fact more strongly represented among individuals stopped two or more times. But the racial distribution observed in Table 20 among drivers stopped only once is highly similar to the distribution visible in Table 1, which presents the basic comparison of all drivers stopped with the city's population 15 years old and above.

An important factor suspected of compromising the validity of Sacramento's over age 15 population as a baseline was the fact that, at any given time, a substantial percentage of individuals driving (and stopped by police) are not residents of the city. Based on a sample of 1150 stops for which the driver's place of residence was known, Table 21 compares racial distributions of Sacramento residents and non-residents. According to the table, about one-third of drivers in the sample were not residents of Sacramento. Fewer African-Americans and Hispanics were present among the non-residents. But

among the drivers residing in Sacramento stopped by police, percentages of African-Americans, Hispanics, and other races approximated those reported in Table 1.

Tables 22 and 23 represent findings of observations made by the research team of drivers passing selected intersections in Sacramento. Table 22 confirms an observation made during ride-alongs that officers and passengers find it difficult or impossible to determine the race of a driver in a nearby car in the early morning, late afternoon, and most definitely, during hours of darkness. At dusk (between 5 and 5:30 PM on a mid-December observation day), for example, the research team's observer was able to identify the races of only 5.9 percent of the drivers passing an Old Sacramento location (2nd and J Street). Soon after beginning his work, the observer found that he was unable to distinguish driver races after dark. For this reason, he was not asked to make night-time observations after his first few observation sessions.

Table 23 specifies the races of drivers observed by the study team and compares the percentages with the racial distribution in the surrounding census tracts. Table 24 reports racial distribution of drivers stopped at three Police Department checkpoints during the study period, and a comparison of the breakdown with the local census tract. No definite pattern of over- or under-representation of African-American or Hispanic drivers versus residents is visible in these tables. Disparities noticeable in Table 24 suggest that comparison of the characteristics of drivers stopped within a given neighborhood, and characteristics of residents of that neighborhood according to census data, should be made with extreme caution.

Table 25 reports results of a study to assess the reliability of data provided by police officers on the machine-readable study forms. Telephone interviews were conducted with 24 individuals who had been stopped by police officers one month to six weeks earlier. These individuals were asked questions which paralleled the items on the police officer form. Citizen's recall is consistent with the data submitted by the officer in most cases. A surprising degree of disagreement in driver's race, though, is reported in Table 25. This observation should underscore the recommendation made above that only major interracial differences in percentages of drivers stopped should be considered substantive. Relatively weak agreement in matters such as duration and time of the stop should caution readers against making too much of minor differences among races in these areas.

Findings and Discussion

Study Conclusions

Based on the data presented here, the following conclusions are supported:

- Among drivers in Sacramento, African-Americans are stopped more often (in proportion to their representation in the population of the city of Sacramento) than white drivers, with the greatest over-representation of African-Americans occurring among drivers stopped between 9 PM and 5 AM.

- Hispanic drivers are stopped no more often than whites, but when stopped are asked to exit their cars, subjected to searches, and detained for long periods of time more often than whites.

- Asian/Pacific Islander drivers are stopped and detained less often than whites.

- High rates of African-Americans among parolees and probationers living in Sacramento, and reported as suspects in crimes, seem likely reasons why African-American drivers are stopped more often than they are represented in the general population.

- Although the percentage of African-American drivers searched is higher than the percentage of white drivers, contraband is found equally often in cars driven by people of each race, suggesting that police officers assess African-Americans and whites as holders of contraband with equal accuracy.

- The presence of a small number of police officers whose vehicle stops include high percentages of African-Americans does not explain the over-representation of African-American drivers detected in this study.

Discussion

Data collected and analyzed in this study clearly indicate an over-representation of African-American drivers among those stopped by Sacramento police officers. This over-representation seems unlikely to reflect "profiling" as defined above. There is no evidence that police officers are inappropriately searching African-American drivers. White officers stop minority drivers no more often than minority officers stop minority drivers. Surveillance of officers via cameras or research forms does not decrease the over-representation of minority stops, as would seem likely if police officers of any race were stopping drivers for reasons other than the practice of good law enforcement as they understood it.

In conclusion, it is important to underscore the limitations in the research presented here. As indicated above, errors in determination of race by police officers and census-takers, and unavailability of a completely valid baseline against which to compare drivers who are stopped, reduce the accuracy of findings.

In addition, many potentially valuable analyses were not completed in the work reported here. Racial patterns in vehicle stops by police are very complex. Differences in percentages of individuals of each race stopped by police officers vary according to time of day or night, neighborhood, and perhaps season. A driver's age clearly affects his or her probability of being stopped. But this, too, differs by time and place. Rates of specific crimes may well prove better predictors of patterns of stops across

neighborhoods than the variable representing suspects of all crimes used in the tables above.   A more complete grasp of the role played by different police department units may help explain racial differences in patterns of vehicle stops at different times and in different places. Multivariate analyses – procedures which account for multiple background factors in order to specify the independent effect of one variable -- would doubtlessly advance understanding.

The authors, then, recommend continuing research on racial patterns in vehicle stops in Sacramento. Continuing monitoring and analysis is particularly important because patterns of police activity and the community itself are likely to change over time. More clearly valid results should be obtained as police officers become accustomed to data collection on vehicle stops as a routine procedure.

As a recommendation, discussion and training should focus on improving the ability of police officers to distinguish between drivers likely to be associated with criminal behavior from those who are not. It appears that many African-Americans are stopped by officers investigating potential criminal activity. These officers tend to use equipment and registration irregularities as a reasons for making investigative stops. Enabling police officers to better distinguish drivers currently or recently involved in criminal acts may reduce the percentage of African-Americans stopped.

Steps in this direction may include helping officers achieve greater accuracy in interpreting the variety of information pertinent to their decision-making process. This

information may include familiarity with criminal activity in specific neighborhoods, knowledge of human behavior, complaints from the community, and levels of criminal victimization.   In addition, officers must find a balance between officer safety and courteous, professional treatment of the drivers they stop.   They must recognize that many citizens, particularly minority group members, experience high levels of anxiety and humiliation as a result of encounters with police.

Appendix I

Research Instruments

Vehicle Stop Form

Sacramento Police Department
VEHICLE STOP DATA FORM

CORRECT MARK:
○ ○ ● ○

1. APPROXIMATE TIME OF STOP   ○ a.m. ○ p.m.
   HOUR: ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫
   MINUTE: ⑤ ⑩ ⑮ ⑳ 25 30 35 40 45 50 55 00

2. DATE OF STOP   YEAR: ○ 2000   ○ 2001
   MONTH: ○J ○F ○M ○A ○M ○J ○J ○A ○S ○O ○N ○D
   DAY: ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮
   ⑯ ⑰ ⑱ ⑲ 20 21 22 23 24 25 26 27 28
   29 30 31

3. *REASON FOR STOP* (Mark all that apply)
   ○ Hazardous Violation of the Vehicle Code
   ○ Violation of the Penal Code
   ○ Violation of a city ordinance
   ○ Call for service - suspect description/vehicle description
   ○ Pre-existing knowledge/information
   ○ Equipment/registration violation
   ○ Special detail (POP Project, DUI Checkpoint, Crime
     Pattern /Series, Narcotic/Prostitution Suppression Detail)
   ○ Other _____

4. *RACE/GENDER OF DRIVER*   ○ Male ○ Female
   ○ Afr.-Amer. ○ Hispanic   ○ White ○ As./Pac.Isl.
   ○ Nat. American   ○ Other/Not Apparent

5. DRIVER YEAR OF BIRTH: ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
   ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

6. DRIVER'S LIC./ID: _____ STATE _____

7. WAS DRIVER ASKED TO EXIT CAR?   ○ Yes ○ No

8. NUMBER OF PASSENGERS   ⓪ ① ② ③ ④+

9. WAS A SEARCH DONE?
   ○ Driver ○ Passenger   ○ Vehicle   ○ No

10. SEARCH AUTHORITY: ○ Consent ○ Terry Cursory
    ○ Incident to Arrest   ○ Parole/Probation
    ○ Tow Inventory

11. *IF A SEARCH WAS DONE WHAT WAS DISCOVERED OR
    SEIZED?* (Mark all that apply) ○ Weapons ○ Drugs
    ○ Cash ○ Vehicle ○ Alcohol ○ Other Property
    ○ Nothing

12. RESULT OF STOP # _____
    ○ Citation ○ Arrest ○ Report ○ Advised   ○ FC

13. STOP LOCATION: _____
    DISTRICT: ① ② ③ ④ ⑤ ⑥
    ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

14. VEHICLE LIC. PLATE #: _____ STATE ____

15. DURATION OF STOP IN TOTAL MINUTES
    ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪
    ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ 9+

16. OFFICER BADGE #   ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
    ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
    ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
    ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

    SECONDARY OFF. BADGE # _____

17. VEHICLE EQUIPPED WITH CAMERA   ○ Yes ○ No

SCANTRON CUSTOM FORM NO. F-14521-SPD-L
SCANTRON CORPORATION 2000
ALL RIGHTS RESERVED.   PC2 3100-222-5 4 3 2

DO NOT MARK IN THIS AREA

0109049

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Telephone Validation Study Form

Introduction: Hello Mr./Ms. _____. I am calling as part of a study for the Sacramento Police Department on traffic stops by police officers in our city. Records indicate that you were stopped by an officer on _____, 2001.

Serial No. (SERIAL: __ __ __ __ __ __ __)

1. At about what time were you stopped? (RTIME: Code as 24-hr. clock time.)

2. For what reason did the office stop you?   (Note: Probe if necessary.) _____

    _____ (RREASON _____)

3. For approximately how long were you stopped? (RDURAT: Code as number of minutes.)

4. Were there any passengers in the car, in addition to yourself? (RPASS: Yes = 1; No = 0)

5. (If YES to Item 4) How many passengers did you have with you? (RNPASS)

6. Did the officer ask you to exit the car? (REXIT: Yes = 1; No = 0)

7. Was a search conducted, of the driver, any of the passengers, or the car?
     (RSEARCH: Yes = 1; No = 0)

8. Did you receive a citation (RCIT: Yes = 1; No = 0)?

9. (Ask if cannot be otherwise discerned) Are you male or female? (RGENDER: M=1, F=2)

10. Last, how would you describe yourself? Are you (RRACE):

    African-American (code AFAM)
    Hispanic (code HISP)
    White (code WHITE)
    Asian/Pacific Islander (code ASPAC)
    Native Amrican (code NATAM)
    Other/NA/DK (code OTHER)

Thank you for your time!

Note: Questions should be referred to Lt. Cara Westin, 916-264-7327.

Appendix II

Statistical Tables

Table 1. Racial Distribution of Sacramento Residents Age 15 and Over, and Drivers Stopped by Police in Sacramento, California, 1 July 2000 – 30 June 2001

	Percentage of Each Race	Percentage of Drivers Stopped
Hispanic/Latino	19.9	18.9
White, non-Latino	47.4	40.9
African-American, non-Latino	14.3	26.8
Native American/Alaska Native	.8	.2
Asian/Pacific Islander	17.3	9.9
Other	.3	3.4
Total Individuals	301,488	36,854

Note: Racial distribution in this table is based on 2000 US Census, and includes only individuals age 15 years and over, who identified themselves as belonging to one racial group only. In this table, people who identified themselves as Hispanic/Latino are represented only as Hispanic/Latino and not members of other races in which they may have classified themselves. Census total for Asians includes Hawaiian and Pacific Islander. The table omits 4.4 percent of Sacramento residents who classified themselves as members of multiple races.

Table 2. City of Sacramento Police Officers, September, 2000

Hispanic/Latino	11.5%
White, non-Latino	71.0
African-American, non-Latino	6.2
Native American/Alaska Native	.6
Asian/Pacific Islander	8.7
Filipino	1.9
Total Officers	676

Table 3. Racial Distribution of Sacramento Residents Age 15 and Over, and Drivers Stopped by Police for Non-Hazardous Reasons in Sacramento, California, 1 July 2000 – 30 June 2001

	Percentage of Each Race	Percentage of Drivers Stopped
Hispanic/Latino	19.9	19.0
White, non-Latino	47.4	37.1
African-American, non-Latino	14.3	33.7
Native American/Alaska Native	.8	.2
Asian/Pacific Islander	17.3	7.5
Other	.3	2.5
Total Individuals	301,488	12,561

Table 4. Racial Distribution of Sacramento Residents Ages 15 - 34, and Drivers Age 15 - 34 Stopped by Police in Sacramento, California, 1 July 2000 – 30 June 2001

	Percentage of Each Race	Percentage of Drivers Stopped
Hispanic/Latino	27.8	22.1
White, non-Latino	39.1	36.0
African-American, non-Latino	15.6	27.2
Native American/Alaska Native	.9	.2
Asian/Pacific Islander	16.0	11.0
Other	.6	3.6
Total Individuals	114,689	21,459

Table 5. Racial Distribution of Victim and Suspect Reports, Parolees, and Drivers Stopped by Police in Sacramento, California, 1 July 2000 – 30 June 2001

	Percentage Reported Victims	Percentage Reported Suspects	Percentage Parolees	Percentage of Drivers Stopped, All Violations	Percentage Drivers Stopped, Non-hazardous Violations
Hispanic/Latino	18.1	19.0	18.4	18.9	19.0
White, non-Latino	45.9	31.7	32.1	40.9	37.1
African-American, non-Latino	24.3	41.7	45.6	26.8	33.7
Asian/Pacific Islander	8.4	4.9	0.0	9.9	7.5
Other	3.4	2.7	3.5	3.6	2.7
Total Individuals	31,519	45,392	2,013	36,854	12,561

Note: Percentage reported victims, percentage reported suspects, and percentage parolees are obtained from the Sacramento Police Department. For percentage of drivers stopped for all violations and percentage of drivers stopped for non-hazardous violations, Native American/Alaska Native has been consolidated into the "Other" category. This was necessary to make percentages in all columns comparable, since a Native American/Alaska Native category was unavailable in the Sacramento Police Department data for victims, suspects, and parolees.

Table 6. Percentage African-American Among Persons Age 15 and Over and Drivers Stopped by Police in Specific Neighborhoods in Sacramento, California, 1 July 2000 – 30 June 2001

Neighborhood	Percentage Residents Who Are African-American	Percentage Suspects Who Are African-American	Percentage Drivers Stopped Who Are African-American
1	15.0	47.6	38.2
2	35.1	60.9	39.2
3	16.5	61.9	29.7
4	7.2	46.0	22.4
5	21.3	63.8	41.9
6	27.1	59.3	23.2
7	27.6	61.8	49.4
8	11.8	29.3	20.9
9	3.6	16.0	20.3
10	27.2	24.5	25.9
11	6.9	38.2	14.8
12	8.6	50.5	27.7
13	10.6	33.9	30.3
14	13.3	43.1	29.7
15	10.6	35.1	23.0
16	6.6	38.8	19.1
17	21.7	48.7	36.6
18	24.6	52.2	33.2

Neighborhoods in Tables 6 and 7 comprise census tracts as follows: 1: 41; 2: 38, 3: 22; 4: 25, 26; 5: 45, 49.03, 49.04. 49.06, 50.02; 6: 96.1, 96.06, 96.07, 96.09; 7: 42.01, 42.02, 42.03, 43; 8: 70.07; 9: 70.01; 10: 53; 11: 5, 12: 6; 13: 35.01; 14: 36, 37; 15: 30, 31.02; 16:31.01; 17: 48.01; 18: 65, 67.02, 68.

Table 7. Percentage Hispanic Among Persons Age 15 and Over and Drivers Stopped by Police in Specific Neighborhoods in Sacramento, California, 1 July 2000 – 30 June 2001

Neighborhood	Percentage Residents Who Are Hispanic	Percentage Suspects Who Are Hispanic	Percentage Drivers Stopped Who Are Hispanic
1	28.5	32.7	29.7
2	23.4	22.1	22.2
3	13.7	14.8	27.1
4	12.5	18.7	21.6
5	23.5	19.2	23.2
6	21.1	16.9	17.8
7	25.4	26.7	18.1
8	41.6	37.7	43.3
9	49.3	28.0	30.5
10	19.6	15.9	17.6
11	29.0	19.1	17.6
12	24.5	17.2	12.1
13	21.4	27.7	19.1
14	45.9	34.6	33.9
15	29.3	23.6	25.0
16	39.5	30.7	26.2
17	15.8	20.3	15.0
18	26.6	15.4	19.4

Table 8. Percentage of Population, Percentage of Suspects, and Vehicle Stops: Correlation Within Selected Racial Groups

African-American		African-American as percentage stops: all reasons	African-American as percentage of stops: non-hazardous reasons
	Percentage of residents 15 and over who are African-American	.679	.682
	Percentage of crime suspects who are African-American	.761	.790
Hispanic		Hispanic as percentage stops: all reasons	Hispanic as percentage of stops: non-hazardous reasons
	Percentage of residents 15 and over who are Hispanic	.643	.601
	Percentage of crime suspects who are Hispanic	.728	.699
White		White as percentage stops: all reasons	White as percentage of stops: non-hazardous reasons
	Percentage of residents 15 and over who are white	.683	.624
	Percentage of crime suspects who are white	.784	.735

Table 9. Race of Driver By Being Asked to exit car (Crosstabulation)

| | | Asked to exit car | | |
		No	Yes	Total
Race of Driver	AFAM	7067	2814	9881
		71.5%	28.5%	100.0%
	ASPAC	3191	447	3638
		87.7%	12.3%	100.0%
	HISP	5209	1743	6952
		74.9%	25.1%	100.0%
	NATAM	47	18	65
		72.3%	27.7%	100.0%
	OTHER	1135	110	1245
		91.2%	8.8%	100.0%
	WHITE	12909	2164	15073
		85.6%	14.4%	100.0%
Total		29558	7296	36854
		80.2%	19.8%	100.0%

Table 10. Race of Driver and Being Searched (Crosstabulation)

		search conducted		Total
		No	Yes	
Race of Driver	AFAM	7254	2627	9881
		73.4%	26.6%	100.0%
	ASPAC	3253	385	3638
		89.4%	10.6%	100.0%
	HISP	5412	1540	6952
		77.8%	22.2%	100.0%
	NATAM	49	16	65
		75.4%	24.6%	100.0%
	OTHER	1159	86	1245
		93.1%	6.9%	100.0%
	WHITE	13165	1908	15073
		87.3%	12.7%	100.0%
Total		30292	6562	36854
		82.2%	17.8%	100.0%

Table 11. Race of Driver and Duration of Stop (Crosstabulation)

| | | Duration of Stop (category) | | | |
		Less than 15 min.	15-29 min	30 min or longer	Total
Race of Driver	AFAM	5859	2702	1179	9740
		60.2%	27.7%	12.1%	100.0%
	ASPAC	2810	629	182	3621
		77.6%	17.4%	5.0%	100.0%
	HISP	4491	1606	763	6860
		65.5%	23.4%	11.1%	100.0%
	NATAM	44	11	10	65
		67.7%	16.9%	15.4%	100.0%
	OTHER	965	211	58	1234
		78.2%	17.1%	4.7%	100.0%
	WHITE	11242	2806	917	14965
		75.1%	18.8%	6.1%	100.0%
Total		25411	7965	3109	36485
		69.6%	21.8%	8.5%	100.0%

Table 12. Race of Driver and Duration of Stop (Crosstabulation), With No Search, Seizure, or Tow

| | | Duration of Stop | | | |
		Less 15	15-29	30 min longer	Total
Race Driver	AFAM	5531	1548	170	7249
		76.3%	21.4%	2.3%	100.0
	ASPA	2748	468	36	3252
		84.5%	14.4%	1.1%	100.0
	HIS	4274	991	142	5407
		79.0%	18.3%	2.6%	100.0
	NATA	41	6	2	49
		83.7%	12.2%	4.1%	100.0
	OTHE	954	181	23	1158
		82.4%	15.6%	2.0%	100.0
	WHIT	10961	1983	216	13160
		83.3%	15.1%	1.6%	100.0
Total		24509	5177	589	30275
		81.0%	17.1%	1.9%	100.0

Table 13. Race of Driver and Anything Found in Search (Crosstabulation)

		Anything found in search		
		no	yes	Total
Race of Driver	AFAM	1791	545	2336
		76.7%	23.3%	100.0%
	ASPAC	276	65	341
		80.9%	19.1%	100.0%
	HISP	1105	285	1390
		79.5%	20.5%	100.0%
	NATAM	8	6	14
		57.1%	42.9%	100.0%
	OTHER	66	13	79
		83.5%	16.5%	100.0%
	WHITE	1301	371	1672
		77.8%	22.2%	100.0%
Total		4547	1285	5832
		78.0%	22.0%	100.0%

Table 14. Race of Driver by Whether Officer is White or Not White (Crosstabulation)

| | | Officer Is White | | |
		no	yes	Total
Race of Driver	AFAM	2798	6796	9594
		25.1%	27.6%	26.8%
	ASPAC	1152	2365	3517
		10.4%	9.6%	9.8%
	HISP	2179	4576	6755
		19.6%	18.6%	18.9%
	NATAM	25	39	64
		.2%	.2%	.2%
	OTHER	409	801	1210
		3.7%	3.2%	3.4%
	WHITE	4566	10076	14642
		41.0%	40.9%	40.9%
Total		11129	24653	35782
		100.0%	100.0%	100.0%

Table 15. Race of Driver by Whether Race of Officer is African-American or Not African-American (Crosstabulation)

		Officer is African-American		Total
		no	yes	
Race of Driver	AFAM	9133	461	9594
		26.8%	27.3%	26.8%
	ASPAC	3382	135	3517
		9.9%	8.0%	9.8%
	HISP	6433	322	6755
		18.9%	19.0%	18.9%
	NATAM	60	4	64
		.2%	.2%	.2%
	OTHER	1124	86	1210
		3.3%	5.1%	3.4%
	WHITE	13959	683	14642
		40.9%	40.4%	40.9%
Total		34091	1691	35782
		100.0%	100.0%	100.0%

Table 16. Race of Driver by Whether Officer is Hispanic or Not Hispanic Crosstabulation

| | | Officer is Hispanic | | |
		No	Yes	Total
Race of Driver	AFAM	8292	1331	9623
		27.5%	23.0%	26.8%
	ASPAC	2964	560	3524
		9.8%	9.7%	9.8%
	HISP	5643	1135	6778
		18.7%	19.6%	18.9%
	NATAM	51	13	64
		.2%	.2%	.2%
	OTHER	1017	199	1216
		3.4%	3.4%	3.4%
	WHITE	12136	2552	14688
		40.3%	44.1%	40.9%
Total		30103	5790	35893
		100.0%	100.0%	100.0%

**Table 17. Races of Drivers Stopped by All Police Officers
Except Those Frequently Stopping African-Americans**

		Frequency	Percent
Valid	AFAM	8773	25.4
	ASPAC	3436	10.0
	HISP	6602	19.1
	NATAM	62	.2
	OTHER	1175	3.4
	WHITE	14449	41.9
	Total	34497	100.0

Table 18. Race of Driver by Badge Number Reported (Crosstabulation)

		Badge Number Present		Total
		no	yes	
Race of Driver	AFAM	211	9670	9881
		27.0%	26.8%	26.8%
	ASPAC	88	3550	3638
		11.3%	9.8%	9.9%
	HISP	143	6809	6952
		18.3%	18.9%	18.9%
	NATAM	1	64	65
		.1%	.2%	.2%
	OTHER	22	1223	1245
		2.8%	3.4%	3.4%
	WHITE	317	14756	15073
		40.5%	40.9%	40.9%
Total		782	36072	36854
		100.0%	100.0%	100.0%

Table 19. Race of Driver by Police Car Equipped with Camera
(Crosstabulation)

		Car Camera-Equipped		Total
		No	Yes	
Race of Driver	AFAM	5945	3936	9881
		24.0%	32.5%	26.8%
	ASPAC	2606	1032	3638
		10.5%	8.5%	9.9%
	HISP	4522	2430	6952
		18.3%	20.1%	18.9%
	NATAM	43	22	65
		.2%	.2%	.2%
	OTHER	899	346	1245
		3.6%	2.9%	3.4%
	WHITE	10723	4350	15073
		43.3%	35.9%	40.9%
Total		24738	12116	36854
		100.0%	100.0%	100.0%

Table 20. Race of Driver by Stops in Study Year Crosstabulation

| | | Stops in Study Year | | |
		One	Two or more	Total
Race of Driver	AFAM	6724	3157	9881
		23.2%	40.4%	26.8%
	ASPAC	3014	624	3638
		10.4%	8.0%	9.9%
	HISP	5436	1516	6952
		18.7%	19.4%	18.9%
	NATAM	52	13	65
		.2%	.2%	.2%
	OTHER	1034	211	1245
		3.6%	2.7%	3.4%
	WHITE	12773	2300	15073
		44.0%	29.4%	40.9%
Total		29033	7821	36854
		100.0%	100.0%	100.0%

Table 21. Driver Race by Resident of City of Sacramento Crosstabulation

		Resident of City of Sacramento		
		No	Yes	Total
Driver Race		15	15	30
		3.7%	2.0%	2.6%
	AFAM	66	211	277
		16.1%	28.5%	24.1%
	ASPAC	30	70	100
		7.3%	9.5%	8.7%
	HISP	64	170	234
		15.6%	23.0%	20.3%
	OTHER	18	20	38
		4.4%	2.7%	3.3%
	WHITE	217	254	471
		52.9%	34.3%	41.0%
Total		410	740	1150
		100.0%	100.0%	100.0%

Table 22. Driver Observation Report: Percentage of Drivers Whose Race Was Recognizable, by Time

Intersection	Time	Number of Drivers Observed	Percent With Race Recognizable
Truxel/W. El Camino	6:55-7:25	524	71.0
	7:25-7:55	459	93.3
	12:45-13:15	465	93.8
	16:20-16:50	553	82.3
Folsom/Alhambra	16:00-16:30	429	89.0
	16:32-17:02	614	67.1
Second and J St.	16:30-17:00	207	58.0
	17:00-17:30	359	5.9

Table 23. Driver Observation Report: Percentage of Drivers Observed at Specified Intersections

Intersection	Race	Distribution Reported by Observer	Distribution in Census Tract
Second and J St.	Hispanic/Latino	6.2	18.6
	White	80.5	39.3
Census Tract: 53	African-American	10.3	26.1
	Asian/Pac. Is.	3.0	8.2
	Other	0.0	7.8
Arden/Challenge	Hispanic/Latino	15.7	8.4
	White	61.7	69.9
Census Tract: 54.02	African-American	19.9	4.6
	Asian/Pac. Is.	2.7	11.1
	Other	0	6.0
Grove/El Camino	Hispanic/Latino	31.5	40.2
	White	47.0	29.4
Census Tract: 68	African-American	18.9	9.7
	Asian/Pac. Is.	2.5	15.5
	Other	0	5.2
Del Paso/Arden	Hispanic/Latino	17.3	24.8
	White	61.7	57.0
Census Tract: 69	African-American	18.4	9.0
	Asian/Pac. Is.	2.4	3.8
	Other	0.2	5.4

Table 24. Races (Percentages) Observed at DUI and TOPS Checkpoints Compared With Census Tract In Which Checkpoint Was Located

Intersection	Race	Distribution Observed at DUI Checkpoint	Distribution in Census Tracts
DUI: Stockton/Lawrence Census Tracts: 44.01, 31.02	Hispanic/Latino	20.2	27.1
	White, Non-Hisp.	30.2	35.6
	African-American	26.8	22.1
	Native American	0.0	0.8
	Asian/Pac. Is.	16.4	10.2
	Other	6.4	4.4
	Total Number	440	6112
DUI: Marysville/Los Robles Census Tracts: 63,66	Hispanic/Latino	13.5	20.4
	White, Non-Hisp.	46.0	53.1
	African-American	29.4	13.3
	Native American	0.0	1.7
	Asian/Pac. Is.	7.9	7.6
	Other	2.9	3.9
	Total Number	378	7268
TOPS: Franklin Villa Census Tracts: 49.03, 49.04	Hispanic/Latino	14.3	18.2
	White, Non-Hisp.	7.5	33.6
	African-American	66.0	23.8
	Native American	0.0	0.6
	Asian/Pac. Is.	8.6	18.4
	Other	4.1	5.3
	Total Number	268	8068

Table 25. Telephone Validation Study Results: Percent Agreement of Officer Report and Driver Recall

Question	Percent Agreement
Gender	95.8 %
Race of driver	87.5
Search conducted	87.5
Number of passengers	83.3
Asked to exit car	83.3
Result of stop	83.3
Reason for stop	82.6
Duration of stop (reports 10 minutes or less apart)	73.9
Time of stop (hour)	70.8

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