TRAFFIC STOP DATA ANALYSIS PROJECT OF THE SACRAMENTO POLICE DEPARTMENT

Final Report for the Sacramento Police Department

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Lamberth Consulting was formed in 2000 in an effort to provide racial profiling assessment, training, and communication services to universities, states, counties, cities, civil rights groups, litigators, and communities.

Dr. John Lamberth, CEO and founder of Lamberth Consulting, developed the nation's first racial profiling methodology in 1993. Since that time we have revised and adapted our methodology for highways, urban areas, suburban areas, and pedestrian populations. We have expanded our service offerings to include training solutions targeted towards law enforcement and community members, as well as communication planning services to help educate and inform all parties concerned about racial profiling issues.

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We would like to thank the Sacramento Police Department (SPD) for their support and cooperation during the course of this study.   From the beginning of the effort, we were able to call upon the resources of the Department for the components that are necessary to complete a study of this nature. For a period of 8 months we had surveyors out on the streets of Sacramento at all hours of the day or night and SPD provided security for them. The Department provided manned vehicle escort for all survey sessions which allowed the surveyors to concentrate on their basic task, which was accurately determining the race/ethnicity of motorists. Each benchmark location was observed both in daylight and/or at night and SPD personnel accompanied us on all of those observational trips.

We worked closely with members of the agency to understand traffic patterns and enforcement. They provided us with information about police activity, special deployments, special circumstances within the City which influenced policing, and many other aspects of their work that would be necessary for us to understand when conducting this study. We thank them for their willingness to share their knowledge of this jurisdiction with us.

The successful identification of benchmark locations and of stop data that accurately reflects traffic in that location are essential to the successful completion of a study of racial profiling. The personnel of the Department who were assigned to this project worked and shared their insight and experience with us and helped to make the

study run smoothly. Completing a project of this magnitude in the time frame allotted

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fashion and we thank them.

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EXECUTIVE SUMMARY

The past decade has seen increased awareness of and concern with the treatment of minority motorists by police. The issue, often referred to as racial profiling, has generated interest among lawmakers, law enforcement agencies, and the communities in which they work. As a result, data collection efforts have begun in many jurisdictions. Some efforts are due to threats of litigation or settlements; others have been legislatively mandated, while still others have been voluntary in nature. The Sacramento Police Department (SPD) data collection efforts fall into this latter category. In fact SPD was one of the departments in the country that addressed this issue by collecting data on all traffic stops as early as 2000.

Collecting traffic stop data is of little use unless some level of analysis of that data is conducted. Further, for the analysis to have meaning, some level of action must be taken resulting from interpretation of the analysis results. If the analysis demonstrates that stop practices are unbiased, then the agency should ensure that community members and other stakeholders are aware of this and the agency and officers should be congratulated for this fact. If the analysis demonstrates that issues exist that may be caused by bias, then the agency should commit real resources to the issue, and seek to change the behaviors that led to this concern.

One of the major issues in data analysis to date has been in determining the appropriate benchmark or standard to which the stop data are to be compared. The methodology employed in this study is one that has been employed in several studies across the country, as well as being relied upon by several Courts. This methodology

employs what we believe to be the only appropriate benchmark for such an analysis; that

is, a direct measure of the transient populations (driving populations) in specific locations

and city wide. This allows a comparison of racial/ethnic groups as they are represented

in the transient population to police stops of those groups.

This study addressed the following questions:

- Is there evidence of targeting of minority motorists in traffic stops conducted by the SPD?

- Which minority groups (i.e., Blacks[1] and Hispanics), if any, are targeted?

- In which locations are profiling of any group likely to occur?

- Are Black and/or Hispanic drivers treated in a similar fashion after the stop occurs?

- Are Black and/or Hispanic drivers more likely to speed 15mph or more over the speed limit than are White drivers?

SPD began collecting data a number of years ago using the Vehicle Stop Data Form.

The form was adapted in the first few months of this study. The data utilized for analysis

were collected between December 2007 and May 2008. Data on the transient traffic

population were collected at 55 locations throughout the city beginning in the fall of 2006

and concluding in the spring of 2007. We have found that the racial/ethnic demographics

of the traffic are stable throughout the year. The locations for the deployed analysis were

selected due to the high number of stops at each, traffic patterns that were relatively

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[1] For consistency sake, we have chosen to use the term Black to refer to the minority group that is often called African American. The term Black is more inclusive as not all motorists in Sacramento who are Black fit into the category of African American (e.g., some Africans and some motorists from Caribbean countries who are visitors to Sacramento). Similarly we have chosen to use the term Hispanic rather than Latino, as it emphasizes that those of Hispanic descent come from many parts of the world and it includes both genders.

representative of the jurisdiction[2], as well as accessibility for surveyors. For the random

analysis, which allows an analysis of stops compared to traffic city wide, Sacramento was

divided in to approximately 300 quarter square mile polygons. Then slightly more than

10% of the polygons were randomly selected to be surveyed for the race/ethnicity of the

traffic. Traffic surveys for the deployed, random and egregious violators surveys, on

randomly selected days and times at each location were conducted over a seven-month

period by highly trained surveyors. The random and deployed surveys provided the

benchmark data to which stop data was compared. Finally, four locations were

benchmarked for traffic simultaneously with the measurement of egregious speeders in

these locations.

    The results of this study with respect to traffic indicate that Asian and White

motorists are stopped less often than would be expected by their presence in traffic and

that Hispanic motorists are stopped at about the rate expected. Black motorists are

stopped at a higher rate than would be expected by their presence in traffic. This higher

rate varies from about 1.9 times as likely as a non-Black motorist to be stopped in the

deployed analysis to 2.1 times as likely to be stopped as a non-Black motorist in the city

wide random analysis.

        No racial/ethnic group of motorists received more citations than would be

expected when compared to the proportions of that group stopped by SPD. No

racial/ethnic group of motorists was detained during the stop longer than any other group.

However, Black and Hispanic motorists were asked to exit their vehicles at a higher rate

than were Asian and White motorists. There were three types of searches analyzed, those

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[2] Every effort was made to benchmark locations in all Police Districts in Sacramento.

that are related to higher officer discretion. Hispanic motorists were patted down (Terry Cursory search) at a significantly higher rate than would be expected, while Black motorists were searched using the parole/probation search authority significantly more often than would be expected. Finally, with regard to searches, both Black and Hispanic motorists were searched for probable cause more than were motorists of other race/ethnicities. An analysis of hit rates, the rate at which contraband is found following a search, revealed that these rates are approximately equal for all four race/ethnicities.

A rigorous test of whether minority motorists egregiously exceeded the speed limit (by 15 mph or more) was conducted. At 4 locations in different parts of Sacramento, vehicles were both benchmarked for the race/ethnicity of the driver and then randomly selected motorists were clocked for speed. There was no evidence that either Black or Hispanic motorists are more likely to exceed the speed limit by 15 mph or more than were any other drivers. In fact, slightly more White motorists were exceeding the speed limit by 15 or more mph than were the other racial/ethnic groups; however, this difference was not statistically significant.

INTRODUCTION

For decades representatives from minority groups have provided anecdotal evidence of racial profiling by law enforcement agencies on the roadways of our country. The specific measurement of the practice, however, was not formalized until 1994. During the criminal litigation case in New Jersey (*State v. Soto et al.*), a group of defendants alleged that New Jersey State troopers were targeting and stopping Black motorists on the highway, not because of their driving behavior, but because of the color of their skin. During the course of this case the race and ethnicity of the driving population was observed and recorded on portions of the New Jersey Turnpike[3]. The driving population then was compared to the racial and ethnic makeup of the individuals stopped in New Jersey to determine whether a disproportionate percentage of minority drivers were being stopped relative to their presence on the roadway. This method was also used in Maryland (Lamberth, 1996), during the civil litigation case (*Wilkins v. Maryland State Police*) in which Robert Wilkins alleged that the rental car driven by his cousin on a Maryland State highway was stopped and searched by a drug-sniffing dog due to a "profile" prepared by the Maryland State Police which included Black males driving rental cars.

In the former case, the courts held for the defendants. The latter case was settled, and the issue of racial profiling began to develop greater national attention and exposure. It is important to note that the early work performed in this field, while groundbreaking, was limited due to the fact that it was conducted within the context of litigation. That is,

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[3] Lamberth, J. Revised Statistical Analysis…(1994) Available at
http://www.lamberthconsulting.com/downloads/new_jersey_study_report.pdf

the issue was reviewed in a combative forum between community and law enforcement

participants. The work was completed slowly, and dialogue surrounding the science was

limited. A dramatic shift resulting from state legislation, police agency participation and

leadership relative to this science began to take place in the late 1990's. State legislatures

have mandated data collection, and/or developed laws prohibiting racial profiling by law

enforcement agencies. At the time of this report, 26 states have enacted legislation

relative to this issue. Police agencies in all but 3 states have undertaken efforts due to

mandate, decree, or of their own volition. Several significant events have occurred

nationally which have influenced this shift in focus, and have helped to direct activities in

this field.

In June 1999, the Department of Justice (DOJ) hosted a conference on

"Strengthening Police-Community Relationships." The conference recognized that

police are more effective when they have the trust and cooperation of the residents in

their community. However, in many communities, especially minority communities, a

lack of trust remains between law enforcement and local residents. This tension is

exacerbated by allegations of police misconduct such as racial profiling.

The conference highlighted the need to identify proactive police practices to build

trust, enhance police integrity and reduce police misconduct. Members at the conference

determined that collecting data on traffic and pedestrian stops, analyzing this data, and

providing the results for public review can help to shift debates on racial profiling from

anecdotal reports to informed discussions. By being proactive about recognizing and

addressing racial profiling, police communities can go a long way towards managing

perceptions around the issue and strengthening police-community relationships.

In February 2000, the DOJ held a conference entitled "Traffic Stops and Data

Collection: Analyzing and using the Data." In this session, more than 75 federal, state

and local police administrators, prosecutors, civil rights advocates, government officials

as well as police labor leaders, researchers, and community leaders gathered to examine

the collection, analysis, and use of data on traffic, pedestrian and other law enforcement

stops. Collectively the participants reached several conclusions:

- Traffic stop data collection systems are needed to respond to the perceptions of racial profiling, to measure the reality, and to bridge the gap between minorities and police.

- Core data elements of traffic stop systems should include: date and time, location, race and ethnicity, gender, reasons for initiating the stop, actions taken by the officer, and duration of the encounter.

- Benchmarks for comparing data collected on stops are essential for conducting valid analyses. Without valid control groups, supportable statistical analyses are not possible.

- Data that is complete, accurate and truthful is critical.

- Analysis of data must be conducted by a capable and credible party.

- Publicizing traffic stop data can help to build trust between public law enforcement agencies and the public.

In August of 2001, the Police Executive Research Forum under a DOJ grant held

a conference for leading researchers in the field to discuss issues relating to

benchmarking for stop data collection and analysis. The conference was attended by

social scientists, legal scholars and practitioners from several police departments. This

conference was the first of its kind to bring leading scientists and researchers together to discuss the best methods for analyzing stop data.

In March of 2003, the SOROS Foundation provided support for a conference on racial profiling that was co-hosted by the Institute on Race and Justice at Northeastern University, the American Civil Liberties Union, the National Organization of Black Law Enforcement Executives, and Lamberth Consulting. The Conference, "Confronting Racial Profiling in the 21st Century: Implications for Racial Justice," featured 30 of the leading researchers in the country. The intent of the conference was to bring together researchers, law enforcement representatives and community representatives to collectively review the latest and most progressive methods for stop data collection and analysis. The conference also focused on post stop activity, community engagement, and data auditing as primary subject topics.

In November, 2003, the Northwestern University Center for Public Safety and the Police Executive Research Forum held the Third National Symposium on Racial Profiling. The third day of that conference was given over to discussing issues of data collection and analysis. Specifically issues of risk management, benchmarking, post stop activity, and related topics were discussed. Observational benchmarks, which were pioneered by Lamberth Consulting, were cited as the most used and reliable of the strong benchmarks discussed.

In February of 2004, the Community Oriented Policing Services of the Department of Justice (COPS) sponsored the Western Regional Racially Biased Policing Summit in conjunction with the City of Sacramento and the Sacramento Police

Department. This conference explored benchmarking, post stop analyses, community police engagement, training and a variety of other issues integral to the racial profiling debate.

In the summer of 2004, Community Oriented Policing Services of the Department of Justice funded two workshops that were hosted by the Police Executive Research Forum on the assessment of Racial Profiling and the best practices for conducting assessments.

In January, 2005 the Open Justice Initiative hosted a workshop in Budapest, Hungary in which ethnic profiling was considered as an issue in several European countries. John Lamberth presented a paper on the methodology utilized in the United States that allowed for the scientific study of racial profiling. Among other things this initiative led to a monograph "Ethnic Profiling by Police in Europe" and a study of ethnic profiling in the Moscow metro system.[4]

From these and other conferences, a central and critical focus has become clear. To manage public perception about racial profiling and to strengthen community-policing relationships, the method used for collecting and analyzing stop data is critical. Two primary components must be in place to determine whether racial profiling is occurring: benchmarks and complete stop data.

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[4] Ethnic Profiling in the Moscow Metro. (2006). Open Society Institute, New York, N.Y.

The Sacramento Experience

SPD was one of the early police departments to collect racial/ethnic information on all of the motorists they stopped and to retain a researcher to determine whether racial profiling was occurring, a decision that is to be commended. The Chief of Police appointed a Citizens Committee to work with the department and the researcher. The first of three reports on this endeavor appeared in 2001. Unfortunately, the researcher utilized a now virtually universally discredited benchmark, census data, for the study. The study found that Black motorists were stopped more often than their percentages in the driving age population would suggest. However, the report went on to say, "*The data, however, support explanations of this pattern other than deliberate stopping of drivers only because they are minorities.*" The explanations include:

- *Crime suspects are more likely to be African American.*

- *White officers are no more likely to stop minorities than are African American or Hispanic Officers.*

- *The actions of 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 when 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 information suggest that officers are frequently unable to identify the race of a driver prior to stopping his or her car.[5]*

Unfortunately, this report left SPD and the community with the possibility of quite different interpretations of what the report meant, as have other reports that have been produced around the country using census data as a benchmark. Some people associated with SPD read the report to indicate that unexplained discrepancies in the stops of minority motorists were not found so targeting of those motorists was not occurring, while some members of the community read the report to say that African Americans were being overstopped and thus targeted by SPD. Sacramento City Council stepped into this situation and appointed the Citizens Racial Profiling Commission and tasked them with oversight of a new study which the Council mandated. Pursuant to a request for bids for this new study, Lamberth Consulting was recommended by the Commission and selected by the City to conduct this study. The contract was signed in February, 2006. Work began immediately and from the first it was apparent that it was imperative to revise the data collection form that SPD was using if a definitive study was to be completed. This revision was accomplished and data collection began in October of 2006. About the same time, Lamberth Consulting began a long process of determining what the racial/ethnic makeup of the traffic in Sacramento was.

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[5] Greenwald, H. P. (2001) Vehicle Stop Data Collection Report. University of Southern California, pp. 4-5.

Benchmarks

When a police department develops stop data that designates the race/ethnicity of each motorist stopped, the next necessary ingredient for accurately analyzing those data is the data against which to compare the stops. This has been termed the "denominator" issue by some, but we prefer to refer to this comparison data as the benchmark. Knowing that a police department stops 50% Black motorists does not tell us anything about whether they are targeting Black motorists, because until we know how many motorists who are Black are driving on the streets and highways patrolled by that police department, we are not in a position to assert that police are stopping too many Black motorists, about the right percentage or too few.

Some researchers in the late 1990's and early 2000's guessed that census data might estimate driving populations reasonably well. Studies were conducted for individual jurisdictions and for some states using census data as the primary data set for benchmarks. Examples include San Diego[6], Connecticut[7] and Texas Department of Public Safety[8], 2000. These data were also attractive to other organizations, such as newspapers, which had easy access to census data. Journalists for newspapers reported on simple percentage comparisons of stop data against census data estimates, often claiming that these differences indicated racial profiling. The field has since learned that

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[6] Cordner, et al. (2001) Vehicle stops in San Diego, 2001. Available at
http://www.sandiego.gov/police/pdf/stoprpt.pdf
[7] Cox, et al. (2001) Interim report of traffic stops statistics for the state of Connecticut. Available at:
http://www.ocjc.state.or.us/Racial_Profiling/ct.pdf
[8] Traffic Stop Data Report, 2001. Available at:
http://www.txdps.state.tx.us/director_staff/public_information/trafrep2001totals.pdf

census data do not provide a good estimate of driving populations. Today, experienced

researchers argue against the use of these data[9], citing for example, that census data alone

do not account for driving populations such as commuter traffic, university populations

and tourists.

The benchmark that has both been relied upon by courts in reaching decisions

(Soto, 1996; Wilkins, 1996; Folkes, 2000) and utilized by other researchers in attempting

to validate possible alternative benchmarks[10] (Alpert, Smith & Dunham, 2003, Farrell, et

al., 2004) is observations of traffic. Observational surveys of specific locations are

reliable measures of the traffic from which police officers select motorists to stop at that

location and thus are appropriate benchmarks.

Violators

One question facing those attempting to analyze traffic stop data involves the

selection of the most appropriate benchmark to use for comparison. A number of

measures have been used in the research to date and an open question remains as to

whether using estimates of the population violating traffic laws is an improvement over-

estimates of drivers operating on a community's roadways. Courts (beginning with the

Soto and *Wilkins* decisions) have said violators represent the appropriate measure, but

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[9] Fridell, L. (2004) By the Numbers. Available at:
http://www.policeforum.org/upload/BytheNumbers%5B1%5D_715866088_12302005121341.pdf;
Farrell, et al. (2005). Learning from Research and Practice. Available at:
http://www.racialprofilinganalysis.neu.edu/IRJ_docs/Report_NewChallenges21.pdf
[10] Alpert, et al. (2003) The Utility of Not at Fault Traffic Crash Data in Racial Profiling Research.
Farrell, et al. (2003) The Driving Population Estimate Available at:
http://www.racialprofilinganalysis.neu.edu/IRJ_docs/Report_NewChallenges21.pdf

then quickly changed their focus when it became obvious that the two were virtually

synonymous.

Court decisions uniformly support the notion that any motorist violating a traffic

law is subject to being stopped by police and are the appropriate group to benchmark.

However, to date, empirical evidence supports the contention that traffic and violators are

synonymous, and in the *Soto* case the Court essentially used traffic and violators

interchangeably.

The first scientific measurement of the appropriate comparison number for traffic

stops determined both the proportion of Black motorists in the traffic stream, and those

violating at least one traffic law (*New Jersey v. Soto, et al.*). The evidence in that case

subsequently has determined that the two are virtually synonymous. First in *Soto* and in

Wilkins v. Maryland State Police virtually every motorist was speeding (98.3% in *Soto*

and 93.3% in *Wilkins*). More recently, Lamberth (2003)[11] reported a study in which

police officers were given 5 minutes to determine whether randomly selected cars were

violating some traffic law. The study concluded that fully 94% of the drivers were

violating some law, and it took a mean of 28 seconds for the officers to spot the violation.

For the reasons stated above, and due to constraints on resources, we have used

the traffic estimates as our benchmarks in Sacramento. However, we should note that

direct research measuring differences between racial or ethnic groups and driving

behavior is very limited. While empirical evidence suggests that traffic violators and

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[11] Lamberth, John, "Measuring the racial/ethnic makeup of traffic: The how, what and why." Paper presented at *Confronting Racial Profiling in the 21st Century: Implications for Racial Justice.* Boston, March, 2003.

traffic motorists are virtually identical, a question remains as to whether one racial or

ethnic group is more likely to violate traffic laws egregiously than another. That is, it is

theoretically possible, while perhaps not intuitive, that one racial or ethnic group is more

likely to speed excessively, or drive vehicles with severe vehicle codes violations, or run

traffic lights more often, etc. To date, empirical evidence is scant and mixed on the issue

of whether one racial/ethnic group or another violates traffic laws more egregiously than

do others. Two studies commissioned by State Police Agencies have found that

minorities, and particularly Black motorists, violate speeding laws more egregiously than

do White motorists. Both of these studies considered excessive speeding (defined as 15

mph above the limit) as the egregious violation to be studied. These studies have been

severely criticized on methodological grounds.[12] Finally, one study, conducted by

Lamberth Consulting has found that, while slightly more Black motorists apparently

violate the speeding laws more egregiously than do other groups, the differences are

small and are likely caused, at least in part, by the fact that there appear to be more young

Black motorists on the roadway than young White motorists. We feel that this area of

research is vitally important and to that end, with the agreement and support of SPD

designed the egregious violators study so that some of the questions concerning

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[12] Lange, et al. utilized pictures of motorists who were speeding 15 miles per hour (mph) or more over the
speed limit. The major criticism of this study is the large percentage of pictures that could not be reliably
classified as to the race of the driver. When the criterion was 2 out of 3 raters agreeing on the race of the
driver, 32% of the pictures could not be classified. When all three raters had to agree, 60% of the data was
unusable. Engle, et al. also argued that Black drivers and what they called non-Caucasian drivers (which
included Hispanics many of whom are Caucasian) were more likely to be speeding at least 15 mph above
the speed limit than were White drivers. This study suffered from, among other things, the fact that 1) only
drivers who were not in a group were selected to be measured as to their speed, 2) counties in Pennsylvania
were not selected randomly for inclusion, 3) after 20 counties were chosen to be included in the study an
additional 7 counties were added and these new additions were much more likely to have Blacks and non-
Caucasians as egregious speeders, and 4) the data underlying the study are not available to other
researchers.

differences in violating of traffic laws by different racial/ethnic groups could be

addressed.

METHODOLOGY: OVERVIEW

The methodology used in this study has been developed and refined based upon experience with similar efforts in determining if racial profiling is occurring in the states of New Jersey, Maryland, Arizona, Kansas, California, and Michigan (*State of New Jersey v. Soto*,[13] *Wilkins v. Maryland State Police*,[14] *Arizona v. Folkes*[15], Lamberth, 2001, 2003), and through our experience in working with national leaders on this issue in US DOJ conferences and work sessions. Our belief is that the most effective approach is a holistic one that includes the assessment of racial profiling, intervention to train officers and to improve processes and behaviors if the problem exists. One of the most crucial elements is communications with the stakeholder communities and groups that are affected by the practice.

It is not possible to conduct benchmarking in every location of a city or highway to assess racial profiling. The logic of our work, elemental to statistical analysis in other contexts, is to sample certain portions of city drivers on randomly selected days and times of day. This deployed methodology enables the generalization of the study results to the police department's activity in the areas that we study. The determination of locations to assess in a city is necessarily determined by traffic patterns and police activity in that city. Days and times of day are selected randomly to assure the greatest generalization possible. In this study, we designated 25 specific locations within Sacramento to be

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[13] *State v. Pedro Soto*, A. 734A. 2d 350(N.J. Super: Ct. Law Div. 1996)
[14] *Wilkins v. Maryland State Police, et al.*, Civ. No MJG-93-468
[15] *State v. Barrington Folkes, et al.*

assessed and also utilized 9 more locations that met the criteria for deployed locations but were benchmarked for the other assessment procedure utilized in this study.

The benchmarks at these locations were then compared to the stops at these locations. To be specific, all stops that occurred at the location or within one quarter of a mile were used in the comparison to the benchmark. Thus, in the deployed analysis, there are 25 (plus 9 from those areas benchmarked for the random analysis) different analyses for each of three groups of minority motorists, Asians, Blacks and Hispanics.

Deployed Site Selection

In observational benchmark work in urban/suburban areas, specific intersections are selected for surveying generally based upon high police activity (known as a deployed analysis), with approximately a quarter of a square mile perimeter (polygon) drawn around them. We worked with the SPD to determine which specific locations to survey. The factors that went into these decisions are provided below:

- Location of agency stop activity gathered from a review of stops during 2005 (with some reference to 2004),

- Computer-Aided Dispatch (CAD) data on police stops,

- Consultation with both Police Department representatives and the CRPC,

- Local demographics at reviewed locations (businesses, schools, etc.),

- Traffic (motorist and/or pedestrian) patterns and volume, and

- Suitability of sight for surveying (safe surveying areas, ambient lighting).

After comparing the list of the top 50 locations for stops made by SPD in 2004

and 2005, 54 locations were carefully reviewed for suitability. During these site reviews,

a composite of the locations was developed recording landmarks and apparent lighting

(direct lighting from streetlamps, and ambient lighting from nearby businesses), street

direction and number of lanes, and by conducting traffic counts to estimate traffic

volume.

During the site selection process, the CRPC was consulted concerning the sites.

Members of the Commission suggested several other locations which were discussed.

With the exception of one location, all of the locations of concern to members of the

Commission were included or were so close to a selected site that for all practical

purposes they were being measured. The one site that Commission members were

concerned about, Marysville and Grand, was included in the benchmarked sites.

The locations chosen for the deployed analysis are:

1. 16th & F
2. Arden & Blumfield/Harvard
3. Arden & Challenge
4. Arden & Del Paso
5. El Camino & Evergreen
6. El Camino & Truxel
7. Florin & 24th
8. Florin & Franklin
9. Florin & Freeport
10. Folsom/Julliard & Florin Perkins
11. Folsom/Power Inn & Howe
12. Fruitridge & Florin Perkins
13. Fruitridge & Franklin
14. Fruitridge & Freeport
15. Mack & Franklin
16. Mack & Valley Hi/LaMancha
17. Marysville & Arcade
18. Marysville & Grand
19. Meadowview & 24th

20. Northgate & San Juan/Silver Eagle
21. Northgate & W. El Camino
22. San Juan & Truxel
23. Stockton & Broadway
24. Stockton & Fruitridge
25. Stockton & Lemon Hill

The second methodology utilized in this study involved random selection of 10% of specific sections of the city for benchmarking. By selecting the locations randomly it was possible to generalize to the entire city, allowing comparison of stops in the entire city to traffic in the entire city. The analysis was a global analysis of the proportion of stops of each racial/ethnic group to the number of that group in citywide traffic. The major advantage to the random selection of polygons from the entire city is the ability to include the city as a whole and to compare the stops in the entire city to the traffic. The major disadvantage of the random selection is that more estimation is necessary in developing the estimate for city wide traffic. As with the deployed methodology, days and times of day for surveying were selected randomly so that the results could be generalized. There were several locations where the traffic was quite sparse. In these locations observers returned to each location at 8 different days/times of day and remained there for an hour each time. Thus these locations were observed for a full eight hours.

Random Site Selection

The approach to selecting sites for the random analysis is dramatically different from site selection for a deployed analysis, at least in its initial phases. First, Sacramento GIS specialist David Wilcox in Central GIS provided the data used to identify the locations by random sampling.

 This included City boundaries, intersections, streets, natural features (e.g., creeks and waterways), and public facilities (e.g., airport facilities, schools, and parks). He also provided the grid which was used for the random sampling. This file consisted of one-quarter square mile squares (polygons) each 2640 by 2640 linear feet, which was superimposed over the map that was created by the procedure described below). Each square was assigned a unique number to be used in the random sampling procedure.

Using ArcGIS, software that creates maps of geographic areas, this grid was trimmed to approximate the City boundaries; that is, polygons that extended beyond the City boundaries were omitted, as well as polygons that overlapped areas such as parks, schools, and waterways. As a result, a map of the City was created whereby a series of approximately 300 one-quarter square mile polygons was superimposed over City streets and intersections.

Then, each polygon was categorized by the beat in which it was located, which generated 18 lists of numbered polygons (one for each beat, 1A through 6C, plus 3M). Then, using the random number generator in MS Excel, two numbers were selected at random for each beat, with two exceptions. One number was randomly selected for Beat 3A, Beat 3M, and Beat 6A due to the comparatively small geographic area in these beats. This method of random selection is a standard procedure in the social sciences which ensures that each unit subject to sampling has an equal probability of being selected. This method resulted in 35 locations selected at random.

The locations chosen for the random analysis were:

1. 27th & 57th
2. 29th & E
3. 51st & Folsom
4. 5th & Broadway

5. 5th & Capitol
6. Arden & Challenge (deployed location)
7. Bridgeford & Edmonton
8. Broadway & 53rd
9. Broadway & MLK
10. Bruceville & Calvine
11. Bruceville & Timberlake
12. Del Paso & Baxter/Barstow
13. Florin & Franklin (deployed location)
14. Folsom & Wisseman
15. Fruitridge & 24th
16. Gateway Oaks & Venture Oaks
17. Gateway Park & Truxel
18. Havenside & Gloria
19. Meadowview & 19th
20. Meadowview & Detroit
21. Marysville & Arcade (deployed location)
22. Marysville & Grand (deployed location)
23. N. Park & Kokomo
24. Northgate & Rosin Court
25. Norwood & Eleanor
26. Power Inn & Elder Creek
27. Power Inn & Ramona
28. Richards & Dos Rios
29. Riverside & Volz
30. Seamus & Lonsdale
31. Stockton & Lemon Hill (deployed location)
32. Sully & Pinedale
33. Valley Hi & Deer Lake
34. Valley Hi & Valley Green
35. W. River & Barandos

As can be seen by an inspection of the lists of deployed and random locations and

two lists, there is some overlap between the two. Five locations which had previously

been selected for the deployed analysis were also randomly selected. While it is

imperative that the locations for the random analysis be exactly as they were chosen in a

random draw (and they are) the deployed analysis does not depend on random selection.

Therefore, it is not only possible to use sites chosen for the random selection in the

deployed analysis, but advantageous to the stability of the analysis. Additionally, any of

the random sites that met the criteria for the deployed analysis could be and were used in

the deployed analysis.

Surveyor Training

Teams of surveyors were hired and trained to visually identify and manually

record the race and ethnicity of individuals who comprise the transient populations. The

CRPC requested that surveyors not be associated in any way with SPD, and Lamberth

Consulting complied with this request. Training sessions and dry run-throughs were held

in September, 2006 for surveyors participating in the first benchmarking schedule for

traffic benchmarking. A second training session was conducted for the egregious violator

portion of the study in January, 2007. Makeup sessions were conducted by team leads

for any surveyors participating in the first or second surveying session that missed the

training class.

Survey training is critical to ensure that surveyors understand the surveying

process, surveyor positioning, daytime and nighttime surveying guidelines, data

recording procedures, quality assurance reviews such as the assessment of inter-rater

reliability, and the data cataloguing steps required for this work. During this session,

survey team leaders also were trained on survey management tasks such as status

reporting, interacting with police department personnel, and supervising surveyors. The

survey training consisted of:

1. A high-level overview of the purpose of the Sacramento study. The intent of
   this portion of the training was to provide surveyors with a basic
   understanding of the importance of the study and the critical role that they

would play in the study.

2. An explanation of the survey method, schedule, and roles were discussed, and the survey procedures were diagrammed and reviewed. The intent of this portion of the training was to provide surveyors with a basic understanding of how the survey would be conducted.

3. Hands-on practice in the field in which surveyors practiced on-location, using the actual data sheets developed for the survey. During this portion of the training, guidance was provided on data capture, review, and feedback to surveyors on the methods and tips for positioning, and data recording. Surveyor data sheets were reviewed, and feedback was provided on performance. The intent of this portion of the training was to provide surveyors a chance to practice in a "consequence-free" environment before conducting the actual survey. Inter-rater reliability coefficients were computed to ensure that surveyors were trained to criterion[16].

4. Dry run-throughs were conducted with team leads and with surveyors. The run-throughs served to assist surveyors in determining driving routes, driving timing, break timing, and survey protocol. The intent of the run-throughs was to ensure that surveyors would hit the ground running during surveying.

5. Surveyors for all sessions were accompanied by an SPD officer who provided transportation, security and lighting during all sessions where the ambient lighting was insufficient for accurate recognition of the race/ethnicity of motorists.

6. A traffic officer of SPD accompanied the surveyors for each session of the egregious violators survey and operated the Lidar gun to assure that the speed reading were consistently accurate.

Benchmarks Compared to Census Data

As previously described, the appropriate standard of comparison, or benchmark, must be established. Existing stop data then must be compared against that benchmark to assess the occurrence of racial profiling. That is, the percentage of minorities stopped by police departments must be compared to the benchmark data to assess whether minorities

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[16] A minimum inter-rater reliability coefficient (i.e., the percent of agreement between two surveyors observing the same car at the same time) of .80 was used as this criterion. This is a commonly accepted standard in social science research.

are stopped at a disproportionate rate to that at which they travel the roadways.

Furthermore, most experts agree that the appropriate benchmark is not city or

surrounding area population that can be obtained in census data. The appropriate

benchmark is the motoring, or transient, population.

The racial composition of this transient population may or may not mirror the

population of the city or county.

Tables 1 A, B and C provide a comparison of census data and observation

benchmark data for three different racial/ethnic groups for deployed locations in

Sacramento. Census data are for those individuals 18 and above who reside in the census

tracts that directly abut the location.

Table 1A. Comparison of Asian Census and Observation Benchmarks at Deployed Areas Utilized in the Study.

No.	Location	Asian Census	Asian Benchmark	Comparative Disparity[17]
1	16th & F Street	5.2%	8.3%	-59.6%
2	Arden & Blumfield/Harvard	6.8%	11.2%	-64.7%
3	Arden & Challenge	9.5%	12.2%	-28.4%
4	Arden & Del Paso	4.7%	7.8%	-66.0%
5	El Camino & Evergreen	8.7%	10.5%	-20.7%
6	El Camino & Truxel	11.2%	10.3%	8.0%
7	Florin & 24th	24.0%	16.9%	29.6%
8	Florin & Franklin	21.4%	22.8%	-6.5%
9	Florin & Freeport	21.4%	16.6%	22.4%
10	Folsom/Julliard & Florin Perkins	9.3%	12.5%	-34.4%
11	Folsom/Power Inn & Howe	9.3%	15.2%	-63.4%
12	Fruitridge & Florin Perkins	10.8%	13.8%	-27.8%
13	Fruitridge & Franklin	21.4%	15.6%	27.1%
14	Fruitridge & Freeport	24.2%	22.3%	7.9%
15	Mack & Franklin	23.9%	20.5%	14.2%
16	Mack & Valley Hi/LaMancha	15.7%	18.4%	-17.2%
17	Marysville & Arcade	9.5%	8.8%	7.4%
18	Marysville & Grand	11.9%	8.9%	25.2%
19	Meadowview & 24th	26.5%	20.3%	23.4%
20	Northgate & San Juan/Silver Eagle	7.3%	11.2%	-53.4%
21	Northgate & W. El Camino	5.7%	7.1%	-24.6%
22	San Juan & Truxel	12.2%	9.4%	23.0%
23	Stockton & Broadway	9.8%	12.3%	-25.5%
24	Stockton & Fruitridge	18.2%	24.1%	-32.4%
25	Stockton & Lemon Hill	23.1%	36.4%	-57.6%

As can be seen by inspecting Table 1A, there is both overestimation and under-estimation of the Asian Traffic by census data. Census data underestimate Asian motorists at 15 locations and overestimate it at 10.   Table 1B provides the same comparison for Black motorists.

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[17] The comparative disparity is computed by subtracting the benchmark percentage from the census percentage of the minority group and dividing by the census percentage. Therefore, a negative comparative disparity means that the minority is underrepresented by census data when compared to traffic.

Table 1B. Comparison of Black Census and Observation Benchmarks at Deployed Areas Utilized in the Study.

No.	Location	Black Census	Black Benchmark	Comparative Disparity[18]
1	16th & F	8.5%	13.1%	-54.1%
2	Arden & Blumfield/Harvard	12.0%	14.2%	-18.3%
3	Arden & Challenge	9.0%	12.1%	-34.4%
4	Arden & Del Paso	10.5%	17.9%	-70.5%
5	El Camino & Evergreen	10.2%	15.8%	-54.9%
6	El Camino & Truxel	17.5%	18.6%	-6.3%
7	Florin & 24th	26.3%	26.8%	-1.9%
8	Florin & Franklin	20.8%	26.8%	-28.8%
9	Florin & Freeport	22.5%	26.5%	-17.8%
10	Folsom/Julliard & Florin Perkins	6.4%	11.7%	-82.8%
11	Folsom/Power Inn & Howe	6.4%	11.5%	-79.7%
12	Fruitridge & Florin Perkins	4.5%	10.4%	-131.1%
13	Fruitridge & Franklin	13.7%	15.7%	-14.6%
14	Fruitridge & Freeport	3.3%	15.5%	-369.7%
15	Mack & Franklin	25.1%	30.9%	-23.1%
16	Mack & Valley Hi/LaMancha	25.5%	29.8%	-16.9%
17	Marysville & Arcade	14.3%	26.7%	-86.7%
18	Marysville & Grand	22.9%	25.9%	-13.1%
19	Meadowview & 24th	25.5%	30.1%	-18.0%
20	Northgate & San Juan/Silver Eagle	11.9%	22.0%	-84.9%
21	Northgate & W. El Camino	9.5%	17.6%	-85.3%
22	San Juan & Truxel	20.5%	24.1%	-17.6%
23	Stockton & Broadway	18.1%	23.4%	-29.3%
24	Stockton & Fruitridge	11.2%	14.4%	-28.6%
25	Stockton & Lemon Hill	9.1%	15.9%	-74.7%

As can be seen by inspecting Table 1B, at every location census data underestimate Black motorists. While some of these underrepresentations are relatively small (Florin and 24th; El Camino & Truxel), the largest of them approaches a factor of 4. Using census data to estimate Black motorists would cause police stops to appear excessive for stopping Black motorists even if there actually was no excessive stopping of Black motorists. Generally speaking, it is unusual to see a minority group under-

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[18] The comparative disparity is computed by subtracting the benchmark percentage from the census percentage of the minority group and dividing by the census percentage. Therefore, a negative comparative disparity means that the minority is underrepresented by census data when compared to traffic.

represented in every location assessed. There are several possible reasons for this under-

representation. It is possible that the Black residents of Sacramento drive more than their

counterparts of other race/ethnicities or that there a fairly sizeable number of Black

nonresidents who commute into Sacramento on a fairly regularly basis. Additionally it is

possible that police are active in locations where more Black motorists drive than reside.

With the data presently available to us, it is not possible to eliminate any of these

possibilities. However, analysis of the random locations will possibly help eliminate one

or more of these explanations. Table 1C provides a comparison of census and benchmark

data for Hispanic motorists.

Table 1C. Comparison of Hispanic Census and Observation Benchmarks at Deployed Areas Utilized in the Study.

No.	Location	Hispanic Census	Hispanic Benchmark	Comparative Disparity[19]
1	16th & F	26.8%	13.5%	49.6%
2	Arden & Blumfield/Harvard	26.8%	16.4%	38.8%
3	Arden & Challenge	17.3%	12.0%	30.6%
4	Arden & Del Paso	25.1%	21.0%	16.3%
5	El Camino & Evergreen	26.3%	23.3%	11.4%
6	El Camino & Truxel	22.4%	23.5%	- 3.9%
7	Florin & 24th	22.6%	27.5%	-21.7%
8	Florin & Franklin	34.8%	22.4%	35.6%
9	Florin & Freeport	17.3%	18.0%	- 4.9%
10	Folsom/Julliard & Florin Perkins	11.7%	15.8%	-35.0%
11	Folsom/Power Inn & Howe	11.7%	14.7%	-25.6%
12	Fruitridge & Florin Perkins	14.2%	22.0%	-54.9%
13	Fruitridge & Franklin	34.8%	34.3%	1.4%
14	Fruitridge & Freeport	14.4%	17.9%	-24.3%
15	Mack & Franklin	21.5%	19.6%	8.8%
16	Mack & Valley Hi/LaMancha	27.0%	23.0%	14.8%
17	Marysville & Arcade	19.7%	19.4%	1.5%
18	Marysville & Grand	15.3%	18.4%	-20.3%
19	Meadowview & 24th	22.2%	25.7%	-15.8%
20	Northgate & San Juan/Silver Eagle	37.1%	29.3%	21.0%
21	Northgate & W. El Camino	39.8%	34.9%	13.2%
22	San Juan & Truxel	23.7%	23.4%	1.2%
23	Stockton & Broadway	20.5%	19.7%	3.9%
24	Stockton & Fruitridge	29.6%	28.9%	2.4%
25	Stockton & Lemon Hill	28.3%	23.7%	16.3%

The picture with regard to Hispanic motorists is similar to that with Asians; there is both over and underrepresentation. There are 9 locations where Hispanic motorists are underrepresented by census data and 16 where they are overrepresented.

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[19] The comparative disparity is computed by subtracting the benchmark percentage from the census percentage of the minority group and dividing by the census percentage. Therefore, a negative comparative disparity means that the minority is underrepresented by census data when compared to traffic.

In addition to the deployed locations, there were also 35 locations that were

selected randomly for the city wide analysis. Of these, there were 30 new ones and 5 that

coincided with the deployed analysis. These new locations are reported in Tables 2 A-C.

Table 2A. Comparison of Asian Census and Observation Benchmarks at Random Areas Utilized in the Study.

No.	Location	Asian Census	Asian Benchmark	Comparative Disparity
1	27th & 57th	31.5%	19.2%	39.0%
2	29th & E	4.9%	5.4%	-10.2%
3	51st & Folsom	3.5%	5.2%	-48.6%
4	5th & Broadway	31.2%	17.4%	44.2%
5	5th & Capitol	9.6%	12.0%	-25.0%
6	Bridgeford & Edmonton	12.3%	6.3%	48.8%
7	Broadway & 53rd	5.5%	12.2%	-121.8%
8	Broadway & MLK	11.4%	10.3%	9.6%
9	Bruceville & Calvine	22.8%	20.0%	12.3%
10	Bruceville & Timberlake	18.5%	20.5%	-10.8%
11	Del Paso & Baxter/Barstow	4.7%	6.2%	-31.9%
12	Folsom & Wisseman	9.3%	8.8%	5.4%
13	Fruitridge & 24th	24.6%	19.4%	21.1%
14	Gateway Oaks & Venture Oaks	10.0%	8.6%	14.0%
15	Gateway Park & Truxel	11.4%	15.4%	-35.1%
16	Havenside & Gloria	24.7%	25.2%	-2.0%
17	Meadowview & 19th	22.1%	18.2%	17.6%
18	Meadowview & Detroit	25.4%	20.7%	18.5%
19	N. Park & Kokomo	9.3%	17.3%	-86.0%
20	Northgate & Rosin Court	8.7%	10.4%	-19.5%
21	Norwood & Eleanor	19.9%	18.7%	6.0%
22	Power Inn & Elder Creek	26.8%	19.6%	26.9%
23	Power Inn & Ramona	9.3%	12.5%	-34.4%
24	Richards & Dos Rios	10.6%	6.7%	36.8%
25	Riverside & Volz	25.4%	18.6%	26.8%
26	Seamus & Lonsdale	25.4%	19.4%	23.6%
27	Sully & Pinedale	12.0%	14.2%	-19.3%
28	Valley H & Deer Lake	33.2%	24.3%	26.8%
29	Valley Hi & Valley Green	23.9%	19.5%	18.4%
30	W. River & Barandos	8.1%	15.0%	-85.2%

Of the 30 locations benchmarked for the random analysis in 13 of them census

data, if used as a benchmark, would underrepresent the proportion of Asian motorists

driving in Sacramento. In the other 17, census data would overrepresent Asian motorists

if used as a benchmark. This compares to the 15 locations which showed under-

representation and 10 which showed overrepresentation in the deployed locations.

Table 2B. Comparison of Black Census and Observation Benchmarks at Random Areas Utilized in the Study.

No.	Location	Black Census	Black Benchmark	Comparative Disparity
1	27th & 57th	14.6%	20.8%	-42.5%
2	29th & E	7.6%	6.9%	9.2%
3	51st & Folsom	2.0%	5.4%	-170.0%
4	5th & Broadway	16.2%	20.5%	-26.5%
5	5th & Capitol	14.5%	9.8%	32.4%
6	Bridgeford & Edmonton	18.0%	23.4%	-30.0%
7	Broadway & 53rd	7.3%	17.6%	-141.1%
8	Broadway & MLK	29.4%	30.5%	-3.7%
9	Bruceville & Calvine	22.7%	24.8%	-9.3%
10	Bruceville & Timberlake	29.1%	22.1%	24.1%
11	Del Paso & Baxter/Barstow	10.5%	21.3%	-102.9%
12	Folsom & Wisseman	6.4%	10.3%	-60.9%
13	Fruitridge & 24th	3.6%	16.6%	-361.1%
14	Gateway Oaks & Venture Oaks	11.0%	6.7%	39.1%
15	Gateway Park & Truxel	4.0%	12.5%	-212.5%
16	Havenside & Gloria	11.1%	14.2%	-27.9%
17	Meadowview & 19th	27.7%	31.3%	-13.0%
18	Meadowview & Detroit	24.3%	31.5%	-29.6%
19	N. Park & Kokomo	3.8%	12.4%	-226.3%
20	Northgate & Rosin Court	14.2%	18.5%	-30.3%
21	Norwood & Eleanor	10.9%	22.2%	-103.7%
22	Power Inn & Elder Creek	9.7%	17.9%	-84.5%
23	Power Inn & Ramona	6.4%	14.5%	-126.6%
24	Richards & Dos Rios	29.3%	13.1%	55.3%
25	Riverside & Volz	7.3%	10.9%	-49.3%
26	Seamus & Lonsdale	7.3%	10.2%	-39.7%
27	Sully & Pinedale	10.8%	14.2%	-31.5%
28	Valley H & Deer Lake	26.9%	33.6%	-24.9%
29	Valley Hi & Valley Green	27.2%	29.8%	-9.6%
30	W. River & Barandos	5.2%	7.7%	-48.1%

Of the 30 locations benchmarked for the random analysis in 25 of them census data, if used as a benchmark, would underrepresent the proportion of Black motorists driving in Sacramento. This is a very similar pattern to what was shown at those locations chosen for the deployed analysis. With these data we are able to say that in a very large majority of the City of Sacramento, Black motorists are more numerous, as a percentage of total motorists, than census data would suggest. The largest of these representations approaches a factor of 4, just as was seen in the data from the deployed analysis.

Table 2C. Comparison of Hispanic Census and Observation Benchmarks at Random Areas Utilized in the Study.

No.	Location	Hispanic Census	Hispanic Benchmark	Comparative Disparity
1	27th & 57th	24.7%	42.4%	- 71.7%
2	29th & E	17.3%	12.0%	30.6%
3	51st & Folsom	7.0%	5.9%	15.7%
4	5th & Broadway	15.7%	14.1%	10.2%
5	5th & Capitol	11.4%	10.2%	10.5%
6	Bridgeford & Edmonton	23.9%	35.1%	- 48.9%
7	Broadway & 53rd	16.1%	18.8%	- 16.8%
8	Broadway & MLK	25.4%	23.5%	7.5%
9	Bruceville & Calvine	12.4%	18.9%	- 52.4%
10	Bruceville & Timberlake	22.1%	17.7%	19.9%
11	Del Paso & Baxter/Barstow	25.1%	15.1%	39.8%
12	Folsom & Wisseman	11.7%	15.7%	- 40.0%
13	Fruitridge & 24th	20.1%	25.3%	- 25.9%
14	Gateway Oaks & Venture Oaks	13.0%	9.2%	29.2%
15	Gateway Park & Truxel	6.8%	12.5%	- 83.8%
16	Havenside & Gloria	6.9%	10.3%	- 49.3%
17	Meadowview & 19th	21.9%	24.4%	- 11.4%
18	Meadowview & Detroit	23.8%	24.1%	- 1.3%
19	N. Park & Kokomo	14.9%	14.2%	4.6%
20	Northgate & Rosin Court	22.9%	25.0%	- 9.2%
21	Norwood & Eleanor	36.1%	32.6%	9.7%
22	Power Inn & Elder Creek	17.5%	22.8%	- 30.3%
23	Power Inn & Ramona	11.7%	24.0%	- 105.1%
24	Richards & Dos Rios	16.7%	13.3%	20.4%
25	Riverside & Volz	10.9%	7.9%	27.5%
26	Seamus & Lonsdale	10.9%	16.6%	- 52.3%
27	Sully & Pinedale	13.6%	25.7%	- 89.0%
28	Valley H & Deer Lake	15.3%	20.6%	- 34.6%
29	Valley Hi & Valley Green	21.6%	30.3%	- 40.3%
30	W. River & Barandos	10.0%	13.8%	- 38.0%

If census data were used as a benchmark for Hispanic motorists in 12 of the random locations, Hispanic motorists would be underrepresented while they would be over-represented at 18 of the locations. This picture is quite similar to the over and under-representation for Hispanic motorists found in the deployed locations.

It is clear that census data do not accurately measure the race/ethnicity of the traffic in Sacramento. In some instances census data overrepresents the minority group (Asian, Black, or Hispanic) and in other instances it underrepresents that traffic. Using census data makes it virtually impossible to determine whether the proportion of stops by SPD of any of the three groups is appropriate.

Post Stop Activity

After the police officer has stopped a motorist, there are a number of things that can and do occur. Most often, the motorist is apprised of why the stop was made, a citation or a warning is issued and the motorist and police officer go their separate ways. The majority of stops in Sacramento during the study period were completed in 10 minutes or less. However, there are a variety of actions the police officer can take during the stop beyond the basics we have just discussed. The officer can ask the motorist to exit the vehicle, a search of the driver, passengers or vehicle can be conducted, the vehicle can be impounded or the motorist can be arrested. The goal of a post stop activity analysis is to determine if motorists of different race/ethnicities are differentially subjected to these actions.

The analysis of post stop activities is somewhat more complex than the analysis of stops, particularly where stops in a specific location are compared to traffic in that same location. The starting point for analyzing post stop activity is the proportion of motorists of a specific race/ethnicity who were stopped by SPD. Then we must be cognizant of the number of police assigned to that area where the stop occurred and the unit to which the officer was assigned. These latter two variables are important because

more police are generally assigned to areas of the city where more police activities are

required. This can range from high traffic areas to high crime areas. Police, particularly

in high crime areas, are expected to combat that crime and one of the ways they do this is

by investigative activities including traffic stops. Investigative traffic stops are likely to

include more post stop activities in the course of the investigation. Finally, there are

more than a dozen special units in SPD. Some of these units are specifically assigned the

task of ferreting out criminal activity and officers in these units are tasked with that

activity. Officers from these units generally conduct more post stop activities than do

officers in other types of units. All of these variables need to be taken into consideration

when analyzing post stop activity.

RESULTS

This study was originally planned to be completed in late 2007 and presented to

City Council in early 2008. The plans called for data to be collected beginning in

October, 2006 and concluding at the end of September, 2007. However, there were a

number of problems that occurred during the data collection period. First, SPD was

attempting to collect data electronically for officers who had access to computers in their

patrol vehicles and on Scantron forms for the Traffic Unit and other officers who did not

have ready access to computers during their shift. Further, there were technical problems

with the software for reading the Scantron forms. Therefore, the first data compilation

was not accomplished by SPD until late June or July of 2007. Lamberth Consulting

received the first stop data in July and in consultation with SPD determined that the

compliance rate seemed to be only about 60 to 65 percent. We informed SPD that this

was simply too low a compliance rate. At that time, SPD felt that the missing data had

been collected but was either misplaced in either or both hard copy or electronic format.

SPD began a rigorous examination of all records to attempt to determine the source of the

problem and to correct it. In November of 2007, Lamberth Consulting met with SPD and

the decision was made to continue the study period until six months of data were

available with a high compliance rate. Lamberth Consulting defined an acceptable

compliance rate as above 80% and preferably above 90%. In December, 2007, SPD

began to collect data strictly in electronic format and the six month data collection period

began. The compliance rate for the six month data collection period was 96.6%.

Deployed Analysis

The heart of the deployed analysis is the comparison of the proportion of stops of each minority against the benchmark at that location. That is, the proportion of stops for each of the three minority groups of motorists is compared to the stops of each of the three groups at each of the locations that had the requisite number of stops to allow an analysis to be conducted. As indicated earlier, there were 25 locations initially selected for inclusion on the basis of number of stops in previous years. Twenty-three of these 25 had an adequate number of stops for analysis purposes. Fruitridge and Florin Perkins had only 29 stops and Arden & Blumfield/Harvard had only 57 stops recorded during the data collection phase and cannot be analyzed. However, there were 30 additional locations that were selected in the random analysis. Of these locations, 9 had an adequate number of stops for analysis and can be analyzed in addition to the 23 from the deployed analysis, for a total of 32 deployed locations that were analyzed. These locations are included as the last 9 locations in Tables 3 A, B and C which provide data from the deployed analysis.

The first of these data are found in Table 3A and provide the benchmark and stop data for Asian motorists at each of the locations.

Table 3A. Deployed Racial Analysis-Asian

No.	Location	Bench N	Bench Asian %	Stop N	Stop Asian %	Diff [20] %	Odds Ratio
1.	16th & F	1135	8.3%	363	7.4%	0.9%	0.88
2.	Arden & Blumfield/Harvard	1388	11.2%	59			
3.	Arden & Challenge	1917	12.2%	246	8.1%	4.1%	0.63
4.	Arden & Del Paso	1252	7.8%	143	5.6%	2.2%	0.70
5.	El Camino & Evergreen	2180	10.5%	345	5.2%	5.3%	0.58
6.	El Camino & Truxel	1742	10.3%	262	5.3%	5.0%	0.49
7.	Florin & 24th	1505	16.9%	418	11.5%	5.4%	0.64
8.	Florin & Franklin	1831	22.8%	175	13.7%	9.1%	0.54
9.	Florin & Freeport	1576	16.6%	242	18.2%	-1.6%	1.12
10.	Folsom/Julliard & Florin Perkins	1380	12.5%	187	3.2%	9.3%	0.23
11.	Folsom/Power Inn & Howe	1907	15.2%	153	11.1%	4.1%	0.70
12.	Fruitridge & Florin Perkins	1408	13.8%	30			
13.	Fruitridge & Franklin	1966	15.6%	209	10.5%	5.1%	0.63
14.	Fruitridge & Freeport	2475	22.3%	118	15.3%	7.0%	0.63
15.	Mack & Franklin	1447	20.5%	289	13.5%	7.0%	0.61
16.	Mack & Valley Hi/LaMancha	1714	18.4%	367	10.4%	8.0%	0.51
17.	Marysville & Arcade	1637	8.8%	214	8.4%	0.4%	0.92
18.	Marysville & Grand	1673	8.9%	278	9.4%	-0.5%	1.10
19.	Meadowview & 24th	944	20.3%	169	12.4%	7.9%	0.54
20.	Northgate & San Juan/Silver Eagle	1539	11.2%	276	6.9%	4.3%	0.59
21.	Northgate & W. El Camino	2170	7.1%	392	5.9%	1.2%	0.82
22.	San Juan & Truxel	1810	9.4%	316	6.6%	2.8%	0.88
23.	Stockton & Broadway	1321	12.3%	246	7.3%	5.0%	0.56
24.	Stockton & Fruitridge	1604	24.1%	308	9.4%	14.7%	0.33
25.	Stockton & Lemon Hill	1593	36.4%	111	14.4%	22.0%	0.29
26.	24th & Fruitridge	1461	19.4%	171	18.7%	0.7%	0.96
27.	29th & E Street	817	5.4%	203	3.9%	-2.0%	0.71
28.	5th & Broadway	668	17.4%	171	18.7%	-1.3	1.09

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[20] The difference is the percentage of the minority stopped subtracted from the percentage of the minority enumerated in the benchmark. A negative number means that there are more minorities stopped than were captured in the benchmark enumeration.

29.	5th & Capitol	693	12.0%	204	7.4%	4.6%	0.59
30.	Broadway & 53rd	688	12.2%	157	6.4%	5.8%	0.49
31.	Broadway & Martin Luther King	757	10.3%	233	4.3%	6.0%	0.39
32.	Gateway Park & Truxel	1531	15.4%	117	6.0%	9.4%	0.48
33.	Meadowview & Detroit	1462	20.7%	126	15.9%	4.8%	0.72
34.	Richards & Dos Rios	879	6.7%	113	7.1%	-0.4%	1.06

The odds ratio is best understood by filling in the ratio in the following sentence: "If you are Black (Hispanic, Asian) you are _____ times as likely to be stopped than if you are not Black." If no racial profiling were occurring, all of the ratios would be 1.0. This would mean that Blacks (or any other group) are no more likely to be stopped than non-minorities.

Determining the point at which an odds ratio that exceeds 1.0 is problematic is not an easy determination because we know that we are dealing with two data sources, benchmarking and stops that are subject to error. Further, the size of the sample must also be considered. Because of these considerations, when considering deployed analyses we have taken the position that odds ratios of 1.0-1.49 are benign. At an odds ratio of 1.5 to 1.99 we assert that there may be a problem of targeting of a group and at 2.0 and above, we advise the Police Department in question to take action.

To recapitulate, odds ratios of 1 are theoretically ideal and indicate that neither too many nor too few of the particular group being considered are being stopped. As with any distribution, we would expect some odds ratios to be above 1 and some below 1 with the average being close to 1 if no over or understopping were occurring. As a review of the data indicated, Asian drivers are not targeted by Sacramento Police officers. In fact, it is apparent that Asian drivers are stopped less often than would be expected when

compared to their numbers in traffic around the city. Of the 32 locations analyzed, only 4

are above 1, with the highest being 1.12. Twenty eight are below 1, with the lowest

being 0.23 which indicates that there is a four-fold understopping of Asian drivers at

Folsom/Julliard Florin Perkins. The weighted (by the number of stops at each location)

odds ratio is 0.67.

The second set of data for the deployed analysis is found in Table 3B. This table

details the percentage of Black motorists in the traffic and compares it to the percentage

of Black motorists stopped at each of the 32 locations. The data reveal that Black

motorists are overstopped at 31 of the 32 locations. As indicated earlier, odds ratios of 1

to 1.49 are considered to be benign, 1.5 to 1.99 indicate that there may be an issue and

odds ratios of 2.0 or more indicate an issue that should be addressed by the department.

Table 3B. Deployed Race Analysis-Black

No.	Location	Bench N	Bench Black %	Stop N	Stop Black %	Diff [21] %	Odds Ratio
1.	16th & F	1135	13.1%	363	22.6%	-9.5%	1.94
2.	Arden & Blumfield/Harvard	1388	14.2%	59			
3.	Arden & Challenge	1917	12.1%	246	18.3%	-6.2%	1.63
4.	Arden & Del Paso	1252	17.9%	142	28.9%	-11.0%	1.86
5.	El Camino & Evergreen	2180	15.8%	345	31.3%	-15.5%	2.43
6.	El Camino & Truxel	1742	18.6%	262	28.6%	-10.0%	2.43
7.	Florin & 24th	1505	26.8%	418	42.8%	-16.0%	1.87
8.	Florin & Franklin	1831	26.8%	175	42.3%	15.5%	2.00
9.	Florin & Freeport	1576	26.5%	242	38.0%	-11.5%	1.70
10.	Folsom/Julliard & Florin Perkins	1380	11.7%	187	13.9%	-2.2%	1.22
11.	Folsom/Power Inn & Howe	1907	11.5%	153	18.3%	-6.8%	1.72
12.	Fruitridge & Florin Perkins	1408	10.4%	30			
13.	Fruitridge & Franklin	1966	15.7%	209	21.1%	-5.4%	1.44
14.	Fruitridge & Freeport	2475	15.5%	118	28.8%	-13.3%	2.21
15.	Mack & Franklin	1447	30.9%	289	50.2%	-19.3%	2.25
16.	Mack & Valley Hi/LaMancha	1714	29.8%	367	49.9%	-20.1%	2.35
17.	Marysville & Arcade	1637	26.7%	214	27.6%	-0.9%	1.10
18.	Marysville & Grand	1673	25.9%	278	28.4%	-2.5%	1.13
19.	Meadowview & 24th	944	30.1%	169	51.5%	-21.4%	2.47
20.	Northgate & San Juan/Silver Eagle	1539	22.0%	276	34.1%	-12.1%	1.83
21.	Northgate & W. El Camino	2170	17.6%	392	28.8%	-11.2%	1.89
22.	San Juan & Truxel	1810	24.1%	316	31.3%	-7.2%	1.62
23.	Stockton & Broadway	1321	23.4%	246	41.9%	-18.5%	2.36
24.	Stockton & Fruitridge	1604	14.4%	308	30.5%	-16.1%	2.61
25.	Stockton & Lemon Hill	1593	15.9%	111	36.0%	-20.1%	2.98
26.	24th & Fruitridge	1461	16.6%	171	29.2%	-12.6%	2.07
27.	29th & E Street	817	6.9%	203	8.4%	-1.5%	1.24

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[21] The difference is the percentage of the minority stopped subtracted from the percentage of the minority enumerated in the benchmark. A negative number means that there are more minorities stopped than were captured in the benchmark enumeration.

28.	5th & Broadway	668	20.5%	171	29.2%	-8.7%	1.60
29.	5th & Capitol	693	9.8%	204	15.2%	-5.4%	1.65
30.	Broadway & 53rd	688	17.6%	157	32.5%	-14.9%	2.25
31.	Broadway & Martin Luther King	757	30.5%	233	51.1%	-20.6%	2.38
32.	Gateway Park & Truxel	1531	12.5%	117	35.9%	-23.4%	3.84
33.	Meadowview & Detroit	1462	31.5%	127	43.3%	-11.8%	1.66
34.	Richards & Dos Rios	879	29.3%	113	22.1%	7.2%	0.68

Of the 32 odds ratios computed, only 1 is below 1.0. Of the 31 odds ratios that are above 1, 5 are in the benign range (1.0-1.49), 12 are in "may be a problem" range (odds ratios of 1.5-1.99) and 14 are in the range that indicates that there is a problem that should be addressed by the department (odds ratios of 2.0 or above). A weighted (by number of stops at each location) average score is 1.92.

The final data set for the deployed analysis are contained in Table 3C and details the stopping of Hispanic motorists compared to the benchmarks for Hispanic motorists at the deployed locations.

Table 3C. Deployed Ethnicity Analysis-Hispanic

No.	Location	Bench N	Bench Hispanic %	Stop N	Stop Hispanic %	Diff [22] %	Odds Ratio
1.	16th & F	1135	13.5%	363	18.5%	-5.0%	1.45
2.	Arden & Blumfield/Harvard	1388	16.4%	59			
3.	Arden & Challenge	1917	12.0%	246	18.3%	-6.3%	1.64
4.	Arden & Del Paso	1252	21.0%	142	14.8%	6.2%	0.65
5.	El Camino & Evergreen	2180	23.3%	345	23.8%	-0.5%	1.03
6.	El Camino & Truxel	1742	23.5%	262	22.1%	1.4%	0.92
7.	Florin & 24th	1505	27.5%	418	23.0%	4.5%	0.79
8.	Florin & Franklin	1831	22.4%	175	23.4%	-1.0%	1.05
9.	Florin & Freeport	1576	18.0%	242	20.2%	-2.2%	1.15
10.	Folsom/Julliard & Florin Perkins	1380	15.8%	187	15.5%	0.3%	0.98
11.	Folsom/Power Inn & Howe	1907	14.7%	153	10.5%	4.2%	0.68
12.	Fruitridge & Florin Perkins	1408	22.0%	30			
13.	Fruitridge & Franklin	1966	34.3%	209	38.8%	-4.5%	1.31
14.	Fruitridge & Freeport	2475	17.9%	118	20.3%	-2.4%	1.17
15.	Mack & Franklin	1447	19.6%	289	18.3%	1.3%	0.92
16.	Mack & Valley Hi/LaMancha	1714	23.0%	367	22.3%	0.7%	0.96
17.	Marysville & Arcade	1637	19.4%	214	15.9%	3.5%	0.79
18.	Marysville & Grand	1673	18.4%	278	17.3%	1.1%	0.93
19.	Meadowview & 24th	944	25.7%	169	23.1%	2.6%	0.87
20.	Northgate & San Juan/Silver Eagle	1539	29.3%	276	32.2%	-3.0%	1.15
21.	Northgate & W. El Camino	2170	34.9%	392	34.9%	0.0%	1.00
22.	San Juan & Truxel	1810	23.4%	316	25.0%	-1.6%	1.11
23.	Stockton & Broadway	1321	19.7%	246	22.0%	-2.3%	1.15
24.	Stockton & Fruitridge	1604	28.9%	308	29.9%	-1.0%	1.05
25.	Stockton & Lemon Hill	1593	23.7%	111	20.7%	3.0%	0.84
26.	24th & Fruitridge	1461	25.3%	171	18.1%	7.2%	0.65
27.	29th & E Street	817	13.3%	203	13.3%	0.0%	1.00
28.	5th & Broadway	668	14.1%	171	18.1%	-4.0%	1.35

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[22] The difference is the percentage of the minority stopped subtracted from the percentage of the minority enumerated in the benchmark. A negative number means that there are fewer minorities stopped than were captured in the benchmark enumeration.

29.	5th & Capitol	693	10.2%	204	17.6%	-7.4%	1.88
30.	Broadway & 53rd	688	18.8%	157	14.0%	4.8%	0.71
31.	Broadway & Martin Luther King	757	23.5%	233	20.6%	2.9%	0.84
32.	Gateway Park & Truxel	1531	12.5%	117	14.5%	-2.0%	1.19
33.	Meadowview & Detroit	1462	24.1%	126	19.8%	4.3%	0.78
34.	Richards & Dos Rios	879	13.3%	113	21.2%	-7.9%	1.75

Fifteen of the 32 odds ratios were less than 1, 2 were exactly 1, 12 were between 1 and 1.5 and 3 were between 1.5 and 2.0. Overall, the weighted (on the basis of stops at each of the 32 locations) odds ratio is 1.06. This indicates that there is no evidence of targeting of Hispanic motorists at the 32 deployed locations. While there is no evidence of systemic targeting of Hispanics, the odds ratios at 5th & Capitol and Richards & Dos Rios are sufficiently high that the Sacramento Police Department should consider monitoring stops of Hispanics at these locations.

Random Analysis

The second analysis that will be reported is the one that has approximately 10% of the polygons in the city randomly selected to serve as a sample from which generalizations can be made to the entire city. The selection of the random polygons has been detailed earlier in this report and will not be repeated here. However, the logic of the analysis is that when small discrete units of the city are selected randomly, the results can be applied to the overall data for the city. The one caveat that must be considered and accounted for is the proportion of stops that occurred in each part of the city. Therefore, after randomly selecting 35 polygons in the city, the polygons were benchmarked in the same manner as the deployed locations. Then the locations were

grouped by district and weighted by the proportion of the total stops recorded in that

district. The weighted benchmarks for each racial/ethnic group are:

Asian   14.5%

Black   16.3%

Hispanic   17.4%

White   48.0%

These benchmarks can then be compared to the stop rates for each of the

racial/ethnic groups citywide. That comparison is found in Table 4.

Table 4. Citywide Benchmark and Stop Percentages by Race/Ethnicity and Odds Ratios.

Race/Ethnicity	Benchmark Percentage	Stop Percentage	Odds Ratio
Asian	14.5%	9.6%	0.62
Black	16.3%	29.1%	2.11
Hispanic	17.4%	20.8%	1.25
White	48.0%	35.1%	0.58
Other/Unknown		5.4%	

It is clear from the random analysis that Blacks are overstopped. The magnitude

of this disparity, 2.11 is slightly higher than the disparity that was revealed in the

deployed analysis, 1.92. This is not surprising, as the deployed analysis and the random

analysis considered different stops by the Police Department. That is, while the deployed

analysis looked at the locations in the city that had the most stops, the random analysis

considers all of them. This similarity of odds ratios between two different sets of data

and two methodologies add support to both[23].

        With regard to Hispanic motorists, there is also reasonably close correspondence

between the odds ratios for the deployed and the random analysis. Neither of these odds

ratios suggests systemic targeting of Hispanics by the Sacramento Police Department.

Recall that odds ratios between 1.0 and 1.49 are considered to be benign.

        The final two race/ethnicities, Asians and Whites are understopped relative to

their presence in the traffic.

Special Units

        The Sacramento Police Department has 15 Special Units that have a variety of

assignments. These units include Mounted, Bike, SWAT, Air, Marine, Rail, K 9, ABC,

Drug Enforcement, Gangs and Probation Enforcement Officers. The special units that

made at least one percent of the traffic stops during the study period were Traffic, POP,

DUI and School Resource officers. Some of these officers are tasked with carrying out

traffic stops in looking for specific suspects during the course of their duties. Probably

the group most utilized in this way is the POP unit which regularly is assigned to seek out

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[23] During consultations with SPD concerning the overstopping of Black motorists, it was suggested that officers had not properly indicated that they were responding to independent information when they made a number of stops, even though the stop data form called for all stops made because of such information to be so recorded. This independent information primarily came in two general forms, Information Bulletins (IB's) and Crime Meeting assignments.
In an effort to determine the effect upon the stopping of Black motorists, each IB with suspect racial/ethnicity information and each assignment made during crime meetings was carefully assessed to ascertain whether it pertained to criminal or gang activity attributed to one or more racial or ethnic group and stops potentially associated with them were scrutinized. We found a number of stops that we could fairly deduce were in response to independent information. However, after these stops were removed from the dataset and the data reanalyzed, the odds ratio for stops of Black motorists city wide dropped to about 2.00 from 2.1. These stops explain only a very small part of the overstopping of Black motorists.

suspects who are sought for specific crimes. At times, the descriptions of suspects

contain racial/ethnic information.

The special unit that has the most impact on traffic stops is, not surprisingly, the

Traffic Unit, making about a third of the stops made during the study period. This unit is

sent all over the city with particular emphasis on locations where excess accidents occur

or traffic is highly congested. The officers in this unit are instructed to enforce traffic

laws and they do so by primarily targeting motorists who commit moving violations. The

officers in this unit use radar extensively and thus, many of their citations are for

speeding. For example, while the department as a whole stops motorists about 45% of

the time for moving violations, almost two- thirds of the Traffic Units stops are for

moving violations.

To be as accurate as possible, the task that was faced in analyzing the data for this

study was to provide as clear a picture of the Sacramento Police Department's treatment

of racial/ethnic minorities as possible. To pinpoint the unit(s) that seemed most

responsible for the overstopping of Black motorists, we provide an analysis of the Traffic

Unit, the other special Units as a group and compare them to the other officers in the

department, referred to as the General Patrol Officers. That analysis for stops of Black

motorists is contained in Table 5.

Table 5. Citywide benchmark, stops of Black motorists and odds ratios for Special Units, Traffic and General Patrol Officers.

Unit/Officers	Benchmark %	Black Stop %	Odds Ratio
Special Units	16.3	31.0	2.3
Traffic	16.3	19.15	1.2
General Patrol	16.3	34.4	2.7
Total	16.3	29.1	2.11

Special Units are generally expected to go into crime areas to search out criminals in response to information gathered by SPD. It is not surprising that their stops of Black motorists are elevated over what the traffic shows because they respond quite often to Information Bulletins (IBs) and other suspect information provided to SPD. In fact, 58% of the IBs issued during the study period that had suspect racial/ethnic information specified Black suspects. Nor would we expect the Traffic Unit to be far away from the traffic benchmark for stops of Black motorists, given that the mandate for this unit is to patrol areas where accidents occur or traffic is dangerous and to stop and/or cite any motorist seen violating a law. The General Road Patrol officers have much more discretion in their duties and, as has been seen in other jurisdictions, the more discretion a unit has, the more likely it is that minorities will be targeted[24].

This analysis suggests that the General Patrol officers are driving the over-stopping of Black motorists. As an example, the General Patrol officers made approximately 54% of the traffic stops made by SPD during the study period. However, they stopped approximately 63.7% of the Black motorists stopped.

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[24] *State v. Pedro Soto*, A734A. 2d 350 (N.J. Super. Ct. Law Div. 1996).

Moving versus Equipment Violations

There has been a good deal of discussion in the racial profiling literature concerning police use of stops for equipment violations in targeting minority motorists. At several times during Lamberth Consulting's meetings with the CRPC, we were asked if we would be able to assess whether equipment violations were being utilized to target minority motorists. Unfortunately, while we can report stops for moving and equipment violations by race/ethnicity, the present study did not call for establishing a benchmark for these issues. To accurately assess whether equipment violations are being used to target minority motorists, the benchmarks collected would have to measure vehicles with equipment violations by race. This is a difficult and expensive task. The reason for this is that vehicles would have to be randomly selected in the traffic stream and then observed for a period of time that would allow for the observation of all major equipment violations. That is, a vehicle would have to be selected and then followed for a period of time to assess equipment violations as well as the race/ethnicity of the driver. That type of benchmarking was not part of the contract Lamberth Consulting was retained to complete.

There is another confound in assessing police stops for equipment violations. Motorists of a lower socio-economic status are more likely to be driving older vehicles that have more equipment violations simply because the vehicle is older than most other vehicles on the roadways. To the extent that socio-economic and minority status are correlated, any differences in stops for equipment violations by race/ethnicity are difficult or impossible to interpret.

With these caveats, we present the following data.

Table 6. Percentage of Stops for Moving and Equipment Violations by Race/Ethnicity

Violation	Asians	Blacks	Hispanic	White
Moving	51.8%	36.8%	44.2%	50.4%
Equipment	44.6%	58.4%	50.9%	46.3%

Asian and White drivers are stopped more often for moving violations while Black and Hispanic motorists are stopped more often for equipment violations. However, as stated above, these differences are impossible to interpret without benchmarks.

Egregious Violators

It has been suggested by Lange[25] and others that the overstopping of Black motorists is because they speed more egregiously than do other motorists. Lange, et al. defined egregious speeding as exceeding the speed limit by 15 or more miles per hour. To investigate this possibility SPD and Lamberth Consulting agreed to include a study of the speeding behavior by race/ethnicity of Sacramento motorists. If Black motorists or any other race/ethnicity are more egregious speeders, then this could potentially explain any overstopping of that group by police.

Four locations were selected for the monitoring of egregious violators study. The four were chosen in consultation with representatives of the Traffic Division of SPD and with the Chair of the Citizen's Racial Profiling Commission. Because of traffic flow, it was decided to benchmark and monitor egregious violators going in different directions

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[25] Lange, J. E. (2005) Testing the Racial Profiling Hypothesis for Seemingly Disparate Traffic Stops on the New Jersey Turnpike. Justice Quarterly, 22, 193-213.

in the morning and afternoon sessions. The four locations and the time and directions for

the monitoring were:

       Northgate & north of Hagin--North on Northgate AM & South on Northgate PM

       Florin & Cromwell—East on Florin AM & West on Florin PM

       Stockton & Parker—North on Stockton AM & South on Stockton PM

       N. 12th & N. C—As 12th is a one way street, AM & PM were both Southbound

       The four locations were benchmarked on 8 different days and times of day during

the time period of 7:00 AM and 5:00 PM, Monday through Friday. The reason for the

time limitation was the necessity to do the benchmarking in daylight hours. The reason

for the weekday limitation was that these are the days that the Traffic Officers routinely

patrol. The monitoring took place between January 30 and February 9, 2007. The

benchmarking and monitoring for egregious violators was carried out simultaneously.

       There was one traffic officer and two surveyors on the team. One surveyor was

responsible for benchmarking the location by spending the time covering the roadway

lane by lane. That is, if there were two lanes in the direction that the surveying for

egregious violators was being done, the benchmarking was done for half of the time on

one lane and half of the time on the other lane, etc.

       The surveyor working with the traffic officer was responsible for randomly

selecting a vehicle for the officer to target. This was done in the following manner:

once the officer and the surveyor were in position, the surveyor started a stop watch and

waited 10 seconds before selecting the first vehicle seen that was far enough away from

the Lidar gun to allow the officer to determine speed accurately. As soon as the vehicle

was clocked and the surveyor finished recording the information on the data sheet, the

surveyor started his/her stop watch and picked the first vehicle seen at the end of 10

seconds. The officer targeted that vehicle and clocked it with the Lidar gun. The process

was repeated until the allotted time for surveying that location was up. Where there was

more than one lane in the direction being surveyed, the surveyor was instructed to

provide relatively equal coverage of all lanes.

There were 7609 vehicles viewed by the benchmark observer who successfully

classified 7397 (97.2%) with regard to race/ethnicity. These were fairly evenly divided

among the locations. As noted above, there was an attempt to select vehicles from all

lanes during the benchmarking. The one location where there were not relatively equal

representations in the lanes was at N. 12th & N. C, where there are four lanes. The lanes

furthest from the Officer were less well represented. This occurred because of the

difficulty in having an unobstructed view across four traffic lanes.

There were 3184 vehicles that were clocked for speed, of which 3040 (95.5%)

were racially/ethnically identified with respect to the driver. Of these 344 (10.8%) were

exceeding the speed limit by 15 or more mph. While this is a relatively small group of

people, it is a large enough group that it could influence the ethnic/racial makeup of those

stopped by the police.

The rationale behind doing this portion of the assessment was to determine if

minority drivers were driving faster than non-minority drivers, which in turn could

account for excess stops of minorities, if they occurred. Lange, et al. found that Black

motorists were almost twice as likely to be in the group that egregiously sped on the New

Jersey Turnpike when the speed limit was 65, but not when it was 55.

Table 7 provides the locations, benchmark and egregious violator percentages for each of

the four locations.

Table 7. Benchmark and Egregious Speeding Data for Four Race/Ethnicity Groups. Egregious speeding is defined at or above 15 mph above the speed limit.

Race/Ethnicity	Bench-mark N	Bench-mark %	Egregious Speeders N	Egregious Speeders %	Odds Ratio
Asian	1003	13.6%	23	7.0%	0.5
Black	1357	18.3%	70	21.4%	1.2
Hispanic	1508	20.4%	60	18.3%	0.9
White	3526	47.7%	174	53.2%	1.3

It is clear from Table 7 that minorities are not more numerous in the group that

egregiously speeds. If anything, White drivers are slightly more numerous in the

egregious speeders category. However, none of the differences are large and the best

approach is to indicate that with the exception of Asians, the other three race/ethnicity

groups are about equally represented in the egregious speeder category.

Post Stop Analyses

Following any stop by police there are different actions that can be taken from

warning a motorists about his/her behavior to arresting that motorists. Part of the study

of racial profiling has been to analyze the actions of police following a stop in an attempt

to determine if minority motorists are treated differently than are non-minority motorists.

The present study has several variables to consider in determining whether motorists of different race/ethnicities are treated differently following the stop.

      The variables that will be considered for this part of the analysis are:

1. Was a citation issued?

2. Was the driver/passenger(s) asked to exit the vehicle?

3. Were minority motorists detained longer than were non-minority motorists?

4. Was there a difference in the rate at which motorists of different race/ethnicities were searched?

5. Were minority motorists arrested at a higher rate than non-minority motorists?

As will be discussed in each section, these questions are not amenable to a simple solution, as a number of variables must be considered in answering each one.

Citations

      As we have seen, motorists of different race/ethnicities were stopped at differential rates during the time of the study, with Black motorists being stopped at slightly more than twice the rate as would be expected based upon their presence in the traveling population. The question that we would wish to raise here is how often motorists of different race/ethnicities were cited after being stopped.

      Slightly less than two thirds of motorists stopped are cited by Sacramento Police officers. When the proportion of those cited by race is considered, the breakdown by race/ethnicity for citations compared to stops is as follows:

Table 8. Percentages of Motorists by Race/Ethnicity who are Stopped and Cited.

	Asian	Black	Hispanic	White
% Stopped	9.6	29.1	20.8	35.1
% Cited	9.7	25.8	21.5	36.5

As can be seen by the percentages in Table 8, Black motorists are cited slightly less often than they are stopped, while Asian, Hispanic and White motorists are cited at a slightly higher rate than they are stopped. However, none of these citation rates indicate differential treatment by the Sacramento Police Department.

Exit Vehicle

When a motorist is stopped by a police officer, the motorist may be asked to exit the vehicle during the stop. This happens in approximately 19 % of the stops that are made. The reasons for asking a motorist to exit the vehicle are varied and range from the officer wanting to separate the driver from his/her passengers to a feeling that the officer's safety may be at risk. Whatever the reason, it is important to determine if there are differential rates of asking motorists to exit the vehicle during the stop.

As was discussed earlier, the determination of a benchmark and the type of analysis to conduct when considering requests to exit the vehicle is more complex than the benchmark and analysis that has been conducted in assessing stops. This is because there are more variables that can influence a police officer to request a motorist to exit the vehicle than there were in the situation where the race/ethnicity of the traffic stream is compared to the race/ethnicity of the stops. Variables that must be taken into account when we consider requests to exit the vehicle are the proportion of stops in the area, the

number of police officers assigned to the area and the units to which the officers are

assigned. Table 9 presents the data for exiting the vehicle by race/ethnicity.

Table 9. Percentage of Motorists by Race/Ethnicity Asked to Exit the Vehicle.

	Asian	Black	Hispanic	White
% Stopped	9.6%	29.1%	20.8%	35.1%
% Exit	6.5%	38.6%	29.5%	23.7%

It is apparent from Table 9 that Black and Hispanic motorists are asked to exit

their vehicles more often than they are stopped and Asian and White motorists are asked

to exit the vehicle less often than they are stopped. The question that our analysis must

answer is whether these differences are a function of the area in the city where the stops

occurred, the number of police officers in that area or the units that the officers who

asked the motorist to exit the vehicle were assigned. When the data are analyzed, we find

that both Black and Hispanic motorists are asked to exit the vehicle at a rate higher than

would be expected. The odds ratio for Black motorists asked to exit the vehicle is 1.6,

while it is 1.9 for Hispanic motorists[26].

Detention Time

Analyses of stop data to determine whether minority groups are treated differently

often look at detention time to determine whether differences exist between different

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[26] There is a subtle difference between these two odds ratios that is important. Recall that Black motorists
were stopped at a higher rate than would be expected given their presence in the traffic but there was little
or no discrepancy in the stopping of Hispanic motorists. As the starting point for analyzing post stop
activity is the percentage of motorists of that race/ethnicity who are stopped, discrepancies in post stop
activity for overstopped groups is potentially more serious than the same level of post stop activity for
groups that are not overstopped.

groups. The total time that it took for each race/ethnicity to be told that they were free to

go following the stop was collected by the Sacramento Police Department. The mean

(average) detention times by race/ethnicity are as follows:

Table 10. Mean Detention Times by Race/Ethnicity.

Race/Ethnicity	Mean Detention Times	Standard Deviation
Asian	11.61 minutes	9.52
Black	14.36 minutes	11.52
Hispanic	14.23 minutes	12.17
White	11.99 minutes	9.73

Clearly, detention times for all four race ethnicities are quite close. The

difference between the shortest time (Asians) and the longest (Blacks) is 2.75 minutes.

When these data are subjected to statistical analysis it is clear that these times do not

statistically differ from each other. To be more explicit, the 95% confidence interval for

these four means is 10.74 through 15.35 and all 4 of the means are within that interval.

Searches

When searches are considered, it is important to differentiate among types of

searches. Some searches are mandatory for police officers and the officer has little or no

discretion as to search the motorist or vehicle. The two that are mandatory are Tow

Inventory and Incident to Arrest. That is, when the officer is required to tow the vehicle

because the motorists has no valid registration or driver's license a Tow Inventory search

is mandatory. Likewise, when an individual is arrested, the officer has no discretion in

whether the individual is to be searched. Because racial profiling is basically a practice

which is based on officer discretionary activities, mandatory searches tell us little about whether the practice is occurring. Therefore, the searches that are closely scrutinized in this report are three other types of searches where officers do have discretion. These three are Terry Cursory, Probable Cause and Parole/Probation searches[27].

It has been argued that the benchmark for searches is the percentage of a specific race/ethnicity that is stopped. This simple approach is misleading. Searches are more likely to occur if the stops that preceded them occurred in a part of the City that had more police officers patrolling them. Sacramento, as do most police departments, assigns more officers to areas where more crime, particularly violent crime occurs. Therefore, to begin with, the district in which the search occurred must be considered.

The second variable to consider is the type of unit to which the officer making the search is assigned. Sacramento PD, similar to most police departments has units whose officers are primarily assigned to covering areas where crimes occur and helping to solve those crimes. Those officers, as they have an investigative focus, are more likely to search motorists that they have stopped than General Patrol Officers. Therefore, the unit the officer is assigned to must also be considered.

The starting point for the benchmark for two of the discretionary searches, Terry Cursory and Probable Cause begins with the percentage of motorists of that race who are stopped. The benchmark for the other type of search, parole/probation begins with the percentage of individuals of different race/ethnicities who are on parole

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[27] In the interest of being complete in providing data, the percentages by race of those searched for Tow Inventory and Incident to Arrest are as follows:

Type of Search	Asian	Black	Hispanic	White
Incident to Arrest	7.6%	33.4%	30.7%	26.7%
Tow Inventory	3.2%	30.0%	45.2%	19.1%

probation[28]. The data for the three types of searches is summarized in Table 11.

Table 11. Percentages of Three Search Types by Race/Ethnicity.

Type of Activity	Asian	Black	Hispanic	White
% Stopped	9.6	29.1	20.8	35.1
Terry Cursory	6.7	29.4	36.2	26.3
Probable Cause	5.1	42.8	30.9	18.9
Parole Probation	5.3	50.8	19.0	23.9

For Terry Cursory searches, which are a pat down of the individual, often done when the officer fears for his/her safety, it is apparent that Asian and White motorists are searched at a rate that is less than their rate of being stopped, while Black motorists are searched at the rate they are stopped. Hispanic motorists are searched at a higher rate than they are stopped. The odds ratio for Hispanic motorists is 2.37.

With regard to Probable Cause searches, again Asian and White motorists are searched at a rate which is below the rate at which they are stopped. Both Black and

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[28] The Vehicle Stop Data Form had two questions concerning officer's asking for consent to search. The first asked if consent to search was asked and the second asked if it was granted. The vast majority of times an officer asked for consent to search it was granted (97.0%). However, there seemed to be different approaches among officers as to whether they would ask for consent for the three types of searches that we are considering. For Terry Cursory searches officers were granted consent 58.4% of the time, but 40.9% of the time officers indicated that consent to search was not applicable. For probable cause searches officers indicated that consent to search was not applicable 38.0% of the time and 49.3% of the time for parole/probation searches. Given the different strategies officers evidently took in asking for consent, the variable is not useful in our analyses.   Some departments we have worked with regularly suggest that officers ask for consent even when it is not strictly necessary to assure that the search will not be found illegal in court.

Hispanic motorists are searched at a rate that is higher than their stop rate. The odds ratio for both Black and Hispanic motorists is 1.7.

Finally, we consider Parole/Probation searches. California law allows officers to search all parolees and most probationers without citing a legal authority. That is, part of the conditions of parole and most probations in California allow these searches. Therefore, the starting point for the benchmark for these searches is not the percentage of motorists stopped by race/ethnicity, but the percentage of each racial/ethnic group that is on parole/probation. With this caveat, the analysis of Parole/Probation searches follows the same guidelines as do the other search categories. The data for this analysis is presented in Table 12.

Table 12. Parole/Probation Searches and Percentage by Race/Ethnicity of Those on Parole or Probation in Sacramento.

Type of Activity	Asian	Black	Hispanic	White
% on Parole or Probation	2.8	37.5	20.2	35.2
Parole/Probation Search	5.3	50.8	19.0	23.9

The analysis indicates that Blacks are searched more than would be expected by their presence among parolees/probationers (odds ratio 2.09) and Hispanics are searched at a slightly higher rate than would be expected, but that the odds ratio of 1.13 is not statistically significant.

Hit Rates

It has been argued that it is a legitimate law enforcement activity to overstop a

particular racial/ethnic group if that group is more likely to be carrying contraband[29].

While this argument is probably not consonant with the Constitution, it is instructive for

us to consider the rates at which motorists searched in Sacramento are carrying

contraband. These data are contained in Table 13. The searches referred to are a

combination of Terry Cursory, Probable Cause and Parole/Probation searches. The

highest hit rate is for Hispanic motorists, with White and Black motorists closely bunched

at a fraction of a percentage point below them. These percentages are not statistically

significantly different from each other, which means that for both statistical and practical

purposes they do not differ from each other.

Table 13. Hit Rates for Searches By Race/Ethnicity

Race/Eth	No. Searches	No. Hits	Hit Rate
Asian	168	37	22.0%
Black	1438	377	26.2%
Hispanic	706	193	27.3%
White	728	194	26.6%

Arrests

The final post stop action that will be discussed is arrests, which are different than

the other actions a police officer can take in both degree and complexity. There are

specific laws that govern which citizen a police officer can arrest. The officer must be

able to specify the violated law prior to making the arrest. The major problem for

analyzing such data is that the benchmark for arrests is how many motorists are violating

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[29] Knowles, et al. (2001) "Racial Bias in Motor Vehicle Searches: Theory and Evidence" Journal of Political Economy, 109, pp. 203-29

a law that would result in arrest. Unfortunately, that benchmark is unknowable primarily because those who are violating such laws are unwilling to disclose that violation. Indeed, most criminal activity takes place in secrecy. The only people that we know are violating a law that makes them subject to arrest are those that are arrested. We do not know how many other motorists stopped by SPD are violating a law for which they could be arrested who are not arrested. This could be because the police officer is not and does not become aware of the violation during the traffic stop or because the police officer becomes aware of the violation and chooses not to effectuate the arrest. The complexity of the situation has led at least one Court to refuse to consider arrests when deciding whether racial profiling was occurring[30].

Never the less, SPD arrested 1,226 motorists during the study period as a result of traffic stops. That is, 4.1% of traffic stops resulted in an arrest. If arrests by race/ethnicity are considered, it is apparent that Black (5.7%) and Hispanic (4.9%) motorists are arrested at a higher rate than are White (3.1%) motorists. Unfortunately, we cannot do more than report these arrest rates because we do not know how many motorists were violating a law that made them subject to arrest.

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[30] *State v. Pedro Soto*, A734A. 2d 350 (N.J. Super. Ct. Law Div. 1996).

CONCLUSIONS

There are disparities between the proportion of Black motorists in the traffic and the number of Black motorists stopped by SPD. These disparities occur and are of approximately the same magnitude in both the deployed analysis that measures traffic and stops at specific locations and the random analysis that measures traffic and stops citywide. The magnitude of these differences is sufficiently substantial (the odds ratio is approximately 2.0) that we conclude that SPD should address the overstopping of Black motorists. The stopping of Hispanic motorists utilizing both the deployed and random methodologies is slightly but not statistically significantly above an odds ratio of 1.0 which is where it should be if no targeting of Hispanics was occurring and calls for only minimal action by SPD to consider stops at two locations (5th & Capitol and Richards & Dos Rios) where the stops are somewhat elevated. The stops of Asian and White motorists are below what would be expected on the basis of their presence in traffic in Sacramento.

With respect to post stop activity, it is apparent that no racial/ethnic group is cited or detained at differential rates or lengths of time. The same is not true, however, when requests to exit the vehicle and searches are considered. Hispanic motorists are asked to exit their vehicles at almost twice the rate that non-Hispanics are. Black motorists are asked to exit their vehicles at about one and one half times the rate that non-Blacks motorists are. Hispanics are subjected to Terry Cursory searches at 2.37 times the rate that other motorists are patted down. Both Blacks and Hispanics are searched at 1.7 times the rate that non-Blacks and non-Hispanics are when the search authority is

probable cause. Finally, with regard to Parole/Probation searches, Blacks are searched at over twice the rate that other race/ethnicities are.

Two analyses are relevant to understanding the above data. With regard to stops, it has been claimed that Black motorists egregiously exceed the speed limit more than other race/ethnicities. An egregious violators study was conducted that indicated that with regard to egregious speeding (defined as 15 or more mph above the speed limit) there were no differences between race/ethnicities among those motorists egregiously violating speed laws.

The second analysis that bears on these data has to do with the hit rates (that is, the rate at which contraband is found when motorists are searched) for the different race/ethnicities. As with egregious speeding, there were no differences among the race/ethnicities with regard to hit rate. It has been suggested by other Police Departments/authors that Black and Hispanic motorists are stopped more often because they egregiously violate speed laws more often than other motorists and that they are searched more often because they are more likely than other motorists to be carrying contraband. Obviously both of these alleged reasons can be discounted in Sacramento. Lamberth Consulting wishes to make clear that at no time did any official of SPD indicate that they thought Black and Hispanic motorists were more egregious speeders or that they were more likely to be carrying contraband.

RECOMMENDATIONS

1. SPD should re-evaluate its Biased Based Policing Policy to assure that it

properly reflects the needs of both SPD and the community of Sacramento on the

issue.

      A. The policy should clearly state the Department's position with regard

to using race/ethnicity when making decisions about stopping or searching

citizens.

      B. Strong direction should be given to officers to adhere to the policy.

      C. Strong support from the Command Staff should be given to front line

supervisors and officers.

2. SPD's Early Warning System should be evaluated to assure that issues related

to Biased Based Policing are included in the system and that officers who are

violating policies can be identified in a timely manner and provided training

and/or counseling.

3. SPD should continue to collect data on traffic stops and post stop activity and

analyze those data at regular intervals. The benchmarks that have been developed

for this study should be usable for several more years.

4. Officers should have a refresher training course on use of the Vehicle Stop

Data Form to assure that the data being collected is as complete and systematic as

possible.

5. All front line officers should be trained on Biased Based Policing using a

curriculum that identifies and examines in depth situations that police officers

face where race/ethnicity can and cannot be used in the officers' decision making.

The curriculum should require officers to discuss among themselves and with

their trainer the decisions they would make in specific situations and whether it

would be in accord with the Department's Biased Based Policing Policy.

6. SPD should continue to work with the community with the goal being better

cooperation between the department and the community. Activities should

include:

A. Conducting a series of law enforcement/community engagement

sessions consisting of various activities, such as town hall meetings

(large scale 50-100 people) and neighborhood watch meetings (5-20

people) conducted at various locations throughout the city of

Sacramento.

B.   Conduct educational sessions targeting enhanced understanding that

law enforcement personnel and community have about themselves and

each other.

C. Continue the process of organizational transparency with the

community as it continues to address this issue.

D. Communicate progress via the engagement sessions, written

communications in multiple languages, media and PSA's.

APPENDIX

Maps of Surveyed Deployed Intersections

Traffic Intersections

1. **16th & F**

2. Arden & Blumfield/Harvard

3. Arden & Challenge

4. Arden & Del Paso

Approx. .5 miles across.

5. El Camino & Evergreen

Approx. .5 miles across.

6. El Camino & Truxel

7. Florin & 24th

8. Florin & Franklin

9. Florin & Freeport

10. Folsom/Julliard & Florin Perkins

11. Folsom/Power Inn & Howe

12. Fruitridge & Florin Perkins

13. Fruitridge & Franklin

14. Fruitridge & Freeport

Approx. .5 miles across.

15. Mack & Franklin

Approx. 1.1 miles across.

16. Mack & Valley Hi/LaMancha

Approx. 1.1 miles across.

17. Marysville & Arcade

Approx. .5 miles across.

18. Marysville & Grand

Approx. .5 miles across.

19. Meadowview & 24th

Approx. .5 miles across.
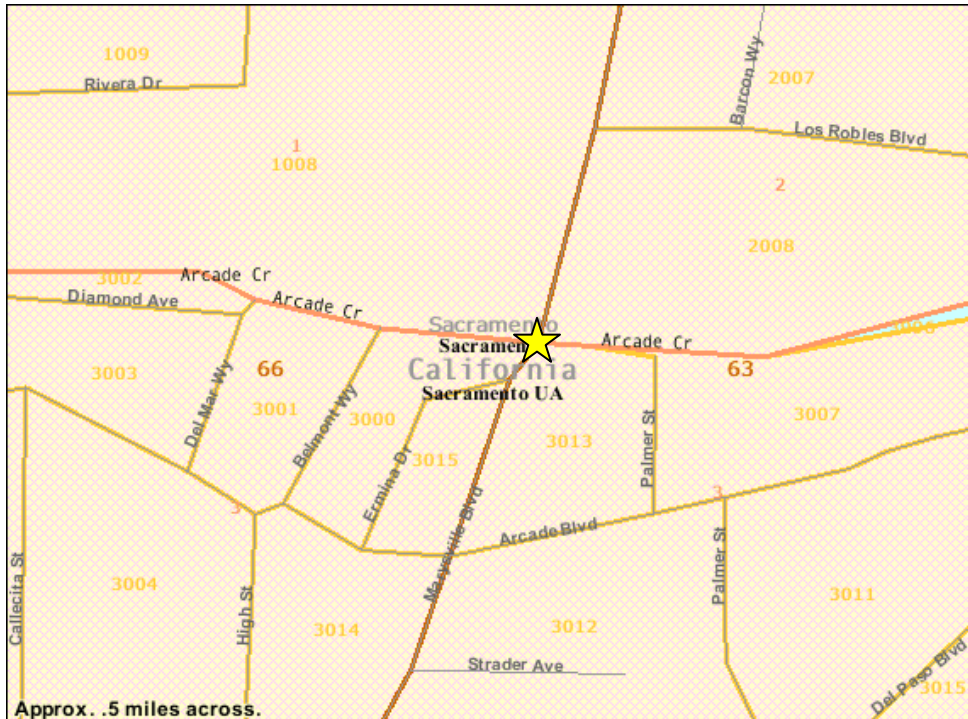
20. Northgate & San Juan/Silver Eagle

21. Northgate & W. El Camino

22. San Juan & Truxel

23. Stockton & Broadway

24. Stockton & Fruitridge
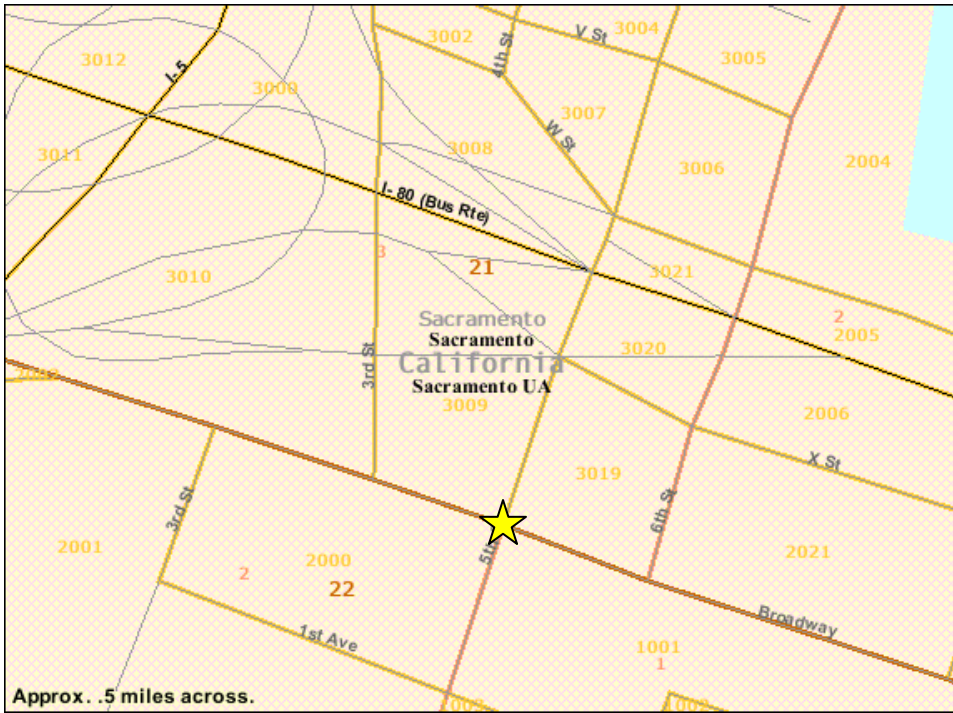

25. Stockton & Lemon Hill

26. 24ᵗʰ & Fruitridge

27. 29ᵗʰ & E Street

28. 5th & Broadway

Approx. .5 miles across.

29. 5th & Capitol

Approx. .5 miles across.

30. Broadway & 53rd

Approx. 1.1 miles across.

31. Broadway & Martin Luther King

Approx. 1.1 miles across.

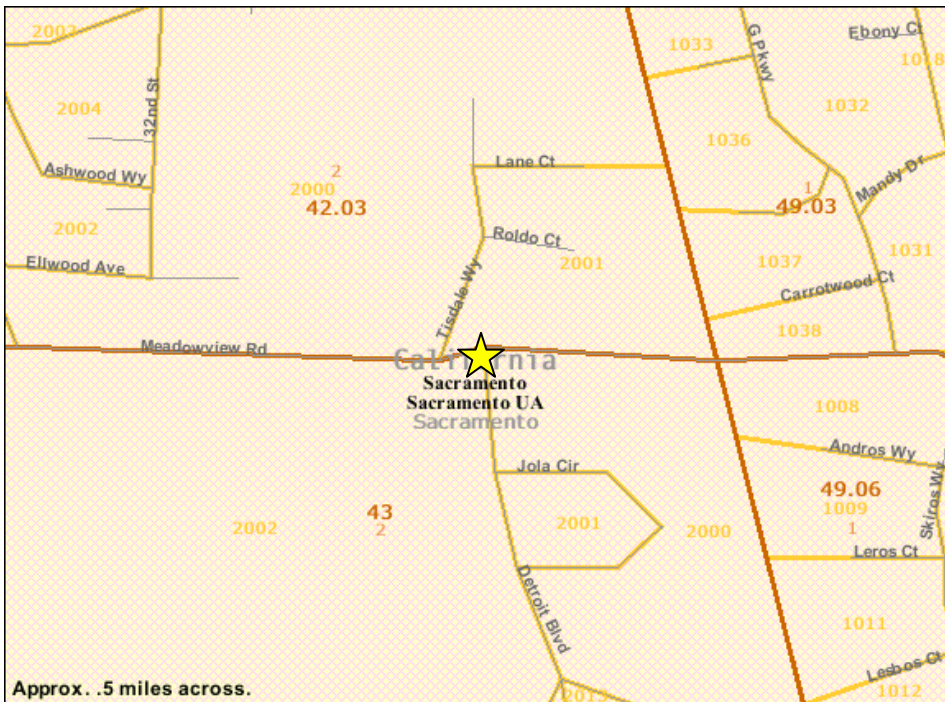## 32. Gateway Park & Truxel

33. Meadowview & Detroit

34. Richards & Dos Rios