Proposed Pedestrian and Motor Vehicle Stop Data Analyses Methodology Report

Prepared for:

City of Los Angeles

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January 2005

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Published 2005 by Analysis Group, Inc.

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ABOUT ANALYSIS GROUP, INC.

Analysis Group, Inc. provides economic, financial, and business strategy consulting to law firms, corporations, and government agencies. Our staff is experienced in all areas of economics, including employment, securities, intellectual property, antitrust, health care, energy, and commercial damages. We often work in partnership with professors from leading universities to develop state-of-the-art analyses and create a bridge between current academic thinking and real world problems.

We have experience assessing claims of race discrimination in a variety of contexts, including law enforcement activity, employment, and fair lending. Our project team members have conducted a number of analyses to determine whether racially biased policing exists in law enforcement agencies. These include studies of the New York Police Department (New York), Miami-Dade Police Department (Florida), Washington State Patrol (Washington), Spokane Police Department (Washington), and Richmond Police Department (Virginia). The academics working on this project bring special expertise to the subject of race discrimination in the context of law enforcement. Our academics have researched and published extensively in the area of racially biased policing, as well as other law enforcement issues. Their work has appeared in numerous peer-reviewed publications. They have developed innovative approaches for assessing claims of racially biased policing.

Analysis Group has also investigated race discrimination in employment practices such as compensation, recruitment, hiring, promotion, placement, testing, termination, and enforcement of disciplinary actions. These studies have addressed alleged discrimination on the basis of age, race, gender, and national origin.

With regard to fair lending, we have assessed potential race disparities in credit markets. Our experience includes developing economic and statistical models to assess whether loans are being extended to minority applicants under terms that are comparable and fair relative to non-minority applicants.

For our investigation into whether racially biased policing exists in Los Angeles, the Analysis Group project team consists of in-house and academic experts, including:

- Geoffrey P. Alpert, Ph.D., Department of Criminal Justice at the University of South Carolina;
- Elizabeth Becker, Ph.D., Managing Principal at Analysis Group;
- Alan P. Meister, Ph.D., Manager at Analysis Group;
- Michael R. Smith, Ph.D., J.D., Department of Criminal Justice at the University of South Carolina; and

- Bruce A. Strombom, Ph.D., Managing Principal at Analysis Group.

Biographies for these project members are presented in Appendix I.

Analysis Group also retained Lorie Fridell, Director of Research at the Police Executive Research Forum (PERF), to conduct a peer review of this report.[1]

[1] PERF is a national organization of police executives from the largest city, county, and state law enforcement agencies that conducts and promotes criminal justice research. Chief William Bratton of the Los Angeles Police Department is President of the Board of Directors of PERF.

EXECUTIVE SUMMARY

In late 2001, the Los Angeles Police Department (LAPD) embarked upon a project of systematically collecting information on motor vehicle and pedestrian stops made by its officers, as required by a federal consent decree. This report describes methodologies recommended by Analysis Group, Inc., an independent contractor to the City of Los Angeles, for analyzing the LAPD stop data. The purpose of this analysis is to establish a better understanding of LAPD stop practices in order to further promote effective, respectful, and non-discriminatory policing within the City.

In developing the proposed analysis methodologies, Analysis Group reviewed the academic literature on racial bias in policing, court decisions related to racial profiling, and previous analyses of stop data collected by other law enforcement agencies. In addition, Analysis Group representatives participated in ride-alongs with LAPD officers to gather data about the context in which stop and search activity occurs. Information regarding the LAPD, its officers, policing activities, and crime within the City, as well as demographic, economic, and socioeconomic data, were also reviewed.

Based upon these reviews, Analysis Group proposes three types of analyses to evaluate LAPD pedestrian and motor vehicle stop data as follows:

1. **External Benchmark Study of Pedestrian Stops**: This analysis will investigate whether, after controlling for available legitimate factors affecting stop activity, racial disparities in stop rates remains. The proposed analysis is based upon the premise that the race of persons stopped should directly reflect the race of criminal suspects in a given area. Other factors that may be considered in this analysis include direct and indirect measures of crime (911 calls, gang crimes, officer deployment, shootings at officers, vacant/abandoned buildings), measures of economic activity (sales volume and business tax registration certificates data), and demographic information (gender, age, and population density).

2. **Study of Post-Stop Activity**: This analysis will investigate whether, after controlling for available legitimate factors that may affect police decision-making, different demographic groups (race, age, and gender) are subjected to disproportionate sanctions (citations, warnings, arrests) or other burdens (searches) following a stop. Factors that may be considered in this analysis include characteristics of the encounter (time of day, day of week, and reason for stop), geographic area (911 calls, gang crimes, officer

deployment, shootings at officers, vacant/abandoned buildings), officer (race, age, gender, length of service, commendations, complaints, and uses of force), and suspect (race, age, and gender).

3. **Internal Benchmarking (Officer-to-Officer Comparisons) of Pedestrian and Motor Vehicle Stop and Post-Stop Activity**: This analysis will compare the racial composition of stops by particular officers or groups of officers, with those of all other officers in the same area during the same time period. The purpose of this analysis is to identify officer stop patterns that may warrant closer review. Factors that will be considered in this analysis include officer characteristics and assignment.

It is anticipated that each of these methodologies will provide a different perspective that will enhance the understanding of any disparities observed in stop rates or post-stop outcomes among different demographic groups. Each type of analysis proposed is supported by the available data and has been previously applied or recommended in some form, either by academic researchers or other jurisdictions.

It should be noted that statistical methods for evaluating possible race, age, and gender profiling have important limitations. The methodologies proposed by Analysis Group attempt to account for all legitimate contextual factors that affect officers' stop and post-stop activity. However, it may not be possible to fully account for all such factors within the statistical analysis. Any race, age, or gender disparities that remain after applying these methodologies should therefore be subjected to a qualitative review. Such a review will evaluate legitimate factors that cannot be adequately quantified for use in the statistical analysis.

Finally, it should be acknowledged that even the best statistical and qualitative analysis cannot assess the thoughts or intentions of individuals. The analyses proposed here are not capable of providing an assessment of discriminatory intent, because statistical analysis can never reveal the motivations underlying officers' behavior. Despite these inherent limitations, Analysis Group anticipates that the proposed analyses will yield important insights into LAPD stop activities, thereby further informing the City of Los Angeles' on-going efforts to promote effective, respectful, and non-discriminatory policing within the City.

CHAPTER 1: INTRODUCTION

Over the past several years, there has been a growing national perception that law enforcement actions are all too often based on racial stereotypes or "racial profiling." This practice of racial profiling by law enforcement is also commonly referred to as racially biased policing.[2] According to a 1999 Gallup poll, more than half of Americans believed that police engage in racial profiling.[3] This poll also showed a distinct difference between how whites and minorities view the issue. It found that 77 percent of blacks, compared to only 56 percent of whites, felt that racial profiling by law enforcement was pervasive. Other studies have found similar differences across races. For example, blacks and Hispanics who have been stopped are more likely than whites to report being ticketed, arrested, handcuffed, searched, or threatened by police.[4] A Washington Post survey found that 52 percent of African-American men believed they have been victims of racially biased policing.[5]

Within some communities in the City of Los Angeles, there has been a growing concern that some officers may engage in racially biased policing. Historically, perceptions of racially biased policing have been largely based upon personal accounts and other anecdotal evidence. As many jurisdictions have done recently, the City of Los Angeles began collecting data related to police stop activity in November 2001.

In accordance with the consent decree entered into by the City of Los Angeles and the U.S. Department of Justice (DOJ), the Los Angeles Police Department (LAPD) embarked upon a project of systematically collecting data on motor vehicle and pedestrian stops in order to establish a basis for better understanding police contacts and reviewing concerns and perceptions about potential racial profiling.[6] Under the procedures agreed to in the consent decree, the LAPD collects information on all persons stopped who are not otherwise exempt from the data collection requirements. Both officer-initiated stops and most calls for service-related stops require the completion of a Field Data Report (FDR). Events that are exempted from the need for an FDR include the following categories:

Exemptions to both vehicle and pedestrian stops:

- prostitution/narcotics task force; and
- arrest/search warrant.

[2] The phrases *racial profiling by law enforcement* and *racially biased policing* are used interchangeably in this report. The latter is the phrase commonly used in research on the subject.
[3] Decker, et al. (2001).
[4] Weitzer (2002).
[5] McMahon, et al. (2002).
[6] *United States v. City of Los Angeles*, No. 00-11769 GAF, consent decree at III.H.¶ 102 (C.D. Cal. June 15, 2001).

Exemptions to vehicle stops only:

- checkpoints/roadblocks;
- commercial vehicle inspections;
- safe-driving award stops; and
- child safety seat giveaways.

Exemptions to pedestrian stops only:

- victims/witnesses;
- unlawful assemblies;
- consensual stops (except when followed by pat-down, search, preparation of a field interview (FI) card, citation, or arrest); and
- certain calls for service (homicide, rape, robbery, assault, domestic violence, shots fired, armed suspect, kidnapping, bomb threat, child in danger, officer needs assistance, battery).

Officers collect data on stops by completing an FDR.[7] Originally, paper FDRs were filled out by officers in the field and later scanned to create an electronic database. However, it was not until scanning problems were resolved in July 2002 that complete stop data were available electronically. In July 2003, the FDR was refined in order to streamline the process of recording data and ensure their accuracy. Furthermore, in Spring 2004, the LAPD rolled out Portable Officer Data Devices (PODDS) to officers so they could collect stop data electronically.

As a result of its data collection efforts, the LAPD now has a substantial amount of raw stop data available. Because a complex array of factors may legitimately influence police stop patterns, this data must be interpreted carefully. In order to investigate whether racially biased policing exists in the City of Los Angeles and to promote effective and respectful policing, including compliance with nondiscrimination policies, Analysis Group was engaged by the City to conduct a fair and unbiased analysis of the pedestrian and motor vehicle stop data collected by the LAPD.

This report sets forth Analysis Group's proposed methodologies for conducting the analysis of these stop data. To that end, Analysis Group reviewed literature on the subject of racially biased policing, evaluated studies of racially biased policing in various jurisdictions, and conducted ride-alongs with LAPD officers. The information gained from this research serves as the foundation for Analysis Group's proposed methodologies. Specifically, this information has provided valuable

[7] *See* Appendix A for copies of the original and current LAPD FDR.

insights into the development of these methodologies and demonstrated the strengths and weaknesses of potential methodologies.

Also included in this report are recommendations regarding the current data collection protocol of the LAPD and the FDR used to collect stop data in Los Angeles.

This report is organized into six sections (Chapters 2 through 7). Chapter 2 is a review of the literature. It summarizes the research findings from published literature on racially biased policing. The literature review also includes an examination of scholarly writings, public policy reports, and legal decisions.

Chapter 3 is a jurisdictional review. It provides a review of selected studies that have analyzed stop data from other police agencies. The information provided in both the literature and jurisdictional reviews has been supplemented with interviews of professionals in the field of racially biased policing, including researchers and police personnel.

Chapter 4 presents the results of surveys conducted by Analysis Group during ride-alongs with LAPD officers. This ride-along study was conducted in order to ascertain whether officers could determine the race of suspects prior to making stops. If race cannot be determined, then it is not possible to racially profile when making stops. The ride-along study also gathered other data that provide context to stop and search activity of LAPD officers.

Chapter 5 reviews the data that may be relevant for analyzing pedestrian and motor vehicle stops in Los Angeles. This review includes determining which data are available, the characteristics of the available data, the potential usefulness of such data in our proposed analysis, the limitations of available data, and how such limitations constrain the types of analyses that can be performed and the conclusions that may be drawn from analyses. Recommendations for future data collection are also provided. Data reviewed include those collected by the LAPD and various departments of the City of Los Angeles in the normal course of business, as well as data available from other sources, such as the federal government.

Chapter 6 presents Analysis Group's proposed methodologies for analyzing motor vehicle and pedestrian stop data collected by the LAPD. These methodologies will be used in an attempt to determine whether racially biased policing exists in the City of Los Angeles and if so, to what extent. It incorporates a discussion regarding the types of analyses that may be used in order to implement these methodologies (e.g., potential analytical techniques, potential data to be included in the analyses, and time period to be analyzed).

Chapter 7 is a review of the stop data collection methods utilized by the LAPD in light of the literature review, jurisdictional reviews, ride-along study, and proposed methodologies. Also included in this chapter are recommended changes to the current stop data collection protocol. These recommendations are intended to balance the desire to maximize the value of data gathered while minimizing the resources required to collect such data.

CHAPTER 2: LITERATURE REVIEW

Research on racially biased policing is a new and evolving area of social inquiry. Although research on the stop practices of law enforcement agencies has proliferated over the last several years, few studies have appeared in scholarly outlets or peer-reviewed journals. Despite this relative lack of published, empirical scholarship on racially biased policing,[8] it is important to review the existing literature on the subject, recognizing that the body of knowledge related to stop data collection and analysis is still evolving. This chapter is designed to familiarize the reader with the subject of racially biased policing and serve as a foundation for our proposed methodologies discussed in Chapter 6. It provides history and background on racially biased policing, as well as a review of significant court cases. It also includes discussions of the major themes covered in the literature, such as data collection, police training, data auditing, types of data analyzed, standards for identifying racially biased policing, types of data analysis, types of benchmarks, and confounding factors.[9]

In this review, we document the evolving awareness of the complexity and nuance needed for accurate and reliable evaluation of data. In short, the simpler approaches adopted in early studies have been recognized as having severe shortcomings for addressing the issues raised in analyzing potential race bias in stop activity. In fact, even the more sophisticated empirical approaches have been recognized as being inadequate to deliver an unambiguous answer to the question: "Is law enforcement engaging in race profiling?" Nonetheless, the empirical approaches that have been developed have strong potential for informing us about potential racial bias in stop activity. We conclude our review with a firm belief that a serious and thoughtful evaluation of stop data can provide invaluable insights into the practices of the LAPD, even though it cannot provide a definitive conclusion regarding whether racially biased policing exists.

2.1 History and Background on Racially Biased Policing

The issue of racial profiling by law enforcement gained national attention during the 1990s, due in part to a number of high-profile court cases and heightened media coverage of the issue.[10] Statements by prominent African-Americans as well as other racial minorities brought the debate over the prevalence of profiling to the forefront of national politics.

[8] Legal scholars have written extensively on the subject of racial discrimination and racial profiling by police. However, their work typically does not include analyses of actual stop data.
[9] This literature review is a review of selected research findings on racially biased policing. *See* List of Literature and Reports Reviewed for the research reviewed (presented before the appendices at the end of this report).
[10] Trende (2000).

Some of the roots of these public perceptions can be found in the use of racial profiling as a law enforcement tool in the fledging days of the U.S. government's "war on drugs."[11] During the 1980s, the U.S. Customs service was committed to tracking down drug "mules" (anonymous couriers) that were paid a one-time fee to smuggle drugs into the country. To assist in this process, Customs developed a drug courier profile. Race was an important factor in defining this profile. Also, in 1985 the Florida Department of Highway Safety issued guidelines titled "The Common Characteristics of Drug Couriers," in which race was explicitly mentioned as a characteristic.[12] The typical profile of a mule was a "black or Latino male, aged 18-25." Over the years, the strategy of stopping someone who fit the "profile" evolved into a broader approach to law enforcement and today is often referred to as racial profiling.[13]

Closely related to the development of the first profiles was the implementation of pretextual stops – the use of minor violations as a reason to stop persons suspected of more serious violations. In 1986, the Drug Enforcement Agency (DEA) began a federally-funded highway drug interdiction program, known as Operation Pipeline.[14] This program trained officers nationwide to use minor traffic violations as a pretext to stop motorists in order to search their vehicles for drugs. Through Operation Pipeline, the drug courier profiles developed in the 1970s and 1980s were applied throughout the country.

Since this time, a body of court decisions holding many uses of race in law enforcement decisions to be unconstitutional, together with a growing public awareness of the dangers of using race in this manner, have de-legitimized racial profiling as a law enforcement practice. Many citizens and jurisdictions remain concerned that racial profiling may nevertheless be continuing in police departments throughout the country. In an effort to determine the continued impact of racial profiling, many jurisdictions have begun collecting and studying data related to police stops. A body of academic research relating to such data analyses has emerged, along with an array of jurisdictional studies. This research and these studies provide valuable context for designing methodologies for data analysis in the City of Los Angeles. Before turning to a review of this research and these studies, it is critical to have an understanding of the legal context of race profiling issues. Although many uses of race in law enforcement have been deemed unconstitutional, race may be a legitimate factor motivating a stop in some circumstances. In such circumstances, the use of race would not represent racially

[11] Buerger (2002); American Civil Liberties Union of Northern California (2002); Engel, et al. (2002).
[12] Engel, et al. (2002).
[13] Buerger (2002).
[14] American Civil Liberties Union (2002).

biased policing. Any empirical analysis of stops aimed at revealing potential race bias must therefore distinguish these legitimate uses of race from inappropriate reliance on race as a motivating factor for making stops. Thus, in order to better understand what kinds of uses of race constitute racially biased policing, we begin with a review of significant court cases relating to the use of race in stops.

2.2 Significant Court Cases

Profiling-related activities by law enforcement officers usually fall into one of three categories: (1) cases in which officers use race as the sole reason for making a stop; (2) cases in which officers use race along with other factors in making a stop; and (3) cases in which officers use race (either alone or in combination with other criteria) in contacting or investigating a person in a manner that does not amount to a "seizure" under the Fourth Amendment.[15] Stops within each of these three categories can be further subdivided as discussed below.

With respect to the first category, courts have generally held that stops based solely on a person's race or ethnic appearance are unconstitutional. For example, in *United States v. Brignoni-Ponce* (1975), the Supreme Court held that the Hispanic appearance of two men driving near the California-Mexico border did not, by itself, provide U.S. Border Patrol agents with legal grounds to make a traffic stop. Similarly, the Court held that, even if police have a previous description of a group of suspects that includes race, they may not stop such persons based on their race alone. For example, the Fourth Circuit Court of Appeals has held that a police officer did not have probable cause to stop a car containing four black persons simply because the officer was searching for a group of four black males whom an anonymous caller had described as drinking in public and acting disorderly in the vicinity of where the traffic stop occurred (*United States v. Jones*, 2001). Likewise, the Florida Court of Appeals has twice ruled that racial incongruity (i.e., a person being allegedly "out of place" in a particular area) does not offer sufficient justification for police to conduct a forcible stop. In *Lafontaine v. State of Florida* (2000), a police officer observed a white female seated in her car in a predominantly black neighborhood talking with two black men who were leaning into the car window. The officer stopped the woman because she was a white female talking with two black men in a black neighborhood known for drug activity. In suppressing the fruits from the officer's search of her purse (which revealed a crack pipe), the court held that the initial stop of the woman was not based on reasonable suspicion and thus the subsequent consent search of her purse was unconstitutional.

[15] A person is seized under the Fourth Amendment if (1) the person is physically prevented from moving freely about or (2) if a "reasonable" person under the circumstances would not feel free to leave and the person submits to police authority. (*California v. Hodari D*, 1991).

In *Phillips v. State of Florida* (2001), the court of appeals also ruled as unconstitutional the stop of a black suspect seen in the vicinity of a burglary that had occurred in a predominantly white neighborhood. The officer who conducted the stop was responding to a lookout broadcast over the police radio by another officer who had seen the suspect a few minutes earlier and who had become suspicious because the suspect was a black man walking through a white neighborhood. The court held that without other indicia of suspicion, "racial incongruity ... cannot constitute a finding of reasonable suspicion of criminal behavior."

In contrast, police may, without violating constitutional guarantees of equal protection, consider race as one physical descriptor among others when searching for a suspect whose race is known to them (*Brown v. City of Oneonta*, 2000; *Buffkins v. City of Omaha*, 1990; *United States v. Kim*, 1994).[16] For example in *Brown*, officers searching for the young black male assailant of a 75-year-old woman attempted to question all young black male students at a local university. Several persons stopped by the police sued, alleging a violation of their Fourth and Fourteenth Amendment rights. In partially upholding the district court's grant of summary judgment to the defendants, the Second Circuit Court of Appeals held that the actions of the police did not violate the Equal Protection Clause of the Fourteenth Amendment. The questioning of suspects was not based solely on race, and the plaintiffs did not sufficiently allege or prove discriminatory intent. Police in Oneonta questioned suspects based on their race, age, and gender in an attempt to locate a young, black male with a cut on his hand. These actions, according to the court, did not violate equal protection principles.

However, recognizing that some of the police-citizen encounters in *Brown* may have been non-consensual stops, the court of appeals allowed the plaintiffs' Fourth Amendment claims to move forward for trial. A non-consensual stop by police must be based, at a minimum, on reasonable suspicion (*Terry v. Ohio*, 1968). Although in making a stop "a police officer may legitimately consider race as a factor if descriptions of the perpetrator known to the officer include race," (*United States v. Waldon*, 2000, p. 604), rarely will suspect race provide sufficient legal grounds, by itself, for making a stop (*Buffkins v. City of Omaha*, 1990; *United States v. Jones*, 2001). Thus, the court's ruling allowed for the possibility that some of the plaintiffs were stopped by police without reasonable suspicion and in violation of their Fourth Amendment rights against unreasonable searches and seizures.

Despite the prohibition against using race as the sole criterion for making a stop, the Supreme Court has allowed Border Patrol agents to consider race while conducting brief inquiries at checkpoints

[16] The legal use race in police enforcement, to the extent that it is legal in some circumstances in some areas, should be considered when examining disparate stop rates.

geographically removed from the border. Thus, in *United States v. Martinez-Fuerte* (1976), the court upheld the constitutionality of such Border Patrol checkpoints even when agents used the Hispanic appearance of vehicle occupants as the primary reason for referring motorists to a secondary inspection area for further questioning. However, *Martinez-Fuerte* is limited to permanently manned Border Patrol checkpoints and does not overrule *Brignoni-Ponce* in roving traffic stop situations.

In cases in which law enforcement officers make stops based partially on race and partially on individualized indicators of suspiciousness and they do not have a previous description of a suspect that includes race, the nation's courts have split on the appropriateness of using race in the decision-making calculus.[17] Indicative of this split are several cases from the U.S. Court of Appeals.

Among the cases that have found it inappropriate to use race is *U.S. v. Montero-Camargo* (2000), a case that arose when Border Patrol agents stopped two cars because they turned around to avoid a Border Patrol checkpoint and because they were being driven by Hispanic-looking persons. The Ninth Circuit stated that the use of race as a factor in making the stops violated the Fourth Amendment. Nonetheless, the court upheld the stops because it believed that the agents had sufficient grounds, independent of race, to make the traffic stops. Although the court's statement about the impropriety of using race under the Fourth Amendment was a judicial opinion on a point that did not arise in the case, it remains an indicator of the thinking of the Ninth Circuit on this issue, which is important because Los Angeles falls within the jurisdiction of the Ninth Circuit Court of Appeals.

In contrast to *Montero-Camargo*, the leading case in which a court found that it was appropriate to consider race as an evidentiary factor is *United States v. Weaver* (1992) from the Eighth Circuit Court of Appeals. In *Weaver*, narcotics officers working a drug interdiction detail at the Kansas City airport stopped a young, "roughly-dressed" black male who had gotten off a flight from Los Angeles. The agents stopped the man partly because of his race – they had information that black street gangs were importing drugs into Kansas City from L.A. – and partly because of his suspicious behavior once he de-planed at the airport. The Eighth Circuit upheld the stop under the Fourth Amendment even though the suspect's race played a role in the officers' decision to detain him. Unlike the Ninth Circuit, the Eighth Circuit Court of Appeals did not object to the use of race as one factor among others in making a stop when police possessed information that persons of a certain racial group were trafficking in drugs at a specific location.

The constitutional question presented in *Montero-Camargo* and *Weaver* was whether suspect race or ethnicity was a permissible criterion in developing reasonable suspicion to make a stop under

[17] *See* footnote 16.

the Fourth Amendment. Other court of appeal cases have addressed the separate question of whether consideration of suspect race by police violates the Equal Protection Clause.

For example, the Sixth Circuit Court of Appeals has held that the use of race by police as one factor among others in conducting a stop may violate the purposeful discrimination prong of a two-part test for selective enforcement under the Equal Protection Clause. In *Farm Labor Organizing Committee v. Ohio State Patrol* (2002), the Sixth Circuit applied the two-part test for deciding the equal protection-based racial profiling claim of the plaintiff. This two-prong standard for deciding selective prosecution claims was first announced by the Supreme Court in *United States v. Armstrong* (1996). In *Armstrong*, the court held that a criminal defendant seeking discovery based on an allegation of selective prosecution must demonstrate that a prosecutorial policy both had a discriminatory *effect* and was motivated by a discriminatory *purpose*. According to the court's finding in *Wayte v. United States* (1985), purposeful discrimination does not require proof of racial animus but does require evidence that the decision-maker "selected or reaffirmed a particular course of action at least in part 'because of,' not merely 'in spite of,' its adverse effects upon an identifiable group" (quoting *Personnel Administrator of Massachusetts v. Feeney* [1979]). Moreover, in proving the discriminatory-effect prong of the test, the court stated that defendants (or plaintiffs in civil lawsuits) must show that similarly situated persons of another race were not prosecuted.[18]

After *Armstrong*, most lower courts began applying the two-prong selective prosecution test to claims of selective *enforcement* by police in the racial profiling context (*Anderson v. Cornejo*, 2002; *Bradley v. United States*, 2002; *Farm Labor Organizing Committee v. Ohio State Patrol*, 2002; *Flowers v. Fiore*, 2003; *United States v. Chavez*, 2002). Moreover, as discussed above, the *Armstrong* test requires racial-profiling claimants to provide evidence that they were treated differently than similarly situated persons of another race who were not stopped by the police (i.e., discriminatory effect). In order to fulfill this requirement, plaintiffs usually must resort to statistical evidence showing differences in police traffic stop rates among racial subgroups of the driving population (*Chavez v. Illinois State Police*, 2001; *United States v. Mesa-Roche*, 2003).

In *Farm Labor*, an Ohio state trooper lawfully stopped a car for a defective headlight. Noticing that the driver and his passenger were Hispanic, the officer inquired about their immigration status and ultimately confiscated their valid green cards and held the cards for a period of four days. The trooper contended that he confiscated the green cards because the two motorists indicated that they had paid for the cards, which led the trooper to believe that they were forged. In fact, the cards were valid and the

[18] *See United States v. Armstrong*, 517 U.S. at 465 (1996).

motorists were attempting to tell the trooper that they had paid the required fees necessary to obtain the residency permits.

In a subsequent lawsuit brought against the trooper and the Ohio State Patrol under 42 U.S.C. § 1983 (Civil Rights Act), the court of appeals held that the purposeful-discrimination prong of the two-part selective enforcement test requires only that a plaintiff show that a law enforcement action was taken partially because of the plaintiff's ethnicity and that the plaintiff need not show that the law enforcement officer had no race-neutral reasons for his actions. In his deposition prior to trial, the defendant trooper testified that he would not have acted as he had during the traffic stop if the two motorists had been white. Thus, under the court's interpretation of the purposeful-discrimination prong of the selective enforcement test, a factual dispute existed as to whether the trooper purposely discriminated against the plaintiffs. This factual dispute meant that the case could not be dismissed on a summary judgment motion but instead presented a question to be resolved by a jury at trial.

Unlike the Sixth Circuit in *Farm Labor*, the Seventh Circuit awarded summary judgment to the defendant officers in *Chavez v. Illinois State Police* (2001). As in *Farm Labor*, the principal claim against the Illinois state troopers in *Chavez* was an equal protection-based claim of racial profiling. The plaintiffs (one black male and one Hispanic male) alleged that they were singled out, stopped, and searched by Illinois State Police because of their race. In support of their claims, they relied on a comparison of several state police stop databases to the Illinois census (adjusted based on National Transportation Survey data), which purported to show that minorities were overrepresented among those stopped and searched.

After reviewing the inadequacy of the police stop data themselves, which were not representative of all stops and thus problematic, the court turned to the census-based benchmark and concluded that it was inadequate as a matter of law to support the plaintiffs' claims. The court noted that, in addition to being outdated (the 1990 census was used), the "census data can tell us very little about the numbers of Hispanics and African-Americans driving on Illinois interstate highways" (p. 644). The court held that the plaintiffs had failed to prove discriminatory effect under the two-prong test from *Armstrong* because the statistics upon which they based their analysis could not reliably demonstrate that similarly situated whites were not stopped and searched in the same manner as blacks and Hispanics. Even if their statistics had been adequate, though, the court also held that the plaintiffs had not met their burden of proof on the discriminatory-purpose prong of the test because purposeful discrimination in a police racial profiling case could not be proven by statistics alone. Instead, the court held that evidence of discriminatory intent required non-statistical proof, which the plaintiffs

lacked. As a result, the plaintiffs failed to prove either prong of the two-part selective enforcement test from *Armstrong* and thus lost their equal protection claim on summary judgment.

A recent decision from the District Court of Kansas serves as an excellent methodological counterpoint to *Chavez*. In *United States v. Mesa-Roche* (2003), the defendant alleged that he was stopped and searched by a Kansas deputy sheriff because he was Hispanic. He sought suppression of drug evidence found in his car on equal protection grounds. In support of his claim, he relied on a study that used traffic observations to establish a benchmark for the racial composition of the driving population on the stretch of Interstate 70 that the arresting deputy patrolled. The defendant also compared the percentage of Hispanic drivers stopped by the arresting deputy to that of his fellow deputies and to Kansas Highway Patrol troopers who patrol a nearby section of I-70. After finding significant methodological flaws with the observational study,[19] the court held that the defendant had nevertheless proven the discriminatory-effect prong of his equal protection claim through his comparison of the arresting deputy's stop percentages to those of the highway patrol. However, the court dismissed the defendant's motion to exclude the drug evidence on the ground that he had failed to prove the discriminatory-intent prong of his claim, which according to the court required a showing of bad faith beyond the statistics offered.

Applying equal protection principles to consensual encounters between police and the public, the Sixth Circuit Court of Appeals has stated that, consistent with the Fourteenth Amendment, police may not use race as the sole criterion for conducting even a consensual interview or search (*United States v. Avery*, 1997; *United States v. Travis*, 1995). However, the interviews and searches in this line of cases were ultimately upheld because the Sixth Circuit found that they were based on factors in addition to race. Thus, these cases seem to suggest that police may take race into account when deciding whom to approach and question (at least consensually) so long as they do not use race as the sole reason for their decision. In fact, the Sixth Circuit discussed this holding from *Avery* and *Travis* in the *Farm Labor* case but distinguished *Avery* and *Travis* as announcing a rule that applied only to consensual encounters between police and the public.

The Ninth Circuit has taken a different approach in consensual encounter cases under the Fourth Amendment. In *United States v. Kim* (1994), the defendant appealed his convictions of drug and firearm possession on the ground that he was subjected to an illegal, race-based stop by a DEA

[19] Among the criticisms noted by the court were (1) the observation sites were chosen by the participating agencies rather than by some neutral selection criteria, (2) the sample size was too small and covered too short a period of time, (3) no verifications were conducted of observers' ability to discern race, and (4) the reliability of race determinations across different observers (i.e., inter-rater reliability) was not adequately tested. (*United States v. Mesa-Roche*, 2003 WL 22427825 at 12).

agent. In reviewing the facts of the case, the court of appeals first held that the encounter between Kim and the DEA agent that resulted in the agent finding drugs was consensual in nature and did not involve a seizure under the Fourth Amendment. Thus, because the encounter did not violate the Fourth Amendment, the court stated that the agent's motivation for approaching the defendant was irrelevant, even if Kim's racial appearance was the motivating factor for the stop. The United States District Court for Hawaii has followed Kim and has likewise stated that a law enforcement officer's reasons for approaching a suspect are irrelevant for Fourth Amendment purposes – even if they involve racial considerations – so long as the encounter between the officer and suspect is consensual (*United States v. Matau*, 2002).

In summary, the use of race as the sole criterion for making a stop or an arrest has been deemed illegal under existing federal law[20] and court decisions. However, the nation's courts are split on whether law enforcement officers can use race as one factor among others in making a stop. Under the Fourth Amendment, some courts have permitted the use of race as a permissible criterion in developing reasonable suspicion while others have not. Under the Equal Protection Clause, most courts have applied the two-prong test for deciding claims of selective enforcement against the police and often have found plaintiffs' evidence inadequate either because they could not establish an appropriate benchmark or because they could not produce evidence of discriminatory intent. The defendant in *Mesa-Roche* solved the benchmarking problem by utilizing what was, in essence, an internal benchmark in comparing the arresting deputy's stops to those who were similarly situated – Kansas Highway Patrol troopers who worked a nearby stretch of interstate highway. However, as *Mesa-Roche* and *Chavez* demonstrate, courts have been reluctant to allow statistical evidence to be used as proof of purposeful discrimination, which is a necessary component of an equal protection-based claim in most jurisdictions.

The courts are also divided on whether police may use race as a decision-making criterion in consensual encounters between police and suspects or in cases in which police never contact a suspect. Some courts have held that under the Fourth Amendment, subjective motivation (e.g., racial animus) by officers is irrelevant, at least in encounters between officers and suspects that are consensual. Other

[20] The Fifth and Fourteenth Amendments to the U.S. Constitution prohibit governmental agents, including law enforcement officers, from discriminating against persons based upon their race, ethnicity, or national origin. In addition, Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d) prohibits any recipient of federal funds from engaging in racially discriminatory practices and allows persons to sue under the statute for damages arising from intentional discrimination (Guardians Association v. Civil Service Commission, 463 U.S. 582, (1983)). Further, the Omnibus Crime Control and Safe Streets Act of 1968 (42 U.S.C. § 3789d(c)) applies directly to law enforcement agencies that receive federal financial assistance and prohibits them from discriminating against persons based on race, religion, sex, color, or national origin. Finally, 18 U.S.C. § 242 criminally punishes anyone who, under color of law, willfully violates a person's constitutional rights or subjects any person to a differential punishment because of the person's race or national origin.

courts have held that Fourteenth Amendment equal protection principles preclude officers from considering a suspect's race, at least by itself, even when the encounter between a law enforcement officer and a suspect is consensual. Generally speaking, courts have approved of the police considering race as a physical descriptor (like height, weight, or hair color) when searching for a suspect whose race is known to them.

These complexities of the legal status of the use of race in making stops have critical implications for any empirical analysis of race bias in stop activity. It is clear that there are both legitimate and illegitimate uses of race in motivating stops. Many of the more simplistic approaches to analyzing racial bias in policing have focused on identifying simple correlations between race and stop activity. However, it is clear that these simple correlations of race with stop activity are not necessarily evidence of racially biased policing. They could be a result of appropriate law enforcement actions. A proper empirical assessment of racial bias must distinguish the use of race as a legitimate factor (i.e., a factor reflecting racial differences in suspected criminal activity) from inappropriate racial bias by officers.

It also is clear from these decisions that any determination of the inappropriate use of race focus on the specific circumstances of a stop and the particular motivation of the officer(s) involved. No statistical analysis of stop data will be able to incorporate these specific considerations of particular circumstance or motivation. At best, any empirical analysis of stop data will reveal patterns of stop activity associated with race. Thus, we strongly believe that even more sophisticated empirical approaches will be inadequate to deliver an unambiguous answer to the question: "Is law enforcement engaging in race profiling?"

2.3 Major Topics in the Literature

The literature on racially biased policing covers a wide range of topics. The major topics of relevance to the development of data analysis methodologies can be summarized into several categories: the definition of racially biased policing, data collection, police training, data auditing, error rates, types of data analyzed, types of analyses, types of benchmarks/baselines, and confounding factors. The following sections provide a review of these topics.

2.3.1 Definitions of Racially Biased Policing

In order to determine whether racially biased policing exists, it is important to have a clear definition of what constitutes racially biased policing. Although numerous variations exist, there are two general definitions of racially biased policing:

1) Any law enforcement activities initiated at least *in part* on the basis of race; and

2) Any law enforcement activities initiated *solely* on the basis of race.

The first, broader definition of racially biased policing includes stop or post-stop activity in which race is considered to any degree, whether in conjunction with other factors or not. This is the definition advocated by the ACLU.[21] However, as previously noted, it has only been accepted in some courts.

The second, narrower definition of racially biased policing allows for some consideration of race in law enforcement activities and is held by the courts that do not accept the first definition. However, there are variants of this definition. The consent decree entered into by the City of Los Angeles and the DOJ states that "LAPD officers may not use race, color, ethnicity, or national origin (to any extent or degree) in conducting stops or detentions, or activities following stops or detentions, except when engaging in appropriate suspect-specific activity to identify a particular person or group."[22] The consent decree goes on to explain that officers may consider race or ethnicity only when searching for specific persons who have been described, in part, by race and then only in conjunction with other appropriate identifying factors.

Other consent decrees that address racial profiling also allow some consideration of race in law enforcement activities.[23] Like the consent decree in Los Angeles, they limit the consideration of suspect race only to situations in which officers are seeking specific individuals who have been described according to race.

Recent DOJ-issued guidelines on racial profiling are even broader and expressly allow for greater consideration of suspect race by federal law enforcement agencies than the consent decrees permit.[24] These new guidelines are untested by the courts but appear to adopt a position analogous to that taken by the Eighth Circuit in its *Weaver* decision, whereby race can be used as one factor among others in developing reasonable suspicion or probable cause when race can be linked to a criminal scheme through information or intelligence. The DOJ guidelines state that officers "may consider race and ethnicity only to the extent that there is trustworthy information, relevant to the locality or time frame, that links persons of a particular race or ethnicity to an identified criminal incident, scheme, or organization." Moreover, the examples given in the guidelines do not limit the consideration of race

[21] ACLU (2002).
[22] *See* footnote 6.
[23] *Ledford v. City of Highland Park*, No. 00 C 4212, consent decree at III.B.¶¶ 30-31 (N.D. Ill. Oct. 5, 2000); Memorandum of Agreement Between the United States Department of Justice and the Montgomery County Department of Police and the Fraternal Order of Police, Montgomery County Lodge 35, Inc., III.A.(Jan. 14, 2000); *United States v. State of New Jersey*, No. 99-5970(MLC), ¶¶ 26-28 (D.N.J. Dec. 30, 1999).
[24] United States Department of Justice, "Fact Sheet: Racial Profiling" (2003).

merely to cases of suspect descriptions that include race; rather, they permit officers to take race into account when they possess information or intelligence linking persons of a certain race to a particular criminal enterprise.[25]

PERF also uses a variant of the second definition. It defines racially biased policing as any law enforcement activities that *inappropriately* consider race.[26] PERF proposes that policies concerning racially biased policing should:

- emphasize that law enforcement activities must be based on reasonable suspicion or probable cause;
- restrict officers' ability to use race in establishing reasonable suspicion or probable cause to those situations in which trustworthy, locally relevant information links a person or persons of a specific race to a particular unlawful incident;
- apply the restrictions above to requests for consent searches and non-consensual encounters that do not amount to legal detentions;
- articulate that the use of race must be in accordance with the equal protection clause of the 14th Amendment of the U.S. Constitution; and
- include provisions related to officer behavior during encounters that can serve to prevent perceptions of racially biased policing.

Given the second definition of racially biased policing, simple correlations of race with stop activity could indicate appropriate stop activity focused on legitimate law enforcement prerogatives rather than inappropriate racial animus. Any statistical analysis must allow for legitimate influences of race on stop activity. Although some of the more sophisticated statistical analyses have incorporated consideration of legitimate factors that are correlated with race, many of the more simplistic studies have interpreted simple correlations of stop activity with race as evidence of profiling. Analysis Group strongly recommends that such simple correlations be interpreted with extreme skepticism and caution. The methodologies developed in Chapter 6 focus specifically on incorporating consideration of pertinent factors in the analysis of stop data in Los Angeles.

[25] The following is one of the examples listed in the guidelines: "The FBI is investigating the murder of a known gang member and has information that the shooter is a member of a rival gang. The FBI knows that the members of the rival gang are exclusively members of a certain ethnicity. This information, however, is not suspect-specific because there is no description of the particular assailant. But because authorities have reliable, locally relevant information linking a rival group with a distinctive ethnic character to the murder, federal law enforcement officers could properly consider ethnicity in conjunction with other appropriate factors in the course of conducting their investigation. Agents could properly decide to focus on persons dressed in a manner consistent with gang activity, but ignore persons dressed in a manner who do not appear to be members of that particular ethnicity."

[26] Fridell, et al. (2001).

This review of the legal status of race profiling also indicates that the consideration of many specific details of particular encounters is required to determine whether or not racial profiling has occurred. It is only through such a detailed consideration that conclusions regarding the state of mind or motivation of an officer can be inferred. Even in these circumstances, the actual motive of the officer may never be known. This supports the conclusion that our proposed methodologies, or any quantitative analysis of generalized patterns in stop data, will not be able to provide a simple yes or no answer to the question: "Is the LAPD engaging in race profiling?"

2.3.2 Data Collection

One of the first steps in determining the true extent of racially biased policing during motor vehicle stops is the systematic collection of data related to police stop activity. Numerous state and local jurisdictions across the country have mandated data collection protocols. In 2002, a DOJ-sponsored study reported that more than 400 law enforcement agencies had instituted data collection measures and 14 states had passed legislation mandating racial profiling policies.[27] It also noted that there were more than 20 published reports that analyzed more than three million records of police stops from nearly 700 law enforcement agencies. Currently, the Racial Profiling Data Collection Resource Center at Northeastern University reports that there are about 4,500 to 5,000 law enforcement agencies collecting stop data.[28]

This trend toward the collection of more data has been the result of increased legislative and judicial mandates, proactive measures by local agencies in response to the national trend, and recommendations by the DOJ that police departments partner with academics and other social scientists to analyze police activity.[29] A survey of 49 state law enforcement agencies in 2001 found that 16 agencies required their traffic officers to record the race of those involved in traffic stops.[30] Nearly half of these agencies had initiated data collection programs. Another 23 agencies required officers to collect information on race in more specific circumstances, such as when arrests were made.

The systematic collection of data related to police stop activity can also serve other functions.[31] First, it can improve police-community relations by demonstrating an interest on the part of local authorities to explore the issue of racially biased policing. Second, it can serve as part of a training

[27] McMahon, et al. (2002).
[28] Interview with Jack McDevitt, Director of the Institute on Race and Justice/Director of the Center for Criminal Justice Policy Research, Northeastern University; Racial Profiling Data Collection Resource Center, Northeastern University, website (www.racialprofilinganalysis.neu.edu).
[29] Engel and Calnon (2004).
[30] Engel and Calnon (2004).
[31] Decker, et al. (2001).

program to educate officers about the use of racial stereotypes. Finally, the data can be used to monitor and evaluate the actions of officers.

Although the number of agencies that collect information on race and police stops has grown, there is no universally accepted set of data elements that are included in these collection efforts. However, public policy reports and academic studies offer suggestions that can help guide data collection in the City of Los Angeles. Of particular value are the practices of jurisdictions in similar areas or of similar size. The data collection efforts of selected jurisdictions are discussed in the jurisdictional review in Chapter 3. Whether the reference is academic recommendations or the actions of other jurisdictions, all comparisons of LAPD's data collection efforts must be made with regard to the particular constraints to data collection faced by the City.

2.3.2.1 Federal Guidelines

A recent DOJ-sponsored publication has suggested a number of guidelines for researchers to consider when designing data collection protocols.[32] This guide suggests the collection of information about the context in which the stop occurs in order to allow for more sophisticated statistical analyses of stop data (discussed below). The guidelines suggest collecting information about the context in which the stop occurs that may help explain differences in stop rates, including characteristics of the suspect (such as age, race, sex, driving behavior, and nature of violations), of the officer (such as age, race, sex, length of service, training, and current assignment), of the encounter (such as time of day, day of week, type of vehicle, and volume of traffic), and of the jurisdiction (legal requirements for stops, departmental policies on stops, population density, and socioeconomic disadvantage). The guide also suggests that researchers gather data on the driver's place of residence in order to account for differences in the demographic characteristics of residents and non-residents.

2.3.2.2 California Guidelines

In 1998, legislation (SB 78) was introduced to require law enforcement agencies to collect data in order to determine whether minorities are stopped by police at disproportionate rates.[33] Although this legislation passed, then-Governor Gray Davis vetoed it and instead directed the California Highway Patrol (CHP) to collect stop data. In October 2001, legislation (SB 205, §63) was also enacted requiring racial and cultural diversity training for law enforcement agencies statewide.[34] Although there is currently no mandated statewide data collection protocol, a number of jurisdictions

[32] McMahon, et al. (2002).
[33] Racial Profiling Data Collection Resource Center at Northeastern University (www.racialprofilinganalysis.neu.edu).
[34] *See* footnote 33.

within California, in addition to the CHP, are gathering data either voluntarily or as the result of litigation or consent decrees with the DOJ.

In 2001, the American Civil Liberties Union (ACLU) conducted a survey to identify which agencies in California were collecting data.[35] While the survey found that close to 50 agencies were collecting data, only 11 were collecting what the ACLU considered to be the essential data elements: the race of the driver; the reason for the stop; whether a search was conducted; what, if anything, was found in the search; and the result of the stop.

In 2002, California's Legislative Analyst's Office conducted a review of several stop data reports and data from California law enforcement agencies.[36] They advised that data collected by California law enforcement agencies be standardized and that the data be used to improve the effectiveness of law enforcement training programs. The set of data elements recommended for collection in traffic stops consisted of information about the stop (date, time, location, length of stop, and identity of officer), the individual stopped (race, age, and gender), the reason for stop and outcome, and any search (whether a search was performed, legal basis for search, what was searched, whether contraband was found, and description of property seized). The City's data collection efforts should be evaluated in light of these recommendations and activities in other California jurisdictions. Although such comparisons may be useful, the City is also subject to the particular constraints of its consent decree.

2.3.2.3 Consent Decree in City of Los Angeles[37]

The consent decree requires that the LAPD maintain a database containing information about its officers, supervisors, and managers. The database is required to contain information on police uses of force (lethal and non-lethal), firearm use, all vehicle pursuits and traffic collisions, and all arrest reports, crime reports, and citations made by officers.

As of November 1, 2001, the LAPD was required to record certain information each time an officer conducted a non-exempt traffic or pedestrian stop.[38] The reports are to include the officer's serial number; the date and time of the stop; the reporting district (RD) where the stop occurred; the driver's apparent race, age, and gender; the reason for the stop; whether the driver was required to exit the vehicle; whether a pat-down was conducted; what action was taken; whether the driver was asked

[35] ACLU (2002).
[36] Hill (2002).
[37] *See* footnote 6.
[38] *See* Chapter 4 for a summary of exemptions for motor vehicle and pedestrian stops.

to submit to a consensual search; the authority for a search; what was searched; what was discovered during the search; and what action was taken by the officer.

2.3.2.4 Academic Literature

Like the federal guidelines, the academic literature emphasizes the importance of gathering information about the context in which stops occur in order to help explain differences in stop rates. Data elements that have been frequently used in academic research on racially biased policing include:[39]

- vehicle information, such as license plate, registration, description;
- driver and passenger characteristics, including race, gender, and age;
- crime problems faced by the neighborhood;
- specific police tactics used;
- officer characteristics;
- rationale for the stop;
- duration of the stop;
- date, time, and location of stop;
- type of search (whether of a vehicle, driver, or passenger);
- basis for the search (whether visible contraband, odor of contraband, canine alert);
- officer and suspect demeanor;[40]
- use of force applied, if any; and
- result of the stop.

The complete list of data elements recommended by PERF can be found in Appendix B.

The key data element in studies of racially biased policing is the race of the person stopped. Two different approaches to the classification of race have been used in the academic literature. PERF reports that some researchers have used a simple "black"/"non-black" dichotomy, while others have used a larger number of racial classifications, such as black, white, Hispanic, or Asian.[41] The former approach is simpler, allows for easier classification, and may be appropriate for small sample sizes where more specific race effects cannot be discerned. However, grouping all non-blacks into a single category may obscure differences in the ways that members of these groups are treated and may not provide the desired visibility of specific groups in areas with racial diverse populations. We evaluate

[39] Ramirez, et al. (2000); Fagan (2002); Decker, et al. (2001); and Schafer, et al. (2004).
[40] Engel (2003); Lundman (1994); Klinger (1996).
[41] Fridell (2004).

the appropriate race classifications for use in our proposed methodologies in Chapter 6, and conclude that this more disaggregated approach is not only desirable, but also possible, for the City.

A DOJ-sponsored study reports that data pertaining directly to the stop have been linked to other useful data in order to yield a richer data set for analysis.[42] Stop data have been linked by officer, unit, district, or specific address to enable analyses to be performed at different levels of aggregation. Stop data have also been linked to other relevant police data, such as arrest reports, citations, and crime reports. The stop data collected by the City of Los Angeles can be linked to a wide variety of other data by unique identifiers recorded on the FDR. In Chapter 5, we identify these other data and evaluate their usefulness in developing methodologies for evaluating the stop data themselves.[43] We conclude that there are considerable opportunities for creating a richer overall dataset for analysis in the City and detail our recommended approaches in Chapter 7.

The definition of a "stop" plays an important role in data collection and analysis. It identifies the situations in which data are to be collected and determines the value of the numerator used to calculate stop rates. The academic literature generally suggests that only discretionary stops (i.e., those where officers have discretion in whether or not to stop) be included in any analysis.[44] The distinction between traffic stops (i.e., stops in response to a violation of traffic laws) and investigative stops (i.e., stops in response to reasonable suspicion of criminal activity) is also considered important. According to PERF, in theory, researchers should examine traffic and investigative stops separately.[45] However, in reality many investigative stops are made under the pretext of being traffic stops and the data may have to be analyzed together. The proposed methodologies, discussed in Chapter 6, detail our recommended approaches for distinguishing investigative stops in Los Angeles. Although there is no single field on the FDR designating a stop as investigative, other information about the stop are useful in making this important designation.

With respect to the physical gathering of data, most studies have relied on stop data collected by the officers making stops. Several methods have been used by officers for recording and transmitting data. After a stop, officers can transmit information by radio to a central location, complete a data collection form, or input data directly into a mobile data terminal or other computerized device.[46]

[42] Ramirez, et al. (2000).
[43] Most of these datasets are collected as a normal part of police work and unrelated to quantitative analysis of race profiling, but are useful for evaluating the questions of interest.
[44] Fridell (2004); Batton (2004).
[45] Fridell (2004).
[46] Fagan (2002).

Chapter 1 details the evolving methods the City of Los Angeles has adopted for gathering stop data. These efforts have yielded increasingly reliable data on stop activity.

As with most topics in the study of racially biased policing, recommendations regarding what stop data to collect and how to collect them have evolved over the past several years. In Chapter 7, we evaluate the City of Los Angeles' data collection efforts relative to the current best practices reflected in the academic literature and in our jurisdictional review in Chapter 3 in order to develop recommendations specifically for the City. These recommendations are made, of course, with an understanding that specific constraints may impede the implementation of some of the recommendations.

2.3.3 Errors in Stop Data

Erroneous or incomplete stop data can arise inadvertently.[47] The potential also exists for officers to intentionally misreport data in order to hide inappropriate stop practices. This could include selectively recording data or making off-the-record stops.

A DOJ-sponsored publication acknowledges that missing data is a major problem in social science research, especially research on racially biased policing.[48] Two types of missing data problems are discussed in the literature:

1) cases in which certain information about a known and reported stop is missing ("missing variables"); and
2) cases in which no record exists for a stop ("missing observations").

There is no consensus in the literature about how best to address the problem of missing variables. One approach is to exclude these stops from the analysis. Missing variables can arise when officers report that they cannot determine the race of the person being stopped. Researchers differ over whether or not to eliminate observations of this type. PERF recommends that data be discarded for such stops because it is an officer's perception of race that is central to the issue of whether minorities are stopped at disproportionately high rates, not the actual race of the suspect.[49] However, PERF also notes that some researchers argue against omitting data in cases in which police have not identified a driver's race.[50] These researchers believe that some community members may question the validity of officers' responses because they might claim a driver's race was undeterminable when the officer actually thought the driver was a minority.

[47] Buerger (2002).
[48] McMahon, et al. (2002).
[49] Fridell (2004).
[50] Fridell (2004).

For missing variables in general, the DOJ-sponsored study recommends that researchers consider the extent to which these missing data may affect the conclusions of a study.[51] Further, they advise that studies using stop data report the percentage of observations with missing variables and the extent to which the results of the study could be affected.

In Chapter 5, we detail the extent of missing data and evaluate the expected impact of such missing data on the methodologies that we have proposed. Note that the impact that missing data may have on the results cannot be fully evaluated until the analyses are actually implemented. We believe, however, that many problems associated with missing data may be mitigated by simply having a large volume of data. That is, even if some data are missing, there may be a sufficient amount available for analysis. We are interested in evaluating overall patterns that may reveal race disparities in stop outcomes. If missing data are not biased, the data that are available will still be valuable for investigating such patterns. This is the same position adopted by other researchers facing the problem of missing data.[52]

2.3.4 Collection and Auditing of Stop Data

One suggestion for avoiding problems of missing variables is for officers to use computerized devices to input information about stops.[53] Such devices can be programmed so that each electronic stop form cannot be finalized until all necessary data fields are completed. The problem of missing observations can be addressed with training. For instance, officers must be properly trained with regards to when to fill out a stop form.

Several data auditing techniques have been suggested to ensure the accuracy of data collected.[54] One such technique involves the installation of video cameras and comparison of selected tapes with stop data reported by officers. Another method is cross-checking data with other data sources.[55] This can include the comparison of officer-reported stop data to citations reports, arrest reports, or calls to dispatch. A third technique is supervisory checks, whereby supervisors review the data reported by officers.[56] A fourth technique is the use of independent observers to ride along with officers and record data. However, the cost of observers makes it prohibitive to use this approach in all but a small sample of stops. Furthermore, because observers are not present on all stops, there is a concern that officers may change their behavior when observers are present. Where digitized driver's license photos are

[51] McMahon, et al. (2002).
[52] Cordner, et al. (2002); Thomas and Hanson (2004); Spitzer (1999).
[53] Fridell (2004).
[54] Schafer, et al. (2004).
[55] Smith and Alpert (2002); Engel and Calnon (2004); Fridell, et al. (2001).
[56] Fridell, et al. (2001).

available, information on driver race captured by officers in the field can be compared to driver's license photographs for consistency.[57] Finally, surveys can be used to validate data. Using post-stop surveys, data can be gathered from the public and compared to officer-collected data. Surveys are a useful way of detecting systematic differences between officer-reported data and public-reported data. However, because the public does not have complete information concerning all aspects of police behavior and because the public may have biases, this method must be used judiciously.[58]

A number of these data auditing techniques have been adopted by the City of Los Angeles to ensure the accuracy of its stop data. The City has also modified its data collection efforts in order to enhance the reliability and completeness of its stop data. These stop data audits and collection efforts are reviewed in detail in Section 5.2.1. This section also provides an assessment of the adequacy of the stop data for use in the analyses developed in Chapter 6.

2.3.5 Police Training Concerning Biased Policing

PERF suggests that, along with collecting data, agencies conduct training and education programs to reduce the existing prevalence as well as the impression of biased policing.[59] It further recommends that such training include both community and agency perspectives, in order to create a dialogue between police and the public. PERF strongly advocates that all police personnel (including command officers) participate in such training. Discussion about racial profiling by law enforcement should begin with "the core mission and values of policing."[60] Included in this discussion are the notions of equal protection under the law and freedom from unreasonable search and seizure. Training programs should present survey data on the perceptions of bias among the public as well as statistical data concerning the demographics of police stops in a jurisdiction.

The authors of a DOJ Community Oriented Policing Services (COPS) study note that officers across the country generally receive high quality training on use of force.[61] However, they conclude that more training time should be allocated to those areas that impact the decisions to use force, such as police ethics, cultural diversity, community-oriented policing, and conflict resolution. They also recommend that training in ethics and conflict resolution be given with the same frequency as training in firearms and self-defense.

[57] Engel and Calnon (2004).
[58] Schafer, et al. (2004).
[59] Fridell, et al. (2001).
[60] *See* footnote 59 at p. 82.
[61] McMahon, et al. (2002).

As previously noted in Section 2.3.2.2, California enacted legislation (SB 205, §63) in October 2001 to provide law enforcement officers with more training. This legislation required racial and cultural diversity training for law enforcement agencies statewide.

The manner in which LAPD officers are trained to gather stop data is detailed in our review of LAPD stop data in Section 5.2.1. We also recommend in Chapter 6 the development of internal benchmarking (i.e., peer-to-peer comparisons of stop activity), which will be most useful in the context of a broader training program that can be used to address any identified disparities in stop outcomes for individual officers.

2.3.6 Types of Data Analyzed

The appropriate type of analyses for investigating questions of racial bias in policing is determined, in part, by the type of data available. Data related to police stop activity can be classified using several criteria: pedestrian versus motor vehicle stops; stop data versus post-stop data; discretionary versus non-discretionary stops; and stops classified by characteristics of the suspect.

2.3.6.1 Pedestrian v. Motor Vehicle Stop Data

PERF conducted a survey of current data collection efforts and found that most agencies that collect stop data do so only for traffic stops.[62] They provide two reasons for this. First, because they occur more frequently than pedestrian stops in most jurisdictions, traffic stops hold the greatest potential for analysis due to the relative abundance of data on these types of stops. Second, traffic stops are more likely than pedestrian stops to be used by officers as pretext stops. To date, the majority of empirical research on racially biased policing has focused on motor vehicle stops. For Los Angeles, there is the potential to evaluate both pedestrian and motor vehicle stops. This provides an opportunity to compare outcomes for stops with distinct attributes. We also are able to develop methodologies that are appropriate for these different types of data (*see* Chapter 6).

2.3.6.2 Stop v. Post-Stop Data

For both pedestrian and motor vehicle stops, the potential for racially biased policing arises at two points during the interaction between a suspect and an officer: 1) at the time a stop is made; and 2) after the stop occurs. In order to assess the behavior of police at these two points in time, different data must be analyzed. A comprehensive analysis of stop behavior requires data pertinent to the decision to stop, such as the officer's assessment of the race of a suspect when deciding to make a stop, the type of

[62] Fridell, et al. (2001).

violation involved, where the violation occurred, and the time of day. An analysis of post-stop behavior requires data about events after the stop, such as the officer's assessment of the race of a suspect after making a stop and the result of a stop (e.g., searches, citations, and arrests). No jurisdiction, to our knowledge, distinguishes the officer perception of race at various points in the stop encounter. The point at which race can be discerned, however, is an important consideration in developing quantitative approaches. The Ride-Along Study reported in Chapter 4 discusses these issues. The impact of differences in the ability to perceive race at various points in the stop are specifically discussed in the development of our methodologies in Chapter 6.

An important question related to the prevalence of racial profiling is whether profiling is even possible in many cases. If officers cannot make a determination about race when initiating a stop, then it is not possible to racially profile when making stops.[63] Research has indicated that in some circumstances it may be difficult for officers to make a determination regarding the race of a suspect before a stop is made.[64] For example it may be more difficult to determine the race of drivers or passengers of motor vehicles than of pedestrians. It may also be more difficult to determine race at night than during daylight hours. If officers cannot determine the race of suspects before they decide to make a stop, then racial profiling at the time of the stop is not possible.

However, once a stop is made and officers have initiated contact with a suspect, officers are far more likely to be able to make a determination regarding the race of a suspect. Therefore, racially biased policing is possible in post-stop activity of officers. Insight into the point at which an officer is capable of determining the race of a suspect provides critical guidance as to the appropriate focus of empirical inquiries of racial bias. The fewer opportunities officers have of accurately identifying the race of a suspect at the time a stop is initiated, the less important it is to focus on racial patterns in overall stop activity. Such a finding would suggest that resources would be more appropriately deployed to study post-stop activity. In order to investigate this question, Analysis Group developed and implemented a ride-along study specifically for Los Angeles (*see* Chapter 5). Results from this study are generally consistent with previous findings reported in the literature.

In most cases, police agencies that collect stop data also collect data on activities and outcomes following the stop. However, until very recently, most of the research on racially biased policing has

[63] This does not necessarily mean that officers can correctly determine the actual race of suspects. It merely means they can make a determination. The perception of the officer is what is important when evaluating racially biased policing. If an officer perceives a person to be a minority and exhibits bias against that person because of that perceived race it would still be considered racial profiling regardless of whether that perception is right or wrong. If the person were not actually a minority, it would just be erroneous racial profiling.

[64] Smith and Alpert (2002); Engel and Calnon (2003); Fridell (2004); Withrow (2004).

dealt only with the analysis of stop data.[65] The types of analyses that have been proposed or applied to post-stop data are discussed in Section 2.3.8.2 below.

2.3.6.3 Discretionary v. Non-Discretionary Stops

The authors of a DOJ-sponsored study assert that one important factor to be considered when analyzing stop data is the discretion officers have in deciding whether to make a stop.[66] Situations with higher levels of discretion (usually violations of less severity) are more susceptible to biased policing. One method proposed to distinguish the level of officer discretion in motor vehicle stops is to separate stops into moving violations and non-moving violations.[67] For non-moving violations (e.g., broken tail-light, failing to wear a seatbelt, and expired registration) and even minor moving violations (e.g., a few miles per hour over the speed limit), officers have more discretion regarding whom to stop than they do for major moving violations (e.g., excessive speeding, running a red light, and failing to stop at a stop sign). Because officers have more discretion when choosing whom to stop for non-moving violations and minor moving violations, stops made for these reasons are believed to be more susceptible to officer bias. We recommend techniques to exploit these differences in discretion in the development of our methodologies in Chapter 6.

2.3.6.4 Suspect Characteristics

Generally, discrimination may be related to any characteristic of an individual, not just race. Similarly, biased policing may also relate to any characteristic of a suspect, such as gender and age. However to date, most published research in the literature on biased policing has focused on race. Furthermore, although many police agencies collect data on other demographic characteristics of persons stopped or searched, including gender and age, there has been very little analysis to evaluate whether policing is biased with respect to these characteristics. As we note in the development of our methodologies in Chapter 6, some analyses of disparities in stop outcomes with respect to gender or age may be informative of biased policing. In other circumstances, these characteristics may be important control variables.

2.3.7 Standards for Judging Policing Activity to be Racially Biased

Currently, there is no generally accepted methodology or analysis by which to judge whether policing activity is racially biased. In 2001, PERF concluded that there were no satisfactory "best

[65] Consequently, most of this literature review only provides information as it relates to stop data. Information regarding post-stop data is provided where available.
[66] Ramirez, et al. (2000).
[67] Smith and Petrocelli (2001).

practices" in the realm of data interpretation and analysis.[68] They also concluded that definitive conclusions cannot be made regarding racially biased policing based on stop data because it is not possible to separate the impact of race from all legitimate factors that influence police decisions. In 2002, a DOJ-sponsored publication concluded that there was no consistent set of criteria for determining the nature and extent of racially biased policing."[69]

While these statements still hold true, the literature on racially biased policing has continued to evolve and move closer toward development of standard approaches to stop and post-stop data analysis. As discussed below, certain techniques and methods of analysis have become more commonly discussed and used in the literature.

2.3.8 Types of Analyses

There are two general types of analytical techniques that have been suggested or used in the literature on racially biased policing: bivariate analysis and multivariate analysis. Bivariate analysis examines the relationship between two variables, such as race and stop rates. They may include simple analyses, such as summary statistics and cross-tabulations, or more sophisticated statistical techniques, such as regression analysis. Bivariate analyses identify and quantify correlations between two variables but do not necessarily allow definitive conclusions about the relationship between those variables because they do not control for other factors that may explain the relationship between the variables of interest.[70] Therefore, for instance, even if a statistical relationship is found between race and the frequency of stops, it does not necessarily indicate racially biased policing since the relationship may be explained by other factors that legitimately influence the rate at which different racial groups are stopped such as differences in calls for service, crime rates, the level of police deployment and the like.

In contrast to bivariate analyses, multivariate analyses can control for other relevant factors, thereby allowing more definitive conclusions regarding the relationship between the key variables of interest. For example, at least one academic study included the type of violation (moving versus non-moving violations) in a multivariate analysis to examine whether minorities were stopped more frequently when officers are able to use greater discretion.[71] Because other variables can be accounted for in multivariate analyses, it is possible to test competing explanations for racial disparities in stops and post-stop outcomes. More important, *if after fully accounting for all legitimate factors*, there

[68] Fridell, (2001).
[69] McMahon, et al. (2002).
[70] Batton (2004).
[71] Smith and Petrocelli (2001).

remains an otherwise unexplained relationship between race and stops, it may be appropriate to conclude that the relationship is evidence of racially biased policing.[72] It is important to note that if all legitimate factors cannot be accounted for in a multivariate analysis, it is not possible to draw a definitive conclusion regarding whether racially biased policing exists. It is anticipated that we will not be able to account for all legitimate factors given the data limitations set forth in Chapter 5.

Among the studies reviewed by the DOJ-sponsored publication and other articles, bivariate analyses of stop data are the most prevalent.[73] However, it is encouraging to note that, as the literature on racially biased policing has evolved, multivariate analyses have become more common.[74]

2.3.8.1 Stop Data Analyses

There are three types of analyses that are often conducted with stop data: benchmark/baseline analyses, geographic disparity analyses, and internal benchmarking. All three types of analysis may be conducted using either a bivariate or multivariate analytical technique.

2.3.8.1.1 Benchmark/Baseline Analyses

In order to examine whether racially biased policing is prevalent in a jurisdiction, researchers must create a benchmark or baseline against which to compare stop data.[75,76] Researchers use benchmarking as a way of developing a demographic profile of the people who are at risk of legitimately being stopped. For traffic stops, the demographic profile describes the driving population at risk of being stopped. Similarly, for pedestrian stops, it is the pedestrian population at risk of being stopped. In either case, researchers must ensure that they are comparing the stop data to an appropriate benchmark. In other words, they must make sure the "numerator" (stop data) and "denominator" (benchmark data) are for the same group of individuals.[77]

To be useful in fully testing whether there is bias in police behavior, a motor vehicle or pedestrian benchmark must account for the following four possible explanations of differences in stops across racial groups that do not point to biased policing:

[72] Only after accounting for all legitimate law enforcement factors influencing stop activity can a conclusive statement regarding race and stops be made. If a legitimate factor is not accounted for, it is possible that any relationship attributable to race and stops may be the result of the omitted factor. For a discussion of legitimate law enforcement factors influencing stop activity, *see* Section 2.3.10.
[73] McMahon, et al. (2002); Knowles and Persico (2001); Rojek, et al. (2004).
[74] Petrocelli, et al. (2003); Engel (2004); Smith and Petrocelli (2001); Novak (2004); General Accounting Office (2000).
[75] Fridell (2004).
[76] Functionally, a benchmark and a baseline are the same. They are both methods of approximating the population that is at risk of being stopped. However, the term baseline has been applied to data that are created specifically for comparison purposes in a study of racial profiling. The term benchmark is applied to previously collected information about a relevant population. Smith and Alpert (2002).
[77] Fagan (2002).

- racial groups are not equally represented as residents in a jurisdiction;[78]
- racial groups are not equally represented as drivers or pedestrians on jurisdiction roads;[79]
- racial groups are not equivalent in the nature and extent of their traffic or pedestrian law-violating behavior;[80] and
- racial groups are not equally represented as drivers or pedestrians on roads where stopping activity by police is high.[81]

An ideal benchmark will allow the researcher to distinguish between these four alternatives and racially biased policing.

Identifying a valid benchmark is one of the fundamental methodological issues in the analysis of stop data. The feasibility of benchmark analyses and alternative benchmarks that have been used in prior studies are discussed in Sections 2.3.9 below.

2.3.8.1.2 Geographic Disparity Analyses

Stop data can be examined using different levels of aggregation. For example, analyses can be performed using the individual stop as the unit of observation, or using aggregate statistics for all stops in a particular geographic area. Aggregating data by area allows researchers to examine whether there is excessive overall stop activity in areas where minorities represent a disproportionate number of drivers or pedestrians. One way to aggregate stop data is to examine stops neighborhood by neighborhood. For example, one study examined whether minority populations are highly concentrated in areas of heightened police activity.[82] Studies can be conducted to determine whether the racial representation in the neighborhood or traffic corridor is a statistically and practically significant determinant of overall stop activity, after accounting for legitimate influences on such activity.

Once analysis has been conducted on a neighborhood level, a particular neighborhood can be identified as experiencing either more or less stop activity than should be expected. The technique thus offers evidence as to which neighborhoods are disproportionately the focus of stop activity. If policing activities are driven by the characteristics of a neighborhood (e.g., crime, business versus residential

[78] Fridell (2004); Engel, et al. (2002).
[79] Fridell (2004).
[80] Fridell (2004); Smith and Alpert (2002); Engel and Calnon (2004).
[81] Fridell (2004).
[82] Miller (2000).

areas, and traffic levels), then geographic disparity analyses may be used to identify these characteristics and provide context to the pattern of stop activity within the jurisdiction.[83]

2.3.8.1.3 Internal Benchmarking (Officer-to-Officer Comparisons)

Internal benchmarking involves the comparison of similarly situated officers (i.e., officers on the same shift, in the same division, and/or on the same assignment). This comparison controls for most factors that influence who is stopped (e.g., location, time of day, and type of shift) so that researchers can determine whether individual officers or groups of officers stop more minorities than their peers.[84]

Comparison of individual officers to their peers is preferable to comparison of groups to other groups because it is easier to identify "outliers" (i.e., officers who may practice biased policing). To use this approach to full effect, agencies must be able to associate stop data with individual officers. However, even if an agency cannot link data to individual officers, it may still be possible to develop internal benchmarks using data for groups of officers. Researchers must identify groups that cover similar populations under similar conditions. This may involve comparing the same shifts in different precincts. The greater the number of groups compared, the more reliable the results.

2.3.8.2 Post-Stop Data Analyses

There are two types of post-stop data analyses that are discussed in the literature: benchmark analyses and hit rate analyses.[85]

2.3.8.2.1 Benchmark Analyses

As with stop data, post-stop data must be compared to a benchmark in order to make determinations about biased policing. For both pedestrian and motor vehicle stops, the benchmark should reflect the population at risk of being involved in post-stop activity (e.g., citation, search, and arrest). This is likely to be a subset of all persons stopped because not everyone stopped is at equal risk of post-stop actions by officers. Given that there is no accessible method for determining persons at risk of post-stop actions or whether those risks are equivalent among races, researchers have simply compared the occurrence of post-stop sanctions among racial groups under the assumption that groups should be treated equally by the police.[86]

[83] Meehan and Ponder (2002).
[84] Fridell, et al. (2001).
[85] Geographic disparity analyses and internal benchmarking can be conducted with post-stop data. However, these were not discussed in the literature. These analyses for post-stop data are akin to those for stop data.
[86] Withrow (2004).

2.3.8.2.2 Hit Rate Analyses

One method for evaluating search data is hit rate analysis (sometimes called an outcomes test).[87] Hit rate analysis is used to evaluate whether the outcomes of searches (e.g., discovery of contraband) are systematically different for minorities and non-minorities. In a typical hit rate test, researchers calculate the hit rate (i.e., rate of successful searches) as the number of successful searches divided by the total number of searches. Lower "hit rates" for evidence-based searches of minorities may be evidence of racially biased policing if officers are conducting a greater number of searches of minorities and these searches are unsuccessful.

While hit rate analyses can potentially provide evidence of racial bias in policing, the results of such analyses do not account for legitimate factors that may influence the decision to conduct a search. Thus, hit rate analyses are less likely to be conclusive than carefully specified multivariate post-stop benchmark analyses. As a test for disparate treatment of minorities, hit rate analysis can be either under-inclusive (i.e., showing no disparate treatment when there is) or over-inclusive (i.e., showing disparate treatment when there is not). Hit rate analysis may be under-inclusive because it may not indicate racial profiling if officers racially profile but are correct in inferring that minorities have a higher likelihood than non-minorities of possessing contraband. On the other hand it may be over-inclusive when a particular observable characteristic is a valid indicator of criminal activity for some races but not for others. If officers base their decisions on this characteristic, then racially disparate outcomes may be observed even in the absence of racial profiling. Given that hit rate analysis may be either under- or over-inclusive, researchers must be cautious in interpreting the results of this type of analysis.

2.3.8.3 Analyses of Complaints

One type of analysis that has been used to assess whether or not racially biased policing existed in federal law enforcement agencies is an analysis of complaints by members of the public. In one example of this type of analysis, the DOJ surveyed large federal law enforcement agencies and/or agencies with substantial contact with the general public in order to gather data on public complaints about the agencies.[88] The survey results showed that only six of the 18 surveyed agencies reported having received misconduct complaints in 2000 and 2001 regarding racial profiling allegations. Furthermore, there were only 300 complaints resulting from the millions of contacts between federal law enforcement and the public. Based on these results, the DOJ concluded that there was "no

[87] Ayres (2002); Engel and Calnon (2004).
[88] DOJ (2003).

systemic racial profiling by the federal law enforcement community."[89] Chapter 5 reviews the potential usefulness of complaint data in various analyses of LAPD stop data, but only as a potential control variable, not as an indicator of racial profiling.

2.3.9 Types of Benchmarks

One of the most problematic aspects of stop data analysis is the construction of an accurate benchmark or baseline.[90] The difficulty is in determining the population that is at-risk of being stopped. This is sometimes called the "denominator problem." One recent study concluded that racially biased policing cannot be "proven" because it is currently infeasible to accurately determine who is eligible to be stopped.[91] This conclusion stemmed from the generally accepted belief that measures of resident population (i.e., census data) are a poor indicator of the population at risk of being stopped. One study verified this assertion by cross-checking census data with information gathered from an observational study.[92]

Several benchmarks for motor vehicle stops have been discussed in the literature and implemented in studies of actual stop data.[93] These include census data, adjusted census data, data collected by the Department of Motor Vehicles (DMV), data gathered from blind enforcement mechanisms, data from observational studies, crime data, traffic accident data, and survey data.

2.3.9.1 Census Data

The DOJ reviewed a number of reports on racial profiling that were based on motor vehicle stop data and noted that most used a single comparison group, typically the total resident population as estimated by U.S. Census data.[94] The benefits of using census data as a benchmark are that they are readily available and relatively low cost.[95]

But there are significant flaws in using census data as a benchmark. One shortcoming is that they may undercount minorities in the population.[96] A DOJ-sponsored publication reports that there are concerns that the undercounting of minorities limits the reliability of the racial demographics of any

[89] *See* footnote 88 at p. 13.
[90] Schafer, et al. (2004); Withrow (2004).
[91] Schafer (2004).
[92] Miller (2002).
[93] Pedestrian benchmarks/baselines are not presented here because they were not discussed in the literature.
[94] Fridell (2004).
[95] Fridell (2004); Withrow (2004).
[96] Fridell (2004).

benchmark comparison group, including those based on census data.[97] If minorities are undercounted in the benchmark data, studies will tend to indicate racial profiling when none exists.

Another inherent flaw with using census data as a benchmark for motor vehicle stops is that resident population is likely not a good indicator of the driving population at risk of being stopped. This generally accepted conclusion in the literature on racial bias in policing[98] implies that census data are not a reliable benchmark for motor vehicle stops. Several studies have verified this assertion by cross-checking census data with information gathered from observational studies. One study conducted by the Home Office, the government entity that deals with national justice, crime, and policing issues in the United Kingdom, developed an innovative method for identifying the population at risk of being stopped.[99] Home Office researchers mounted video cameras on automobiles and used observers to record the race of pedestrians and drivers in five areas located in four cities in England. The data collected by the researchers confirmed that the population of persons who frequented an area was substantially different from the census of the residential population. In most areas, the pedestrian and vehicular populations included a greater percentage of minorities than indicated by the census.

Researchers in a study of Sacramento, California also found significant differences in the race of drivers observed at key intersections when compared to the population, as reported by the census, of the areas in which the intersections were located.[100] At most intersections, minority drivers were under-represented by their proportions in the relevant census data.

Results from research conducted in Denver, Colorado showed that less than half of the motorists stopped by police were residents of that city, which suggests that the use of the census as a benchmark to compare stops would be imprecise.[101]

Overall, census data are considered an imperfect benchmark for use in evaluating motor vehicle stop data. They address only one of the alternative hypotheses discussed above in Section 2.3.8.1.1 – namely that there are more stops of minorities than whites because there are more minorities living in the jurisdiction than whites. But even this hypothesis may not be fully addressed to the extent that minorities are undercounted in census data. Because census data do not address differences between groups in driving quantity, quality, or location, researchers cannot use this method of benchmarking

[97] McMahon, et al. (2002).
[98] Fridell (2004); Withrow (2004); Schafer, et al. (2004).
[99] Miller (2000).
[100] Greenwald (2001).
[101] Thomas (2002).

motor vehicle stop data to draw definitive conclusions about racially biased policing in most jurisdictions.[102]

2.3.9.2 Adjusted Census Data[103]

Some researchers have attempted to adjust census data to more accurately represent the driving population. One suggested adjustment is based upon age: only individuals of driving age should be included in the benchmark. In a further refinement, PERF suggests that researchers establish what percentages of people in each racial group are between the ages of 15 and 24, and what percentage are over 25. This may be an important consideration because young drivers are more likely to violate traffic laws and therefore have a greater likelihood of being stopped. Failing to adjust for this age effect can lead to faulty conclusions about racial bias when one racial group has a significantly larger percentage of young drivers.

In order to partially control for the possibility that all racial groups are not equally represented as drivers, additional adjustments must be made to census data. Using the census data on households without vehicles, researchers can establish the demographics of drivers in a jurisdiction. However, an additional adjustment must be made to the households without vehicles in order to transform the data from households to individuals.

Census data reflect the demographic characteristics of the residents of an area. However drivers may reside outside the areas in which they drive and thus not be included in a census-based benchmark. To address this potential mismatch between the driving population and the benchmark, some researchers recommend differentiating between stops of residents and non-residents. By limiting the analysis to stops involving residents of a given area, the comparability of the benchmark to the population of interest may be improved.

Alternatively, some researchers recommend adjusting census data to account for the inflow and outflow of drivers to and from a jurisdiction.[104] One method is to use commuter demographics from the U.S. Census.[105] Because these data are intended to represent those driving in a jurisdiction during the day, they may serve as a benchmark for police stops made during the day. There are a number of major shortcomings to this method however. First, it discards data on stops made at night. Second, it does not account for non-commuters, such as tourists, students, and persons that live and drive in the area. Third, it does not necessarily account for the frequency with which people drive. Finally,

[102] Greenwald (2001).
[103] Fridell (2001 and 2004).
[104] Fridell, et al. (2001); Rojek, et al. (2004); Farrell (2003).
[105] Fridell (2004).

commuter demographics from the U.S. Census may not be reliable if they undercount minorities, as previously noted.[106]

One recent study used spatial weighting to adjust census data to account for the influx of persons into a jurisdiction.[107] This study obtained estimates of the racial composition of a city by assigning weights to each racial subgroup in the city of interest and surrounding cities based on the size of the cities and the distance from the geographic center of the city of interest. Researchers conducting this study reported that estimates from spatial weighting improved the estimated roadway usage in some cases, but not all.

Another study used traffic flow modeling to adjust census data to account for the inflow and outflow of drivers to an area.[108] This method accounted for specific factors such as car ownership, percentage of commuters, travel time, and state economic and travel data, including employment, retail trade, food and accommodation sales, and road volume. The study found its estimates to be closer to observed traffic patterns than either census data or census data modified by distance alone.

Overall, in using adjusted census data as a benchmark for motor vehicle stops, researchers are attempting to address only three of the four alternative hypotheses discussed in Section 2.3.8.1.1. Adjusted census data cannot account for the fourth hypothesis – namely whether members of different racial groups are equally likely to violate traffic laws. Because adjusted census data do not address all the alternative hypotheses, PERF suggests that they not be used to draw definitive conclusions about the causal link between officer bias and police stop behavior.

2.3.9.3 DMV Data

Department of Motor Vehicles (DMV) data on the race of drivers has been suggested as a possible benchmark for motor vehicle stops.[109] Hypothetically, these data should reflect closely the demographic characteristics of drivers on the road. As with census data, it may be necessary to adjust for the inflow and outflow of drivers to and from other areas by using methods similar to those used to estimate the demographic characteristics of commuters.

A number of problems have been noted with using DMV data as a benchmark for motor vehicle stops. First, the nationwide trend has been to eliminate the reporting of race on driver's licenses.[110] Even when race is recorded, there may be restrictions on the use of this information by researchers.

[106] *See* footnote 96.
[107] Rojek, et al. (2004).
[108] Farrell (2003).
[109] Fridell (2004).
[110] Fridell (2004).

Second, DMV data, like census data, fail to account for the possibility that members of different racial groups may violate traffic laws at different rates.[111] Third, DMV data do not account for differences in driving patterns among racial groups and the inflow and outflow of persons to and from an area. Fourth, researchers have cited national surveys that indicate substantial differences between minorities and non-minorities in vehicle ownership rates, use of public transportation, miles driven, and motor vehicle trip frequency and duration.[112] It has also been noted that not everyone with a driver's license drives and not everyone who drives has a license.

PERF has asserted that DMV data are a better proxy for the driving population than unadjusted census data.[113] Even so, this approach is subject to the criticisms noted above and may not allow researchers to draw definitive conclusions about the presence or absence of racially biased policing.

2.3.9.4 Blind Enforcement Mechanisms[114]

This method uses information on the race of those ticketed using mechanisms such as cameras at traffic lights and air patrol radar to measure the demographic characteristics of traffic violators. Race is typically determined by linking vehicle identification or driver's license numbers to demographic information maintained by the DMV. If stops of minorities are disproportionate to their representation in the population of those who violate traffic laws, the profile of those being ticketed by the non-human mechanisms will differ significantly from the profile of those being stopped by officers.

The use of blind enforcement mechanisms can give a very accurate profile of drivers, albeit within a small area. Data from cameras placed at an intersection can be directly compared with officer stop data at the same intersection. Under these ideal circumstances, conclusions about racially biased policing can be drawn about a small sub-area because this benchmark addresses all four alternative hypotheses.

In order to apply this method broadly, it must be assumed that the limited number of blind observation sites are similar and in direct proportion to other sites not covered by blind enforcement mechanisms. For instance, stop data may include stop sign violations in addition to the red light violations captured by traffic light cameras. Implicit in this approach is the assumption that the demographic profile of those who run stop signs is similar to those who run red lights.

According to the literature, these assumptions may need to be modified when radar is the "blind" mechanism used to construct the benchmark. In this case, the stop data analyzed may need to

[111] Fridell, et al. (2001).
[112] Engel, et al. (2002); Smith and Alpert (2002).
[113] Fridell, et al. (2001).
[114] Fridell (2004). Fridell also cites to other literature (p. 138) for background.

be limited to stops for speeding violations in order to improve comparability with the benchmark. The benchmark and stop data should also be similar in terms of time of day and type of traffic in the area.

The strength of this method is that the benchmark will typically reflect the people at risk of being stopped. As a result, all four alternative hypotheses are addressed. Yet this method also has significant drawbacks. First, benchmarking with "blind observation" data is limited in that it can be applied only to areas that are similar in demographics and traffic type to the test area. Therefore, the results most likely cannot be generalized to the jurisdiction level. In addition, for traffic-light cameras, which photograph license plates, the benchmark group is composed of vehicle owners, not necessarily drivers. Also, if the DMV cannot provide information on race, the method cannot be implemented.

Some researchers have compared high-discretion and low-discretion traffic stops as a proxy for blind observation.[115] In low discretion stops, such as those for speeding 20 miles per hour over the limit, officer bias is less likely to influence stop behavior. In contrast, officer bias can play a large role in high-discretion stops such as those for failing to signal, following too closely, or not wearing a seatbelt. When conducting the analysis, researchers need to account for different age demographics between non-minorities and minorities. There is one major difference between blind observation and the high/low discretion method. The high/low discretion approach does not account for differences across racial groups in the tendency to violate traffic laws because the stop data and benchmark data cover different types of traffic law violations.

2.3.9.5 Observational Studies

Observation benchmarking was the method used in early attempts to study racially biased policing. Using this method, researchers compared the racial profile of drivers or those who violate traffic laws in specific areas to the profile of drivers stopped by police in the same vicinity.[116]

There are two types of observational techniques: stationary and mobile observation.[117] Some researchers have indicated that the use of stationary observers to determine the race of drivers on highways is unreliable because of the difficultly of seeing occupants of cars passing at high speeds.[118] As an alternative, researchers have created mobile units that travel along roads observing the characteristics of drivers.[119] Researchers must decide if they wish to collect data on all drivers or on

[115] *See* footnote 114.
[116] Fridell (2004); Smith and Alpert (2002).
[117] Withrow (2004); Fridell (2004).
[118] Smith, et al. (2003).
[119] Smith, et al. (2003).

traffic law-violators only.[120] In some cases, the mobile observers traveled at the speed limit to identify the demographic characteristics of the drivers who passed them (speed limit violators). PERF states that it is preferable to collect data on violators only, because this approach addresses the hypothesis that different racial groups violate traffic laws at different rates.[121] For ease of observation, most studies that have used the observation method focused on speeding violations. However, in doing so they limit the amount of stop data they can use in their comparison. If a study observes violators and not just drivers, this benchmark addresses the hypothesis that racial groups are not equal in their propensity to violate traffic laws. If a study observes drivers generally, then this benchmark does not address that alternative hypothesis.

Before setting out to collect observations, researchers must determine the type of location from which observations will be made. They can choose between "hot spots," where frequent traffic violations occur, and areas that are representative of the jurisdiction as a whole.[122] Researchers must also decide whether to use a random subset of locations that meet their criteria or to choose the locations systematically. Other items that must be addressed are the time of day of the observation as well as the time of year. Researchers must attempt to control for temporal and seasonal irregularities.

Several obstacles may arise when researchers use observational studies to generate a baseline against which to compare stop data. First, it may be difficult to identify the race of passing motorists.[123] The problems associated with identifying motorists' race can be exacerbated by factors such as darkness, speed, tinted windows, and traffic volume. To minimize this problem, some studies have used only two, or in some cases, three categories of race.[124] The disadvantage of this solution is that information about specific racial groups is lost when aggregating to these broad categories.

Another drawback of this method is that the results cannot be generalized to all types of traffic violations because researchers are able to conduct their observations only at a small sample of jurisdiction roads and are limited to the traffic-law-violating activities they include in the data set (e.g., speeding violations only).[125]

Field observations are also time consuming, labor intensive, and expensive. As a result, they typically can be undertaken only at a limited number of locations within a jurisdiction.

[120] Fridell (2004).
[121] Fridell (2004).
[122] Fridell (2004).
[123] Smith and Alpert (2002); Engel and Calnon (2003); Fridell (2004); Withrow (2004).
[124] Fridell (2004); Engel and Calnon (2004).
[125] Fridell (2004).

2.3.9.6 Crime Data

Crime data have been suggested as a possible benchmark for investigative motor vehicle stops.[126] However, crime data have not been shown to provide an appropriate benchmark for non-investigative traffic stops because the demographic profile of people who violate traffic laws is not necessarily the same as the profile of people who commit crimes.[127] Crime data may provide a more accurate benchmark for pedestrian stops than traffic stops because pedestrian stops are more likely to be based on reasonable suspicion that a crime has or is about to occur.[128] Although promising, there has been little academic research on the analysis and interpretation of pedestrian stops.[129]

One potential weakness of this benchmark is that crime data may not represent the demographic profile of those who actually commit crimes if they are only collected for crimes to which police respond and an agency practices racially biased policing in responding to crime.[130] As a possible solution to this problem, a more reliable benchmark may be arrest data for low-officer-discretion crimes, because these data are the least likely to be influenced by officer bias. Low-discretion crimes include arson, aggravated assault, auto theft, burglary, false imprisonment, forgery, hit and run, possession of a dangerous weapon, robbery, sexual assault, manslaughter, and murder. However, in order to implement this benchmark, agencies must have information about race in crime data.

2.3.9.7 Traffic Accident Data

In this relatively new approach, researchers compare the profile of drivers stopped by police to that of motorists involved in traffic accidents.[131] Research suggests that data from non-fatal accidents are preferable to data from fatal accidents because the profile of motorists involved in fatal accidents differs from the profile of people who drive, or even from that of people who drive poorly.

There are some concerns about using data from non-fatal accidents as a benchmark. First, not all agencies record the race of drivers involved in traffic accidents. Second, there is evidence that different racial groups report accidents at different rates. For example, illegal immigrants may be less likely to report accidents than others. This will tend to reduce the representation of minorities in the benchmark relative to their true presence in the population. It has also been argued that police may not

[126] Connecticut Division of Criminal Justice (2000); Missouri Attorney General's Office (2000) Greenwald (2004); Thomas (2002); Spitzer (1999); Petrocelli, et al. (2003); Smith and Petrocelli (2001).
[127] Fridell (2004); Petrocelli, et al (2003).
[128] Alpert, et al. (2004).
[129] Fridell (2004).
[130] Fridell (2004).
[131] Withrow (2004); Fridell (2004).

respond to accidents in the same manner in all sub-areas of a jurisdiction. Busy officers in high-crime areas may be less likely to take reports on minor accidents than officers in less busy areas.

One variation on this approach is to limit the benchmark to not-at-fault drivers in traffic accidents.[132] Because accident victims are not chosen based on their race, they are expected to represent an unbiased sample of the racial makeup of a jurisdiction. Researchers in one such study concluded that not-at-fault drivers appear to represent a reasonable estimate of the racial composition of drivers on the road at a sample of high traffic intersections.[133] The researchers recommended aggregating the data at different levels to facilitate comparison to police stops. This method could account for the theories that different groups drive and violate traffic laws at different rates, but it has not yet been thoroughly tested.[134]

2.3.9.8 Survey Data

Some researchers have attempted to use surveys of residents in a jurisdiction to develop benchmarks for stops.[135] Researchers use responses about race, age, and driving behavior to develop a benchmark. One advantage of this method over other benchmarks is that surveys can reach people who have not been stopped by police, as well as some who have been stopped.[136] Some other benchmarking methods rely on data collected by police, which cover only motorists who were stopped. Another advantage is that information may be collected on behaviors related to the risk of being stopped. Therefore, this type of survey can account for the alternative hypotheses related to driving behavior.

In general, the major drawback of survey data is the fallibility of respondents.[137] Respondents may forget or purposefully mislead researchers with their responses to surveys. Also, many respondents may actually not know why they were stopped, especially if their stops did not result in a citation.

2.3.9.9 Internal Benchmarking (Officer-to-Officer Comparisons)

Another potential method of benchmarking stop data is through officer-to-officer comparisons, sometimes referred to as internal benchmarking. As discussed previously, internal benchmarking

[132] Fridell (2004).
[133] Alpert, et al. (2004).
[134] Fridell (2004).
[135] Fridell (2004).
[136] Engel and Calnon (2004).
[137] Engel and Calnon (2004).

involves the comparison of the stop activity of similarly situated officers (i.e., officers on the same shift, in the same area, and/or on the same assignment).[138]

Although internal benchmarking can address all four of the alternative hypotheses explaining differences in the number of stops across racial groups, this approach has some notable limitations. First, unless the officers or groups of officers are perfectly matched to peers in their shift, area, assignment, etc., there may be some systematic differences when compared to one another that are unrelated to biased policing.[139] Researchers must consider this possibility when analyzing results and drawing conclusions. Another major limitation of this method is its inability to determine if either all or none of the individuals/groups used in the comparison are practicing racially biased policing since both the stop and benchmark data come from the same pool of officer stop data.[140] In other words, an internal analysis assumes that the group of officers against which individual officers are compared does not itself engage in racially biased policing. If an entire police department or shift is racially biased, then an outlier analysis may not uncover biased individuals.

2.3.10 Confounding Factors

For data analysis, it is important to fully and accurately account for all factors that determine whether a stop is made or a search is conducted. If some determinants are not properly accounted for, disparities in the proportion of stops or searches may be incorrectly attributed to racially biased policing. This is the fundamental reason that multivariate analysis is preferred to bivariate analysis – it provides a method to control for confounding factors if data are available and usable. Several factors have been suggested for inclusion in multivariate analyses:

- suspect characteristics – age, race, sex, demeanor, appearance, behavior, nature of violation;[141]
- officer characteristics – age, race, sex, length of service, training, current assignment;
- encounter characteristics – time of day, day of week, type of vehicle, volume of traffic; and
- jurisdictional characteristics – departmental deployment strategy, legal requirements for stops, departmental policies on stops, population density, socioeconomic disadvantage.[142]

Many early studies of racially biased policing lacked significant contextual variables such as location. Capturing location may be important for determining whether officers are more likely to

[138] Fridell, et al. (2001).
[139] Fridell (2004).
[140] Walker and Alpert (2004).
[141] For more on demeanor and behavior, *see* Engel (2003), Lundman (1994), and Klinger (1996).
[142] McMahon, et al. (2002); Engel, et al. (2002); Quinton, et al. (2000).

conduct a search in a poor, high crime neighborhood or one that is more affluent with lower crime rates.[143]

In order to address the issue of different stop frequencies across geographic areas, PERF recommends that analyses be conducted on sub-areas of a jurisdiction.[144] When dividing a jurisdiction, the level of stop activity should be fairly uniform within a given sub-area. This will serve as a control for the volume of stop activity by police.

The severity of the offense may also be an important variable because of its relation to officer-discretion.[145] For example, officers have much less discretion in stopping someone for speeding 20 miles per hour over the speed limit than for failing to signal. Including the severity of the offense as an explanatory variable in a multivariate model is an attempt to control for potential differences across stops in officers' ability to exercise discretion and therefore to racially profile. Similarly, when analyzing the outcomes of searches, it may be important to account for the type of search.[146] Some searches (e.g., those that are incident to arrest, or result from the towing of a vehicle) may involve less discretion than others (e.g., investigative searches) and should be distinguished for purposes of analysis. Most studies have treated all searches in the same manner.

There have been only a small number of multivariate analyses that accounted for officer demographics. Researchers in Richmond, Virginia found that officer race did not predict disparate treatment of minorities.[147] However, one study found that officer characteristics were significant predictors in some models.[148]

2.4 Findings of Academic Studies Regarding Racially Biased Policing

There is a small, but growing collection of academic studies that have analyzed stop and post-stop data for evidence of racially biased policing. The jurisdictions studied include Richmond, Virginia;[149] Overland Park, Kansas;[150] the state of Maryland;[151] the state of Missouri;[152] and London, England, to name a few.[153] These academic studies have been complemented by a number of studies

[143] Schafer, et al. (2004).
[144] Fridell (2004).
[145] Batton (2004).
[146] Schafer, et al. (2004).
[147] Smith and Petrocelli (2001).
[148] Schafer, et al. (2004).
[149] Petrocelli, et al. (2003); Smith and Petrocelli (2001).
[150] Novak (2004).
[151] Gross and Barnes (2002); Knowles and Persico (2001).
[152] Rojek, et al. (2004).
[153] Miller (2002).

undertaken or sponsored by police agencies, local governments, and other jurisdictions across the country. Chapter 4 includes detailed reviews of a number of these jurisdictional studies.

Generally, the academic studies have revealed disparities between the rates at which whites and minorities are stopped.[154] However, most of these studies involved only simple bivariate analyses. Because bivariate techniques do not allow researchers to control for factors other than race that may influence the stop decision, the results of these studies have often been inconclusive. Without controlling for other confounding factors, it has not been possible to determine whether the observed disparities in stop rates are likely due to racial bias in policing or other legitimate factors that may affect law enforcement activity. Increasingly, more sophisticated multivariate techniques are being used to analyze stop data.[155] While these approaches hold promise for advancing our understanding of the role of race in the decisions by police about whom to stop, neither a standard analytic approach nor a consistent set of findings has emerged from the academic literature. In the absence of a standard analytical approach, it is difficult to make any comparative conclusions about racial profiling in different jurisdictions. It can only be noted that studies have found diverse outcomes. One author reviewed 13 studies and found that six concluded that there was racial discrimination in stop activity, while the other seven concluded that there may have been other factors that the models did not take into account that explained disparities in stop rates, thus making the findings inconclusive.[156]

With regard to the analysis of post-stop activity, the results regarding racially biased policing have also been mixed. Some studies found disparities in post-stop outcomes (e.g., search success rates or hit rates) across races, while others did not. One paper that reviewed 16 studies found that the hit rate in traffic, pedestrian, and airport stops was higher for minorities (indicating no disparate treatment of minorities) in one half of the studies and lower for minorities (which may be a sign of disparate treatment) in the other half of the studies.[157] The diversity of conclusions may be due to a number of factors including differences in the quality of data, the analytical techniques used, the legitimate factors accounted for in the analyses, and police practices across agencies.

2.5 Conclusion

A number of lessons can gleaned from the research that we have reviewed. First, research on the stop practices of law enforcement agencies as it pertains to concerns about racially biased policing

[154] Engel and Calnon (2004); Petrocelli, et al. (2003); Lundman and Kaufman (2003); Gross and Barnes (2002); Engel (2004); Novak (2004); Rojek, et al. (2004); Smith and Petrocelli (2001).
[155] Engel and Calnon (2004); Petrocelli, et al (2003).
[156] Engel, et al. (2002).
[157] Engel and Calnon (2004).

is an evolving science. Increasingly, more sophisticated multivariate techniques are being used to analyze stop data. While these approaches hold promise for advancing our understanding of the role of race in decisions by police about whom to stop and what actions to take after a stop, a standard analytical approach has yet to emerge. Nonetheless, a consensus regarding the attributes of a well-designed study of stop data has begun to emerge. Most analysts concur that:

- idiosyncratic attributes of each jurisdiction must be considered in a study of stop data;
- legitimate factors that may influence stop activity should be captured as carefully and completely as possible;
- limitations of the existing data for measuring these factors should be considered in the development of any methodology;
- disparities that remain even after accounting for quantitative influences on stop activity should be evaluated in the context of qualitative information pertaining to the stops; and
- even the most sophisticated empirical analyses may be inadequate to deliver an unambiguous answer to the question: "Is there race profiling?"

Thus, although no definitive approach to stop data analysis has yet emerged, the careful thought and increasingly sophisticated analysis developed in the academic literature points to a number of promising analytical approaches. If properly implemented, these analyses can serve to highlight areas in which the existence of racially biased policing seems to be a strong possibility, based on persistent discrepancies in the treatment of minorities that cannot be explained by either quantitative or qualitative factors. We have a firm belief that such a serious and thoughtful evaluation of stop data can provide valuable insights regarding the possible presence of racial bias in law enforcement in Los Angeles. After laying additional groundwork for understanding the challenges in evaluating stop data (in Chapters 3, 4 and 5), we will return in Chapter 6 to develop the most promising methodologies for evaluating stop data in the City of Los Angeles.

CHAPTER 3: REVIEW OF OTHER JURISDICTIONS

3.1 Background and Purpose

Numerous local and state law enforcement agencies collect traffic stop data. Some collect the information pursuant to state mandates, consent decrees, or legal settlements, while others collect the data voluntarily to determine the pattern of stops initiated by their officers. However, only a small proportion of these jurisdictions have issued reports analyzing their data.[158]

This chapter reviews, evaluates, and documents the data collection procedures and data analysis methodologies of a sample of the jurisdictions that collect and analyze stop data. For the purposes of this project, Analysis Group was interested in reviewing studies completed in jurisdictions that were in some respects similar to Los Angeles. So for example, jurisdictions that provided policing services in urban environments were favored over agencies that were limited to freeways. However, it is difficult to identify law enforcement agencies and associated jurisdictions that are fully comparable. This is especially true for Los Angeles because of its size, both geographically and in terms of population, its racial diversity, and the size and composition of its police department. We focused on other jurisdictions in California and those agencies with the most current and sophisticated studies on racial bias in policing. We also considered jurisdictions that, like Los Angeles, are required by a consent decree to collect stop data.

Based upon the above considerations, Analysis Group, with assistance from City of Los Angeles officials, selected the following 13 jurisdictions for review:

- California Highway Patrol (CHP);
- Los Angeles County Sheriff's Department;
- Sacramento (CA) Police Department;
- San Diego (CA) Police Department;
- San Francisco (CA) Police Department;
- San Jose (CA) Police Department;
- Charlotte-Mecklenburg (NC) Police Department;
- Columbus (OH) Division of Police;
- Denver (CO) Police Department;
- Houston (TX) Police Department;

[158] For a list of agencies that collect stop data and have published reports analyzing the data, *see* the website for the Racial Profiling Data Collection Resource Center at Northeastern University (www.racialprofilinganalysis.neu.edu).

- Miami-Dade (FL) Police Department;
- New York City (NY) Police Department; and
- Pittsburgh (PA) Bureau of Police.

In compiling this jurisdictional review, Analysis Group synthesized information from each of the studies conducted by or for the jurisdiction. We treated each one as a case study. We reviewed data analysis reports when available, and supplemented information with interviews of the police representatives and/or researchers who conducted the studies. The sections below review the principal methodologies and findings of these jurisdictional studies. In addition, City of Los Angeles representatives discussed stop data collection issues with the 13 jurisdictions. A matrix containing all data gathered from each jurisdiction is set forth in Appendix C. Data for LAPD, where available, has also been included in Appendix C.[159]

3.2 Principal Methodologies and Findings of the Jurisdictional Studies

3.2.1 Number of Studies Completed

All of the 13 jurisdictions selected for review had collected stop data and 10 had completed an analysis of the data. Two jurisdictions, the Los Angeles County Sheriff's Department and Pittsburgh Bureau of Police, had not conducted data analysis or published a public report. The Miami-Dade Police Department has recently completed data analysis and its public report is anticipated to be released in the near future.[160] In these three cases, Analysis Group interviewed the agencies and/or researchers in order to gather information about their data collection and analysis efforts.

Several of the jurisdictions, including Sacramento, San Diego, San Jose, and Denver, have analyzed multiple years of data. In these cases, Analysis Group reviewed the most current year's report and questioned the agencies or researchers about that time period.

3.2.2 Authorship of the Studies

In terms of authorship, the jurisdictional studies followed one of four models:

1) Internal studies;

2) External consultant studies;

3) Internal and external joint studies; and

4) External non-consultant studies.

[159] LAPD is included in the appendices (C and D) for comparison purposes only. It is not included in the summaries or tables in this chapter.

[160] While we were provided some information regarding the data and methodologies utilized in Miami-Dade, we were not able to review their findings or conclusions.

Internal studies are those conducted by the police agencies themselves. Two studies, those by the CHP and San Jose Police Department, are considered internal studies. External consultant studies are those that were commissioned by the police agency or city to be conducted by outside consultants (i.e., consulting firms, academics, or academic institutions). In six jurisdictions, Sacramento, San Diego, Charlotte-Mecklenburg, Columbus, Denver, and Miami-Dade, external consultants conducted the studies. Internal and external joint studies are those that were conducted by police agencies in conjunction with outside consultants. Houston was the only such joint study. External non-consultant studies are those conducted by other interested parties, not the jurisdiction or consultants commissioned by the jurisdiction. There were two such studies – San Francisco and New York. The ACLU conducted the San Francisco study and the New York State Attorney General's Office with research support from a team of academics conducted the New York study.

3.2.3 Date of Studies and Time Periods Analyzed

For the jurisdictions that published studies, publication dates ranged from December 1999 (New York) to April 2004 (Sacramento). The Miami-Dade study is expected to be released in the near future. Although the studies cover what might seem to be a short period of time, the best practices for evaluating stop data have evolved quickly. Thus, updated references are critical to track changes in this emerging field of study. Table 3.1 lists the number of completed studies that were published each year from 1999 through 2004.[161]

Table 3.1 Year of Publication

Year Published	Number of Studies	% of Total
1999	1	10%
2000	1	10%
2001	0	0%
2002	3	30%
2003	2	20%
2004	3	30%
Total	**10**	**100%**

The earliest data analyzed in the studies were collected in 1998 (New York), and the most recent data were collected in 2002 and 2003 (Sacramento and Denver). Nine of the 11 jurisdictions for which information was available included an analysis of data that had been collected for a period of at

[161] The Los Angeles County Sheriff's Department and Pittsburgh Bureau of Police had no studies. The Miami-Dade Police Department study has not yet been released.

least 12 months.[162] The analysis with the longest data collection time period was New York, with 15 months. The two studies with less than one year of data included the CHP, with 10 months of data, and Miami-Dade, with seven months. If stop activity varies by season, then it would be preferable to evaluate a full year of data. Some of these studies involved the analysis of less than a full year of data.

3.2.4 Size of Jurisdictions

The size of a jurisdiction can be measured several ways. Table 3.2 presents the sizes of the jurisdictions as measured by the number of stops by police officers, number of officers, population, and square miles. These varied significantly. As discussed in detail below, there is no single jurisdiction in the study that is comparable to Los Angeles in all measures of size. Some jurisdictions are comparable for certain measures, but not others.

Table 3.2 Size of Jurisdiction

Jurisdiction	Stops	Months	Stops per Month	Officers	Population	Square Miles
California Highway Patrol	2,638,589	10	263,859	6,700	33,500,000	15,234
Houston Police Dept.	540,760	12	45,063	4,000	1,941,240	617
Denver Police Dept.	153,560	12	12,797	1,402	550,000	155
New York Police Dept.	174,919	15	11,661	40,000	8,000,000	321
San Diego Police Dept.	121,013	12	10,084	2,104	1,223,400	342
Miami-Dade Police Dept.	66,109	7	9,444	1,659	1,181,612	1,333
San Jose Police Dept.	89,889	12	7,491	1,400	894,943	176
Charlotte-Mecklenburg Police Dept.	82,774	12	6,898	1,500	650,000	488
Columbus Division of Police	64,089	12	5,341	1,800	771,000	213
San Francisco Police Dept.	50,419	12	4,202	2,300	776,733	47
Sacramento Police Dept.	34,839	12	2,903	651	441,000	98
Los Angeles County Sheriff's Dept.	N/A	N/A	N/A	9,000	2,692,412	3,154
Pittsburgh Bureau of Police	N/A	N/A	N/A	900	335,000	55
Average	**365,178**	**11.6**	**34,522**	**5,647**	**4,073,642**	**1,710**
Los Angeles Police Department	**1,256,186**	**21**	**59,818**	**9,000**	**3,800,000**	**468**

The number of sworn officers in the studies ranged from 651 in Sacramento to 40,000 in New York. The average size of the jurisdictions was 5,647 officers including New York, and 2,785 officers excluding New York. The jurisdictions with the police forces most comparable in size to the LAPD's (which has approximately 9,000 officers) were the Los Angeles County Sheriff's Department with 9,000 officers and CHP with 6,700 officers.

[162] Time period analyzed excludes the Los Angeles County Sheriff's Department and Pittsburgh Bureau of Police, which had no studies during the period.

The New York Police Department served approximately 8 million residents, which is the largest population in our study except for the CHP. Next in size of population served was the Los Angeles County Sheriff's Department with 2.7 million residents. The jurisdictions with the smallest populations were Pittsburgh with 335,000 and Sacramento with 441,000. The average population of the jurisdictions studied was 4.1 million including the CHP, and 1.6 million excluding it. The jurisdictions with the most comparable population to Los Angeles (3.8 million) were the Los Angeles County Sheriff's Department (2.7 million) and the Houston Police Department (1.9 million).

The largest service areas were the CHP with 15,234 square miles, the Los Angeles County Sheriff's Department with 3,154 square miles, and Miami-Dade with about 1,333 square miles.[163] The smallest service areas were San Francisco with 47 square miles, Pittsburgh with 55 square miles, and Sacramento with 98 square miles. The average service area was about 1,710 square miles including the CHP, and 583 square miles excluding the CHP. The jurisdictions with the most comparable service areas to Los Angeles (468 square miles) were Charlotte-Mecklenburg (488 square miles) and San Diego (342 square miles).

Although there may be some lessons learned from reference to the studies conducted in these jurisdictions, it is clear that a methodology for evaluating stop activity must be tailored to each unique jurisdiction. The factors that influence stop activity vary with factors described here – force size, population, population density, geographic area, and the sheer volume of stop activity. Thus, an analysis that is appropriate for one of these jurisdictions may not serve the City of Los Angeles well unless adapted to the unique circumstances of Los Angeles.

3.2.5 Number of Stops

There was a large variation in the number of stops analyzed in the various studies. The jurisdiction with the largest number of stops per month was the CHP, with about 263,859. However, as noted before, this was a statewide highway and freeway study. Houston had the largest number of stops per month for a city police agency, with 45,063. Sacramento had the smallest number of stops per month, with about 2,903. The average number of stops per month across the studies was approximately 34,522 including CHP, and 11,588 excluding CHP. The jurisdiction with the number of stops per month closest to that of the LAPD (average stops per month were approximately 59,818 from January 2002 through March 2004) was Houston, with 45,063 stops per month.[164]

[163] For Miami-Dade, the size of the unincorporated county is approximately 2,000 square miles, but one-third of the area is the Everglades National Park.
[164] As discussed in Section 5.2.1, LAPD officers made 1,256,186 stops over 21 months.

The number of stops is not always positively correlated with the measures of size of a jurisdiction (i.e., number of sworn officers, population, and service area). This may be the result of differences in the definition of a stop, officer compliance rates in completing stop forms, whether pedestrian and traffic stops were recorded, and other factors affecting the number of stops, such as crime rates and trends. The variation in the number of stops across jurisdictions indicates a need for the development of methodologies that capture the realities of stop activity unique to each jurisdiction.

3.2.6 Definition of a Stop

Definitions of a stop varied across jurisdictions. San Jose, Miami-Dade, Columbus, and Denver recorded only discretionary stops. All of the other jurisdictions were more inclusive in their definition. For instance, CHP defined stops as all enforcement actions, including non-enforcement-related services, such as traffic collisions. The Los Angeles County Sheriff's Department included calls for service. Sacramento, San Diego, Charlotte-Mecklenburg, Houston, New York, and Pittsburgh, appear to have included all types of stops.[165]

As noted in Chapter 2, research in this field suggests that an important factor to be considered when analyzing stop data is the discretion officers have in deciding whether to make a stop.[166] Situations with higher levels of discretion (usually violations of less severity) are more susceptible to biased policing. Thus, the studies that collect data only on more discretionary stops or those that distinguish the types of stops in the analysis are likely to offer more reliable evaluations of racial bias. As noted in Chapter 6, Analysis Group recommends the City follow the path of those jurisdictions that have made the distinction between discretionary and non-discretionary stops.

3.2.7 Pedestrian v. Motor Vehicle Stop Data

Five jurisdictions -- the Los Angeles County Sheriff's Department, Charlotte-Mecklenburg, Columbus, Denver, and Houston, -- collected data on both pedestrian and traffic stops.[167] New York City collected only pedestrian stop data. Table 3.3 details the number of jurisdictions that collected stop data for pedestrians, motor vehicles, or both types of stops.[168]

[165] Certain exclusions may exist in some jurisdictions.
[166] Ramirez, et al. (2000).
[167] Columbus only collects pedestrian stops related to traffic violations (e.g., jaywalking).
[168] Pittsburgh Bureau of Police is excluded.

Table 3.3 Type of Stops Recorded

Type of Stop	Number of Jurisdictions	% of Total
Pedestrian Only	1	8%
Traffic Only	7	54%
Both	5	38%
Total	**13**	**100%**

Of the five jurisdictions with data on both pedestrian and motor vehicle stops, three conducted separate analyses of the data by the type of stop. Separate analyses may be appropriate since traffic stops are more likely to be made in response to a violation of traffic laws and pedestrian stops are more likely to be investigative stops in response to reasonable suspicion of criminal activity.[169] As discussed in Chapter 6, Analysis Group recommends separate analyses of pedestrian and motor vehicle stops.

3.2.8 Data Collection Methods

The jurisdictional studies used three methods to collect stop data. Officers either filled out paper stop forms, entered data electronically, or communicated data verbally to dispatchers. The completion of paper forms was the most frequently used method (eight jurisdictions), followed by electronic data entry (four jurisdictions), and verbal communications (one jurisdiction). *See* Appendix D for a matrix containing all stop data elements collected for each of the 13 jurisdictions. Although many jurisdictions are moving towards electronic data entry, the study of data gathered on paper stop forms that are then input into an electronic database is considered to be of sufficient reliability for analysis, provided that input process is carefully controlled.

3.2.9 Characteristics Analyzed

The majority of the studies recorded and analyzed the race as well as the gender and age of persons stopped (*see* Table 3.4). Six of the 11 studies recorded all three characteristics.[170] Three others recorded gender or age with race.

[169] While, the Los Angeles County Sheriff's Department and Pittsburgh Bureau of Police collect both pedestrian and motor vehicle data, no report or analysis was available for either jurisdiction.
[170] The Los Angeles County Sheriff's Department and Pittsburgh Bureau of Police are excluded because no report or analysis was available.

Table 3.4 Characteristics Analyzed

Characteristics Analyzed	Number of Studies	% of Total
Race Only	2	18%
Race and Gender	2	18%
Race and Age	1	9%
Race, Gender, & Age	6	55%
Total	**11**	**100%**

The majority of the studies collected data about the characteristics of drivers other than race. However, these characteristics were not included as the variable of primary interest (i.e., the dependent variable) in a multivariate analysis of stops or post-stop activity. The Charlotte-Mecklenberg study used gender and age as control variables in multivariate analyses of race. In the other studies, summary statistics were presented on gender and age.

We anticipate that gender and age will be important control variables in our study of stops in the City of Los Angeles. Moreover, as noted in our discussion of the literature in Chapter 2, as well as in the development of our methodologies in Chapter 6, some analyses of disparities in stop outcomes with respect to gender or age may be informative in an investigation of potential biased policing.

3.2.10 Known Error Rates in the Stop Data

Five of 10 jurisdictions with completed studies acknowledged error rates in the stop data. Three of the five studies reported the source of error as low officer compliance in completing data forms. The source of error in the other two studies related to missing and/or inaccurate data.

Two of five studies that documented error rates discussed the potential implications of these errors. In San Diego, the study noted that the high officer non-compliance rate severely limited the confidence that can be placed in any findings and conclusions. In San Francisco, the ACLU study noted that underreporting of stops by officers led to conservative conclusions regarding the existence of racially biased policing.

We believe that a clear understanding of the implications of the error rate in stop data is critical to evaluating limitations of any quantitative findings. Therefore, we have reported our assessment of the quality of the stop data in Chapter 5 in considerable detail. Like other analysts, we recognize that the LAPD stop data are not perfect, but find them to be of sufficient quality to recommend their use in our proposed studies. Moreover, we have provided assessments of the quality of the other data that we intend to use.

3.2.11 Auditing of Stop Data

Any meaningful understanding of data quality requires some data auditing. Twelve of the 13 jurisdictions employed some sort of auditing technique for stop data.[171] Nine audits were conducted by the police departments (CHP, Los Angeles County Sheriff's Department, San Jose, Charlotte-Mecklenburg, Columbus, Denver, Houston, New York, and Pittsburgh), while three were conducted by the outside researchers (Sacramento, San Diego, and Miami-Dade).

Auditing techniques varied from jurisdiction to jurisdiction. The most frequent method employed was cross-checking electronic stop data against paper stop forms. This auditing technique guards against data entry errors but does not help catch errors made on the stop forms. A second auditing technique was cross-checking stop data against other independent data sources. These sources include citation records, radio calls (confirming a traffic stop with dispatch), information on citizen contact cards, and officer daily activity sheets. To check for accuracy, the Miami-Dade County study compared information on driver race captured by officers in the field to driver's license photographs. A third auditing approach involved interviewing police officers and drivers who were stopped and using the interview information to validate the data recorded on the forms. Another approach that some jurisdictions employed is called the supervisory review process, in which the stop data coordinator or supervisor reviewed submitted forms for completeness, accuracy, and the appropriateness of the stop recorded. Finally, in some jurisdictions, suspicious forms that suggest irregularities were investigated. The auditing techniques used by the City of Los Angeles (as detailed in Section 5.2.1) are consistent with or superior to the quality assurance measures adopted in these other jurisdictions.

3.2.12 Feasibility of Determining Suspect Race

In order to conduct a racially biased stop, officers must be able to assess the race of the person prior to the stop.[172] If officers cannot make a determination about race, regardless of whether they are correct in their assessment, then it is not possible to profile a person racially when making a stop.

Two studies provided analysis of whether race could be identified by officers. Both concluded that in a large proportion of cases, officers could not identify race. In Sacramento, researchers concluded that, after ride-alongs with officers, race could not be identified prior to the stop in most

[171] Data auditing techniques were not available for San Francisco.
[172] Identification of race may include the use of indicators other than skin color, including clothing and vehicle characteristics.

cases. In Denver, officers self-reported that they could not identify race prior to a stop in 24 percent of pedestrian stops and 92 percent of motor vehicle stops.

The results of Analysis Group's LAPD Ride-Along Study are reported in Chapter 4. LAPD officers were unable to identify race prior to the decision to make a stop in a significant portion of all stops, particularly stops of motor vehicles. We believe this finding has important implications for developing a reliable benchmark for a motor vehicle stop analysis.

3.2.13 Types of Analyses Performed

Two general types of analytical techniques were used in the studies: bivariate and multivariate analyses. As discussed in the literature review in Chapter 2, bivariate analyses examine the relationship between two variables, and multivariate analyses examine the relationship between more than two variables. As a result, a multivariate analysis can control for legitimate factors that explain stops, thereby allowing for more definitive conclusions regarding the relationship between the key variables of interest. Both bivariate and multivariate analyses may employ simple methods of analysis, such as summary statistics, or advanced statistical techniques, such as regression or hypothesis testing (e.g., t-tests or Chi-square tests). A regression analysis identifies and quantifies a relationship between variables.

3.2.13.1 Stop Analyses

All of the studies for which information was available (11 jurisdictions) conducted stop analyses of one sort or another. Three types of stop analyses were conducted in these jurisdictional studies: benchmark/baseline analyses; geographic disparity studies; and internal benchmarking (i.e., officer-to-officer comparisons).

3.2.13.1.1 Benchmark/Baseline Analysis

Table 3.5 presents the types of benchmark/baseline analyses used in the studies. All 11 of the jurisdictions with available information conducted a benchmark/baseline analysis for stops.[173]

[173] This includes Miami-Dade, where some information about the analyses in the forthcoming study was available.

Table 3.5 Types of Stop Benchmark/Baseline Analyses

Types of Analysis	Techniques Used	# of Studies	% of Total
Bivariate	Descriptive	11	100%
	Advanced	1	9%
Multivariate	Descriptive	8	73%
	Advanced	1	9%

However, the type and sophistication of the analyses varied widely across the studies. All 11 studies included bivariate descriptive analyses, such as cross-tabulations of stops by race. Eight of the 11 included multivariate descriptive analyses, which controlled for other relevant factors. Two studies included advanced techniques, such as regression analysis, in the benchmark/baseline analysis. One of these jurisdictions conducted bivariate advanced analyses and the other jurisdiction conducted multivariate advanced analyses.

Based upon Analysis Group's review of the evolving law and literature, multivariate analyses, which control for other relevant factors affecting stop activity, are now widely considered a critical element to any study of potential race bias in policing. Analysis Group strongly recommends that all legitimate factors that are identifiable and measurable be included in all analyses.

3.2.13.1.2 Geographic Disparity Analysis

Table 3.6 presents the types of geographic disparity analyses that were used in the studies. Of the 11 jurisdictions for which Analysis Group has information, seven conducted some type of geographic disparity analysis. Four jurisdictions employed simple descriptive analyses. Three studies used more advanced techniques.

Table 3.6 Types of Geographic Disparity Analyses for Stops

Types of Analysis	Techniques Used	# of Studies	% of Total
Bivariate	Descriptive	6	55%
	Advanced	2	18%
Multivariate	Descriptive	7	64%
	Advanced	3	27%

In the jurisdictional studies reviewed, the geographic areas used as the units of comparison were police precincts or districts (in San Diego, San Francisco, San Jose, Columbus, and New York) and census blocks or tracts (in Sacramento and Charlotte-Mecklenburg). These geographic disparity studies, particularly the ones using more advanced techniques, were instrumental in providing a fuller evaluation of potential race bias in stop outcomes.

3.2.13.1.3 Internal Benchmarking (Officer-to-Officer Comparisons)

Only the Sacramento study used internal benchmarking to analyze stop data. The study compared stop activities between officers. Peer groups were developed based on the race of the officer that initiated the stop. Although internal benchmarking has not been widely implemented in previous studies, it is now emerging as one of the more frequently recommended types of analyses for the reasons discussed in Chapter 2 (*see* Section 2.3.8.1.3).

3.2.13.2 Post-Stop Analyses

Most of the studies (10 of the 11 jurisdictions for which information was available) conducted analyses of post-stop activities (i.e., searches and/or arrests). Generally, there were three types of analyses performed on post-stop data: benchmark analysis; geographic disparity analyses; and hit rate analyses.

It is clear from these studies that a focus on post-stop activities can provide invaluable insight into the question of potential race bias. Analysis Group strongly recommends conducting analyses of post-stop activities. Although many of the jurisdictional studies reviewed employed simple hit rate analyses or descriptive benchmark and geographic disparity analyses, the use of more sophisticated approaches that allow for consideration of legitimate reasons for post-stop activities by officers was also prevalent.

3.2.13.2.1 Benchmark Analysis

Table 3.7 presents the types of post-stop benchmark analyses used in the studies. All 10 of the jurisdictions that conducted post-stop analyses used bivariate descriptive analyses, such as cross-tabulations of searches and/or arrests by race. However, four jurisdictions conducted multivariate descriptive analyses to control for other relevant factors. Two studies conducted advanced analyses, such as regression analysis, in the benchmark/baseline analysis. One of them conducted bivariate and multivariate advanced analyses and the other one conducted multivariate advanced analyses.

Table 3.7 Types of Post-Stop Benchmark Analyses

Types of Analysis	Techniques Used	# of Studies	% of Total
Bivariate	Descriptive	10	91%
	Advanced	1	9%
Multivariate	Descriptive	4	36%
	Advanced	2	18%

3.2.13.2.2 Geographic Disparity Analysis

Table 3.8 presents the types of geographic disparity analyses that were used for post-stop data. Of the 11 jurisdictions for which Analysis Group has information, four conducted geographic disparity analyses for post-stop activity. Two studies employed simple descriptive analyses. The other two studies used more advanced techniques, one of which conducted a multivariate advanced analysis.

Table 3.8 Types of Geographic Disparity Analyses for Post-Stops

Types of Analysis	Techniques Used	# of Studies	% of Total
Bivariate	Descriptive	3	27%
	Advanced	2	18%
Multivariate	Descriptive	3	27%
	Advanced	1	9%

In the jurisdictional studies that conducted post-stop geographic disparity analyses, the geographic areas that were used as the units of comparison were police precincts or districts (in San Diego, Columbus, and New York) and census blocks or tracts (in Charlotte-Mecklenburg).

3.2.13.2.3 Search Hit Rate Analysis

Seven of the 10 studies conducted search hit rate analyses (i.e., outcome tests) to analyze whether outcomes of a search were systematically different for minorities and non-minorities.

3.2.14 Types of External Benchmarks/Baselines

To provide evidence of systematic racial profiling by law enforcement, the agency stop data must show that members of a certain race are stopped at a disproportionate rate compared to their

representation in the appropriate population, after controlling for all legitimate factors. Stop rates are calculated using the benchmark or baseline as the denominator, and the stop data as the numerator.

As discussed in Chapter 2, there have been many proposed benchmarks/baselines. The most commonly used benchmark in the 11 jurisdictions for which information was available was census data.[174] All but one of the 11 reports used census data as one of the benchmarks. Many of the studies acknowledged the shortcomings and criticisms of census data but still used them in at least some limited way.

In attempts to address the deficiency of the census data, some studies employed other benchmarks, including state population estimates, traffic crash data, and crime data. The second most common benchmark after census data was traffic crash data, which was used, albeit differently, in two of the three studies. Benchmarks based on traffic data, such as traffic crashes, were used only to evaluate traffic stops. However, in studies that analyzed both pedestrian and motor vehicle stops, census data were used as a benchmark for both.

The difficulties acknowledged by the authors of many of the jurisdictional studies in utilizing census data, together with Analysis Group's review of the literature, supports Analysis Group's conclusion that the inherent flaws associated with using census data as a benchmark outweigh any possible advantages (*see* Section 6.4 for further discussion).

3.2.15 Other Factors Analyzed

The value of multivariate analysis of stops or searches is its ability to account for relevant determinants of the dependent variable (i.e., stops in a stop analysis or searches in a post-stop analysis). If these factors are not explained or accounted for, disparities in the proportion of stops or searches may be incorrectly attributed to racially biased policing.

As previously noted, three studies included advanced multivariate analyses. Some of the main factors that were used to explain stops included crime, geography, police deployment, calls for service, public complaints, justifications for stops, and socioeconomic variables. Many of these factors were used in both stop and post-stop analyses.

It is worth noting that some of the studies involved qualitative evaluations of other factors that were deemed important to determining stops, even though they were not analyzed quantitatively. Factors that were mentioned but not utilized in quantitative analyses included suspect background, crime levels, rate of gang offenses, hit and run accidents, geography, deployment of police officers,

[174] Census data includes population data from the U.S. Census and the California Department of Finance. CHP used the latter census data.

levels of calls for service, levels of public complaints, officer commendations, and whether persons stopped were probationers or parolees.

3.2.16 Conclusions of the Studies

Most of the studies found that minorities were overrepresented in stops, searches, and arrests when simply compared to benchmarks such as census data. However, in most cases, the authors of the studies found that legitimate factors affecting law enforcement activity explained the disparities. While some of the studies controlled for legitimate factors in quantitative analyses, many relied upon qualitative analyses of these factors. Of the studies in which quantitative and/or qualitative analyses of legitimate factors affecting law enforcement did not explain the disparities, a few suggested further investigation before any conclusions regarding racial bias could be made.

3.2.17 Uses of Studies

Despite the fact that many of the studies did not reach definitive conclusions regarding the existence of racially biased policing, they were still helpful in promoting communication with the public and media and developing training programs for officers. The results of nine of the studies were ultimately presented or will be presented to the public through public meetings. The findings from eight of the studies led to new training programs for police officers. For example, as a result of the Sacramento study, the Sacramento Police Department began sending officers to racial tolerance training sponsored by the Simon Wiesenthal Institute of the Anti-Defamation League and developed in-house racial tolerance training. Other police departments responded by: training officers to take more time with drivers whom they stop and to better explain the reasons for the stops; incorporating the findings of the study into training programs; and educating police officers as well as the public concerning the results of the study. Agencies that are continuing to collect data have added training programs to reinforce the need to complete stop forms properly.

3.2.18 Suggestions for Further Research

Of the 10 jurisdictions with available reports, four provided suggestions for further research based on their experiences with collecting and analyzing data. These suggestions included: presenting analyses and results in a manner that is comprehensible to laypersons; validating data and measuring officer compliance rates for completing stop collection forms; improving benchmarking techniques; using more sophisticated techniques to analyze data; comparing results to other jurisdictions across the country; and collecting additional data in order to help analyze issues of racially biased policing.

Those data suggested for inclusion were: number of persons in stopped vehicles and their race; more information regarding post-stop outcomes; and additional years of data.

3.3 Overall Themes Emerging from the Review of Jurisdictional Studies

These jurisdictional studies have been performed over a number of years, with different jurisdictional attributes, and utilizing varied analytical approaches. Nonetheless, a number of important themes are shared across these jurisdictional studies. These common threads will help inform the development of appropriate methodologies for studying stop data collected by the City of Los Angeles.

First, these jurisdictions generally showed evidence of large racial differences in stop rates or stop outcomes in the raw data. That is, when the data are presented with simple descriptive statistics, there is an appearance of a race pattern in stop activity.

Second, the authors and researchers recognized the relevance that legitimate law enforcement activities might have on those patterns observed in the raw data. Although the level of complexity and sophistication varied across the studies, in most circumstances, the analysts attempted to account for these factors quantitatively. Most of the studies made a concerted effort to empirically identify and account for factors that had influenced stops, searches, and arrests, with the quality and the rigor of those efforts improving over time. For example, there has been excellent progress in the search for an appropriate and measurable traffic stop benchmark. Traffic crash data have been used in several studies and appear to hold some promise as a measurable and appropriate benchmark.

Third, as the quality of the data and rigor of the studies improved, the strength of the conclusions the analysts were willing to draw improved, as well. The researchers generally recognized the limitations of the data available to them and the inherent weaknesses in some of the methodologies adopted, and qualified their conclusions appropriately. For example, although census data continue to be relied upon by some analysts, its shortcomings have become well known and recognized. Likewise, over simplified descriptive statistics, while sometimes presented in order to provide context, are not generally relied upon for making definitive conclusions.

Fourth, when analysts have faced difficulties in reaching conclusions due to the inability to quantitatively account for all factors that may influence racial patterns in stop activity, they have turned to more qualitative factors that may shed light on those patterns. The researchers generally treated the quantitative analyses as one step in a broader analytical process for understanding any observed racial patterns in the stop data.

Last, definitive conclusions about the presence or absence of racial profiling have been an anomaly. Most analysts were unwilling to offer definitive conclusions due to concerns regarding the

reliability of the data studied or the limitations of the methodologies employed. Nonetheless, researchers were able to offer valuable insight into the patterns observed in the raw stop data that would not have been available without the analyses they conducted.

We take several lessons from the work of other researchers in these earlier jurisdictional studies. We recognize the importance of quantitatively accounting for as many legitimate factors as possible. Nonetheless, we anticipate that constraints on data may limit the extent to which conclusions can be reached on the basis of empirical analysis alone. We anticipate qualitative approaches may be needed to round out any findings. Moreover, while we believe a quantitative analysis will provide enormous insight into the issue, we do not anticipate such an approach will result in a definitive conclusion as to whether there is race profiling.

CHAPTER 4: RIDE-ALONG STUDY

4.1 Introduction

Understanding the relationship between the races of persons stopped by the police and the population that is available to be stopped is critical to any investigation of racially biased policing. As discussed in the literature and jurisdictional reviews (*see* Chapters 2 and 3), significant difficulties exist in developing a reliable benchmark for motor vehicle stops.

The major difficulty is finding a benchmark that accurately reflects the population at risk of being stopped. However, a more fundamental question is whether LAPD officers can determine the race of suspects prior to making stops. Simply put, if officers cannot make a determination about race, then it is not possible to racially profile when making stops. Some previous research has indicated that law enforcement officers in other jurisdictions were unable to determine race prior to a stop in a significant proportion of stops.[175] In order to investigate whether the identification of race in Los Angeles is problematic, Analysis Group conducted surveys during ride-alongs with LAPD officers.

This chapter presents the results of this ride-along study. First, we determine whether LAPD officers can make a determination about the race of suspects prior to stops.[176] Second, given the unique opportunity to observe officer behavior prior to, during, and subsequent to stops, Analysis Group gathered other data that give context to stop and search activity of LAPD officers.

4.2 Ride-Along Survey Background and Methodologies

In order to gather data from ride-alongs with officers, Analysis Group developed and implemented a survey. This section describes the survey methodology, survey instrument, and implementation of the survey instrument.

4.2.1 Sampling Plan

In order to obtain a reliable sample, 570 hours were scheduled for observing officers in the field. Because these hours were broken up into five-hour shifts, a total of 114 ride-alongs were completed. All of the ride-alongs were conducted with patrol officers, whose responsibilities include patrolling the City, enforcing traffic laws, investigating crimes, and responding to calls for service. Traffic officers, whose primary responsibilities are only enforcing traffic laws and dealing with

[175] *See* Section 3.2.12. Also *see* Smith and Alpert (2002); Thomas and Hansen (2004); University of Southern California School of Policy, Planning, and Development (2004).
[176] It should be noted that the Ride-Along Study did not concern itself with the correctness of officers' determination of race since only officer perception is at issue when it comes to racially biased policing.

accidents, were not observed because motorcycle officers constitute the majority of traffic officers making stops (approximately 90 percent) and observers could not ride with them. The exclusion of traffic officers from the ride-alongs is unlikely to have a significant effect on the principal results of the ride-alongs – whether officers can identify race. Although traffic officers are more likely than patrol officers to use more objective means of identifying traffic violators (e.g., radar), they have the same opportunities to identify the race of violators.[177]

The sampling plan was designed to provide a broadly representative cross-section of LAPD activities during the period of observation. Creating the sampling plan consisted of two steps. First, the geographic areas were randomly selected. Since stop data is recorded by police RD, Analysis Group randomly chose 114 RDs with at least 100 stops in the most recent six-month period for which FDR stop data were available (July 1, 2003, through December 31, 2003).[178] The restriction on the number of stops ensured that only areas with a significant number of stops were included in ride-alongs.[179] The minimum number of stops was determined by inspection of the stop data in order to exclude RDs with only minimal numbers of stops.[180]

The second step of the sampling plan was the random assignment of each selected RD to an observer shift consisting of a day of the week and time of day. In order to evenly disperse the ride-alongs across the days of the week, an equal number of shifts were assigned to each day. Ride-alongs were conducted every day of the week in order to account for motor vehicle and pedestrian activity that may be unique to certain days (e.g., weekends). Since there were 114 ride-alongs and seven days of the week, five days of the week were assigned 16 shifts and two days were assigned 17 shifts. The two days with 17 shifts (Tuesday and Saturday) were randomly selected. In order to get an even representation of day and night ride-alongs, the number of day shifts (7 a.m. to 5 p.m.) was set to equal the number of night shifts (8 p.m. to 1 a.m.). Day and night ride-alongs were conducted in order to account for motor vehicle and pedestrian activity and the ability to determine race, both of which are likely to differ based on lighting conditions. Since observer shifts were only five hours each, the day shifts were divided into two groups: morning (7 a.m. to 12 p.m.) and afternoon (12 p.m. to 5 p.m.). Table 4.1 lists the observer shifts by day of the week and time of day.

[177] If traffic officers could not identify race as readily as patrol officers, it would have the effect of lowering our reported rate at which officers can determine race (presented later in this chapter).
[178] Of the 1,473 RDs, 1,039 had fewer than 100 stops. A large number of these had only one stop recorded.
[179] Even if the racial distribution of those stopped is different from that of the City as a whole, there is no reason to expect bias in the ability to discern race.
[180] Of the 1,473 RDs in the stop data, 1,039 had fewer than 100 stops. A large number of these had only one stop recorded.

Table 4.1 Sampling Plan

Time of Day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Morning	4	4	4	4	4	4	4	4
Afternoon	4	4	5	4	4	4	4	4
Night	8	8	8	8	8	8	9	8
Total	**16**	**16**	**17**	**16**	**16**	**16**	**17**	**16**

4.2.2 Ride-Along Observers

Nine observers conducted the ride-along surveys. The observers were independent contractors with Analysis Group. Five of them were women and four were men. Five were white, one was black, and three were Asian. All of them were either in college or had received a college degree. None of them had any law enforcement background or affiliation, although two had taken courses in criminal justice. Observers were screened prior to participating in this project to ensure their impartiality regarding the subject of racially biased policing.[181]

Ride-along observers were provided approximately six hours of training. This included training on the ride-along survey instrument, instructions on completing surveys and electronic data entry, observational techniques, safety procedures, and administrative issues. The observers were not provided training regarding FDR forms, law enforcement in general, police procedures outside those necessary for the ride-alongs, or the law. Ride-along observers were randomly assigned to shifts, after accounting for their availabilities.

4.2.3 Survey Instrument

Analysis Group developed a survey instrument for the ride-alongs utilizing standard surveying principles and techniques. These principles and techniques have been used by members of the Analysis Group team for similar purposes in other jurisdictions.[182] The survey consisted of 45 questions and was 10 pages in length. Appendix E provides the survey instrument utilized during ride-alongs.

The survey instrument was reviewed by the City of Los Angeles, the LAPD, and the Police Protective League prior to its use. The substance of the survey instrument was not altered as a result of

[181] Ride-along observers were questioned regarding whether they had ever been a law enforcement officer, whether any family members had ever been law enforcement officers, and generally if they could be objective in their role as an observer.

[182] Jurisdictions include Miami-Dade, Florida (Miami-Dade Police Department) and Savannah, Georgia (Savannah-Chatham Metropolitan Police Department).

these reviews. The identity of individual officers remained anonymous in order to encourage officer cooperation and candid responses.

The survey was designed with two purposes in mind. The first purpose was the primary goal of the ride-alongs – to determine whether patrol officers and observers could determine the race or gender of suspects before and during stops. This goal was achieved through survey questions 13, 18, and 22. These questions were asked directly of the officers during or at the conclusion of a stop. Question 13 asked for the determination of race when the officer first formed suspicion or observed the violation. Question 18 asked for the determination of race when the officer initiated the stop. Question 22 asked whether the determination of race changed after the officer made contact with the suspect and, if so, what was the officer's ultimate perception.

The second purpose was to gain operational context regarding police stops. This included information relating to the nature of the stops observed, the areas in which they occurred, the outcomes of stops, and the demeanor of the officers and persons stopped. This objective was satisfied through responses to the remainder of the questions on the survey instrument.

4.2.4 Survey Implementation

For each ride-along, the designated observer reported to the area station that served the randomly selected RD in which the ride-along was scheduled. The observer was assigned by the division watch commander to a patrol vehicle covering that RD. Observers were assigned only to patrol vehicles without cruiser shields (i.e., partitions dividing front and back seats), thus allowing for greater viewing capabilities.

For all ride-alongs, there were two officers per patrol vehicle. Therefore, the observer remained in the back seat of the patrol vehicle. However, at each stop, the observer exited the patrol vehicle and remained behind the open back door of the vehicle in order to observe and listen to police-public encounters. At all times, observers were required to follow all directions of officers regarding safety, including position within or outside the patrol vehicle. Furthermore, observers were required to wear a bulletproof vest during ride-alongs. At the conclusion of each ride-along, observers were dropped off at the area station.

Observers were instructed to complete a field observation survey each time an officer with whom they were riding observed a violation or otherwise developed suspicion that a traffic or penal

code violation may have occurred or was about to occur.[183] If a suspicion did not ultimately lead to a stop, data were recorded regarding only the suspicion (i.e., observers stopped at survey question 16).

The survey instrument was completed by the observer. Many context questions were completed by the observer during the suspicion or stop. However, many survey questions also required the observations of the officer. Therefore, observers recorded the responses of officers at the completion of the stop so as not to distract the officers and create potentially dangerous situations. Observers asked and recorded answers only to the questions on the survey instrument.

All ride-alongs were conducted between Saturday, May 19, 2004, and Friday, June 18, 2004. Eleven ride-alongs had to be rescheduled throughout the ride-along program. Only one of the ride-alongs required a change in the shift (required a change of day but not time or RD). Ten of the 11 ride-alongs that had to be rescheduled were made up by another ride-along observer.

4.3 Survey Data and Data Auditing

Upon concluding each ride-along, observers reviewed each completed survey for comprehensiveness and accuracy and entered the data into an electronic database. Each electronic database was promptly submitted to Analysis Group. Upon receipt, these data were reviewed and merged into the master ride-along results database at Analysis Group's office. Appendix E includes summary statistics for each survey question (in bold italics).

Data were audited by Analysis Group staff to ensure completeness and accuracy. Several data auditing techniques were applied to the survey data. First, a random sample of electronic data submitted by observers was verified against hard copies of the completed surveys. The random sample comprised 8 percent of all completed surveys. Of the nearly 1,290 fields of data audited, only two errors were found and subsequently corrected. This represents an error rate of 0.2 percent.

The second data auditing technique was a set of consistency checks within each survey to ensure that survey responses were accurately recorded. In other words, if some survey questions are answered a certain way, subsequent survey questions must be answered in a particular way. For instance, if in survey question 11, the answer was greater than zero for a motor vehicle stop (i.e., there were passengers in the motor vehicle), then survey questions 24, 25, and 26 must have answers of Yes, No, or Unknown for the Passenger. An answer of Not Applicable would not be valid in this case because the answer to survey question 11 indicates that there were passengers. If there were no

[183] In most cases, it was readily apparent to observers when suspicions were being formed (e.g., by the actions of officers or communications by or between the officers). If there was any uncertainty about whether a suspicion was being formed in a particular situation, observers were instructed to ask officers.

passengers, then survey question 11 should have been marked zero. Consistency checks were conducted as data was submitted electronically. As the first sets of ride-along results were analyzed, several inconsistencies were found, including inconsistency between survey question 11 and survey questions 24 through 26. Following discussions with ride-along observers, all inconsistencies were corrected and clarifications were made to observers to ensure the accuracy of data.

The third data auditing technique was a comparison of survey results to stop data collected by officers on the FDR forms. Since the FDR number associated with each stop was recorded on each survey, Analysis Group was able to verify some information across the two data sources. For all data fields in common between the FDR and survey instrument (1,464 data fields),[184] the discrepancy rate was 9 percent.[185] For officers' perception of race alone, the discrepancy rate was 6 percent.[186] Because it is not clear whether the errors were on the completed surveys, the FDRs or both, no changes were made to the survey data. A detailed analysis of these discrepancies by officer, observer, and area revealed no systematic patterns.

Diagnostics were also performed to determine whether there were any unusual patterns in the data that may be indicative of a problem with the responses by observers or officers. First, ride-along survey results were analyzed by observer in order to determine whether there were any peculiarities or errors isolated to particular observers. No unusual responses or patterns were found. Second, officers' answers were compared with those of observers in order to identify any potential errors by the officers

[184] Nine data fields from the ride-along survey instrument were compared. These include Questions 2 (pedestrian or motor vehicle stop), 17 (gender of suspect), 18-22 (race of suspect; *see* description in footnote 186), 24-26, and three pieces of information from the top of the survey (Date, Reporting District, and Division). Officer's perception (not observer's perception) was used when available. Time of the stop (also from the top of the survey) was excluded from this comparison because the answers were estimates and unlikely to perfectly match. Since there were 186 observations recorded as stops by ride-along observers, there were 1,674 potential fields for comparison (9 fields times 186 stops). However, 210 fields were not available for comparison (135 fields could not be compared because an FDR was not completed by officers for 15 of the ride-along stops; 27 fields could not be compared because the LAPD could not find FDR booklets containing the stop forms for three ride-along stops; 37 fields could not be compared because the answer to a survey question was not comparable to the possible choices for an FDR field (e.g., observers recorded unknown or unable to determine); and 11 fields could not be compared because observers were unable to gather the necessary data (e.g., ride-along shift ended before the entire survey could be completed). *See* Appendix F for a diagram of the relationship between ride-along observations and LAPD FDR data.

[185] The discrepancy rate for the data field indicating the RD in which the stop occurred was 25 percent. We reviewed these RD discrepancies and identified likely reasons for one-half of them. Therefore, the unexplained discrepancy rate for the RD field was 11 percent. The primary reasons for the discrepancies were transposition errors and confusion over the RD in which the stop took place (i.e., RD communicated to the observer by the officer was adjacent geographically to the RD recorded by the officer on the FDR). The discrepancy rate for the RD field was consistent with that found in the LAPD Motor Vehicle and Pedestrian Stop Data Collection Audit, Fourth Quarter – Fiscal Year 2003/2004.

[186] Race as recorded by officers on FDRs was compared to officers' perceptions of race as recorded by observers on the completed surveys. For race recorded on the surveys, the officers' final perception of race after contact with the suspect (Question 18 plus Question 22) was used since it appears that officers are more likely to record their final perception of race on the FDR (*see* Section 4.4.7 for comparison of race reported by officers on FDRs and officers' determination of race as reported by observers on the survey).

or observers. No meaningful inconsistencies were found. The most common finding was that officers were better able than observers to discern race at the time of suspicion or stop. This was expected because officers are highly trained observers.

4.4 Analysis of Survey Results Related to Motor Vehicle Benchmarking

In this section, we present the major findings of our analysis of the ride-along survey data related to motor vehicle benchmarking, including the following: ride-along summary statistics; context of observations; perceptions of suspect race when suspicion was formed; perceptions of suspect race when officer initiated stop; and perceptions of suspect race after officer contacted the suspect.

4.4.1 Ride-Alongs Summary Statistics

Approximately 570 hours were spent observing patrol officers in the field. As shown in Table 4.2, ride-alongs were conducted in all 18 LAPD patrol areas that constitute the service area of the LAPD. Further, the dispersion of stops across areas closely mirrored the LAPD stop activity from January 2002 through March 2004.

Table 4.2 Comparison of Ride-Along Observations to FDR Data by Area

Patrol Area	Number of Observations (Stops + Suspicions)	Percent of Total Observations	Number of Stops Observed	Percent of Total Stops Observed	LAPD Stops* (All FDR data)	Percent of LAPD Stops*
1	10	4%	7	4%	81,377	6%
2	25	9%	16	9%	69,754	6%
3	13	5%	6	3%	64,734	5%
4	13	5%	7	4%	43,152	3%
5	2	1%	2	1%	47,359	4%
6	24	9%	18	10%	92,158	7%
7	23	9%	15	8%	86,682	7%
8	25	9%	24	13%	72,234	6%
9	11	4%	7	4%	88,835	7%
10	15	6%	12	6%	63,229	5%
11	8	3%	8	4%	48,736	4%
12	19	7%	11	6%	71,424	6%
13	5	2%	4	2%	53,177	4%
14	34	13%	24	13%	126,322	10%
15	8	3%	8	4%	55,641	4%
16	12	5%	11	6%	66,482	5%
17	4	2%	2	1%	74,972	6%
18	13	5%	4	2%	47,211	4%
Total	**264**	**100%**	**186**	**100%**	**1,253,479**	**100%**

* The total number of stops by LAPD officers from July 2002 through March 2004 was 1,256,186. There were 2,707 stops excluded because either no area was reported or stops were made by specialized units (e.g., detective support, financial crimes, burglary/auto theft, juvenile, narcotics, and air support) not necessarily connected to one of the 18 areas or stops made by LAPD outside of the City of Los Angeles. Stops made by specialized units represent unique reporting situations. Percent of LAPD stops may not total to 100% due to rounding.

The observations (i.e., suspicions plus stops) were also well distributed across the time of day. Thirty-six percent were conducted during the morning (7 a.m. to 11:59 a.m.), 24 percent during the afternoon (12 p.m. to 5 p.m.), and 40 percent at night (8 p.m. to 1 a.m.).[187] As shown in Table 4.3, the observations were also evenly dispersed across the days of the week.

Table 4.3 Ride-Along Observations by Day of Week

Day of Week	Number of Observations	Percent of Observations
Sunday	33	13%
Monday	46	17%
Tuesday	31	12%
Wednesday	31	12%
Thursday	35	13%
Friday	37	14%
Saturday	51	19%
Total	**264**	**100%**

4.4.2 Context of Observations

Overall, of the 264 observations, suspected traffic violations accounted for the greatest number of observations recorded (44 percent). Criminal violations (26 percent), pedestrian violations (11 percent), possible crime victims (8 percent), and "other" complainants (12 percent) made up the remainder of the observations.[188] Approximately half of the observations involved motor vehicles (45 percent drivers, 2 percent passengers) and approximately half involved pedestrians (53 percent).

In about 40 percent of observations, officers received some type of information about the vehicle or person that led the officer to become suspicious. In most of these cases, this information came from a radio call to which the officer was directed to respond. Thus, in a significant number of observations, officers' discretionary decisions regarding whom to stop were at least partially guided by information provided to them by dispatch.

Survey questions 6 through 10 asked officers to describe the area immediately surrounding the location where suspicion was formed or a stop was made. With respect to the predominant racial makeup of the areas where observations occurred, the most frequently occurring category was Hispanic (35 percent), followed by other (25 percent), black (20 percent), white (19 percent), and Asian (1

[187] Nighttime observations include one that occurred a few minutes before 8 p.m. (a ride-along shift got started a few minutes early) and another that occurred a few minutes after 1 a.m. (a ride-along shift ran a few minutes late).
[188] Sum of percentages does not equal 100 percent because of rounding.

percent). Most observations occurred in residential areas (39 percent), followed closely by observations in commercial areas (36 percent) and mixed-use areas (24 percent). Officers frequently identified the areas where observations occurred as high crime locations (46 percent) with high levels of gang activity (38 percent) and drug activity (49 percent). Only 26 percent of the observations occurred in areas that officers identified as having low or almost no crime.

As shown in Table 4.2 and Appendix F, the majority of observations ultimately led to stops. Of the 264 observations that were recorded during the ride-alongs, 186 (70 percent) lead to stops. For suspicions (i.e., observations that did not lead to stops), most were the result of information about the vehicle, driver, passenger, or pedestrian provided by dispatch or via conversations with the public (53 of the 78 suspicions or 68 percent). Alternatively, a much smaller percentage of stops were the result of information provided by dispatch or via conversations with the public (53 of the 186 stops or 28 percent).

4.4.3 Perceptions of Suspect Race when Suspicion was Formed

The survey captured officers' and observers' perceptions of the race, gender, clothing, and distinctive features of suspects when officers first formed suspicion or observed a violation. Later survey questions captured most of this same information at the point when officers made the decision to stop a person and after officers made face-to-face contact with a person.

As shown in Table 4.4, at the point when suspicion was initially formed or a violation was observed, both officers and observers were able to assess the perceived race of pedestrians in approximately 75 percent of the daytime observations.[189]

Table 4.4 Daytime Observations of Pedestrian Race when Suspicion was Formed

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	12	15%	12	15%
Black	22	28%	21	27%
Hispanic	21	27%	23	29%
Asian	2	3%	2	3%
American Indian	0	0%	0	0%
None of the above	0	0%	0	0%
Unable to determine	21	27%	20	26%
Total	**78**	**100%**	**78**	**100%**

[189] Daytime is considered to be between the hours of 5:45 a.m. and 8 p.m. Nighttime is considered to be between 8:01 p.m. and 5:44 a.m. Daytime and nighttime hours are calculated using the average sunrise and sunset times from 5/22/04 and 6/18/04, the first and last dates of the ride-alongs.

Not surprisingly, officers and observers were better at assessing race during the day than at night. As shown in Table 4.5, in just over one-third of the nighttime cases officers or observers were unable to determine race of pedestrians when suspicion was first formed.

Table 4.5 Nighttime Observations of Pedestrian Race when Suspicion was Formed

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	3	5%	3	5%
Black	18	31%	17	29%
Hispanic	16	28%	16	28%
Asian	1	2%	1	2%
American Indian	0	0%	0	0%
None of the above	0	0%	0	0%
Unable to determine	20	34%	21	36%
Total	**58**	**100%**	**58**	**100%**

The ability of officers and observers to identify the race of persons stopped was significantly lower when the suspect was inside a motor vehicle. As shown in Table 4.6, the percentage of officers and observers who indicated that they were unable to determine the race of a motorist when suspicion was formed or a violation was observed was 63 percent and 70 percent, respectively, for daytime observations.

Table 4.6 Daytime Observations of Vehicle Occupant Race when Suspicion was Formed

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	5	7%	5	7%
Black	13	17%	7	9%
Hispanic	10	13%	11	14%
Asian	0	0%	0	0%
American Indian	0	0%	0	0%
None of the above	0	0%	0	0%
Unable to determine	48	63%	53	70%
Total	**76**	**100%**	**76**	**100%**

As shown in Table 4.7, the percentage of unknowns increased to 65 percent and 74 percent for officers and observers, respectively, for nighttime observations.

Table 4.7 Nighttime Observations of Vehicle Occupant Race when Suspicion was Formed

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	4	9%	3	7%
Black	2	4%	2	4%
Hispanic	9	20%	7	15%
Asian	1	2%	0	0%
American Indian	0	0%	0	0%
None of the above	0	0%	0	0%
Unable to determine	30	65%	34	74%
Total	**46**	**100%**	**46**	**100%**

Finally, neither officers nor observers were able to identify suspects' clothing or other distinctive features in most cases when suspicion was formed or a violation was observed. Observers indicated that they could see what the suspect was wearing in only 26 percent of all observations. The ability to identify distinctive features, such as tattoos or gang paraphernalia, was even lower: 8 percent for officers and 5 percent for observers. Out of the 20 cases in which distinctive features were identified by officers, 15 involved perceived gang-related tattoos, clothing, or hairstyles (including shaved heads). Each of these 15 persons was identified as either black or Hispanic by both the officers and the observers.

4.4.4 Perceptions of Suspect Race when Officer Initiated Stop

The point at which officers initiate a stop is perhaps the most crucial decision-making point because it represents the point at which they actually intervene in a person's affairs and detain him or her. Tables 4.8 and 4.9 present observation data on pedestrian stops during the daytime and nighttime, respectively.

Table 4.8 Daytime Observations of Pedestrian Race when Stop was Initiated

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	11	27%	12	29%
Black	10	24%	10	24%
Hispanic	17	41%	16	39%
Asian	1	2%	1	2%
American Indian	1	2%	0	0%
None of the above	0	0%	0	0%
Unable to determine	1	2%	2	5%
Total	**41**	**100%**	**41**	**100%**

Table 4.9 Nighttime Observations of Pedestrian Race when Stop was Initiated

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	3	8%	3	8%
Black	16	43%	14	38%
Hispanic	14	38%	13	35%
Asian	1	3%	1	3%
American Indian	0	0%	0	0%
None of the above	0	0%	0	0%
Unable to determine	3	8%	6	16%
Total	**37**	**100%**	**37**	**100%**

Overall, these findings indicate that officers are usually able to determine the race of pedestrians when they make the decision to initiate stops. The results also indicate that officers and observers were much better at identifying race when a stop was initiated (98 percent of daytime stops and 92 percent of nighttime stops for officers; 95 percent of daytime stops and 84 percent of nighttime stops for observers [*see* Tables 4.8 and 4.9]) than when suspicion was initially formed (73 percent of daytime stops and 66 percent of nighttime stops for officers; 74 percent of daytime stops and 64 percent of nighttime stops for officers [*see* Tables 4.4 and 4.5]). In most cases, both officers and observers were able to assess race when a stop was initiated, particularly during daylight hours. Further, officers were much better at identifying race than were observers. Observers' inability to determine race at the time a stop was initiated was twice that of officers. This perception gap between officers and observers is not unexpected. Officers are trained observers.

The percentage of stops in which race could not be identified when the stop was initiated was greater for motor vehicle stops than for pedestrian stops. According to Tables 4.10 and 4.11, officers were unable to determine race at the time a stop was initiated in 21 percent of daytime vehicle stops and 32 percent of nighttime vehicle stops. As with pedestrian stops, officers and observers were much better able to identify race when a motor vehicle stop was initiated (79 percent of daytime stops and 68 percent of nighttime stops for officers; 61 percent of daytime stops and 51 percent of nighttime stops for observers [*see* Tables 4.10 and 4.11]) than when suspicion was initially formed (37 percent of daytime stops and 35 percent of nighttime stops for officers; 30 percent of daytime stops and 26 percent of nighttime stops for officers [*see* Tables 4.6 and 4.7]). Officers were also much better able to identify race than were observers.

Table 4.10 Daytime Observations of Motor Vehicle Occupant Race when Stop was Initiated

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	17	25%	14	21%
Black	15	22%	12	18%
Hispanic	16	24%	15	22%
Asian	1	1%	0	0%
American Indian	0	0%	0	0%
None of the above	4	6%	0	0%
Unable to determine	14	21%	26	39%
Total	**67**	**100%**	**67**	**100%**

Table 4.11 Nighttime Observations of Motor Vehicle Occupant Race when Stop was Initiated

	Officers		Observers	
Race	**Number**	**Percent**	**Number**	**Percent**
White	9	22%	6	15%
Black	8	20%	5	12%
Hispanic	10	24%	8	20%
Asian	1	2%	2	5%
American Indian	0	0%	0	0%
None of the above	0	0%	0	0%
Unable to determine	13	32%	20	49%
Total	**41**	**100%**	**41**	**100%**

It is worth noting that there were only three cases (three percent of motor vehicle observations when stops were initiated) where observers perceived a vehicle occupant to be a racial minority when officers indicated that the person was white. In each of those cases, the observer perceived the person to be Hispanic. Given the difficulties with identifying Hispanics in an observational setting, this result is not surprising.[190]

4.4.5 Perceptions of Suspect Race after Officer Contacted the Suspect

Question 22 of the survey queried whether officers' and observers' racial perceptions changed after officers made contact with the suspect. In the case of officers, 2 percent changed their minds about the perceived race of the suspect once they contacted them, while 14 percent went from unable-to-determine to a particular race. For observers, 5 percent changed their minds about the perceived race, while 12 percent went from unable to determine to a particular race. No clear patterns emerged

[190] Smith and Alpert (2002), Engel and Calnon (2003), Fridell (2004), and Withrow (2004) discuss the difficulties in distinguishing Hispanics, Asians, Native Americans, and other racial groups given speed of vehicles under observation, lighting conditions, traffic conditions, and tinted windows.

from the data regarding how perceptions changed. In some cases, officers and observers initially perceived the suspect to be a minority but after contact changed their racial perceptions to white. In other cases, the opposite was true and racial perceptions changed from white to minority.

4.4.6 Change in Officers' Perceptions of Suspect Race

Officers' perception of race is a key variable in the analysis of racially biased policing. If policing is racially biased, that bias may manifest itself in a number of decisions – such as the decision to stop, search, or issue a citation – depending upon the perceived race of the suspect at the time the discretionary decision is made.

Table 4.12 presents a comparison of officers' perception of race when suspicion was formed (Question 13 on the ride-along survey) to their perception when the stop was initiated (Question 18 on the ride-along survey).[191]

Table 4.12 Officer Perception of Race in Questions 13 and 18

Question 13 - Suspicion	Question 18 - Decision to Stop							
Race	**White**	**Black**	**Hispanic**	**Asian**	**American Indian**	**None of Above**	**Can't Determine**	**Total**
White	***20***	0	0	0	0	0	0	20
Black	0	***35***	0	0	0	0	0	35
Hispanic	0	1	***41***	0	0	0	0	42
Asian	0	0	0	***3***	0	0	0	3
American Indian	0	0	0	0	***0***	0	0	0
None of Above	0	0	0	0	0	***0***	0	0
Can't Determine	20	13	16	1	1	4	***31***	86
Total	40	49	57	4	1	4	31	186

As shown in the diagonal of the table (designated by bold italics), officers' perception did not change the majority of the time. In 70 percent of the observations (130 of 186 observations), officers' perception of suspect race when the suspicion was formed was the same as their perception when the stop was initiated. However, this includes the cases where officers answered "unable to determine" in question 13 (86 observations). If these cases are excluded, then we have the percentage of observations in which officers determined the same race in both questions – 99 percent (99 of 100 observations). An interesting finding is that officers' perceptions of race changed in only one case. In that instance, the race was initially determined to be Hispanic and subsequently changed to black at the time the stop was initiated.

[191] This and the following four tables present only the ride-along observations for which stops were made (186 observations). Suspicions cannot be included because a stop was not made and Question 18 and 22 were not asked.

Overall, these findings tell us that that there was a significant degree of uncertainty among officers regarding the race of suspects when a suspicion was first formed (86 of 186 observations, or 46 percent). But more officers were able to determine race at the time a stop was initiated. However, in 17 percent of the cases (31 observations), officers were still unable to determine race when a stop was initiated.[192]

Table 4.13 presents a comparison of officers' perception of race when the stop was initiated (Question 18 on the ride-along survey) to their perception when contact was made with the suspect (Question 22 on the ride-along survey).

Table 4.13 Officer Perception of Race in Questions 18 and 22

Q. 18 – Decision to Stop	Question 22 – Upon Contact with Suspect							
Race	**White**	**Black**	**Hispanic**	**Asian**	**American Indian**	**None of Above**	**Can't Determine**	**Total**
White	***40***	0	0	0	0	0	0	40
Black	1	***48***	0	0	0	0	0	49
Hispanic	1	0	***55***	0	0	1	0	57
Asian	0	0	0	***4***	0	0	0	4
American Indian	0	0	0	0	***1***	0	0	1
None of Above	0	0	0	0	0	***4***	0	4
Can't Determine	12	5	8	1	0	0	***5***	31
Total	54	53	63	5	1	5	5	186

As shown in the diagonal of the table (designated by bold italics), officers' perception did not change the majority of the time. In 84 percent of the observations (157 of 186 observations), officers' perception of suspect race when they initiated the stop was the same as their perception when they made contact with the person. This includes the cases where officers answered "unable to determine" for question 18 (31 observations). If these cases are excluded, we see that in 98 percent (152 of 155 observations) of the observations officers perceived the same race in both questions. From survey questions 18 to 22, officers changed their determination of race in only three observations. One changed from black to white; another changed from Hispanic to white; and a third went from Hispanic to none of the above.

Overall, the data gathered during the ride-alongs are instructive because they indicate that an officer's initial perception of race, which is currently captured on the FDR, may change or become known once the officer makes contact with a person. Thus, any post-stop decisions will necessarily

[192] Although officers were able to choose "unable to determine" as an answer to our race questions, they do not have that option when completing FDRs. Therefore, if officers are unsure of the race, they must wait to fill out the FDR until their first determination is made or else make their best guess.

reflect what race the officer perceives the person to be *after* the stop occurs rather than when the officer first perceives the person's race, which may occur before the stop itself.

4.4.7 When is Race Determined by Officers?

An important question is raised by the foregoing findings: When is race initially being determined and recorded by officers on the FDR? The answer to this question has meaningful implications for the types of analyses that should be performed in a study to determine whether policing is racially biased. The answer to this question may be gleaned from a comparison of answers to the race questions on the ride-along surveys (questions 18 and 22) and the race recorded by officers on the FDRs for these stops. Table 4.14 presents a comparison of officers' perception of race when a stop was initiated (survey question 18) and that recorded on the FDR. As shown in the table, the race recorded in question 18 was in agreement 92 percent of the time with that recorded by officers on the FDRs (127 of 138 observations).

Table 4.14 Identification of Race at Question 18 vs. FDRs

Q. 18 – Decision to Stop	FDR						
Race	**White**	**Black**	**Hispanic**	**Asian**	**American Indian**	**None of Above**	**Total**
White	*33*	0	3	0	0	0	36
Black	0	*38*	2	0	0	0	40
Hispanic	4	1	*49*	0	0	0	54
Asian	0	0	0	*3*	0	0	3
American Indian	0	0	0	0	*1*	0	1
None of Above	0	0	1	0	0	*3*	4
Can't Determine	13	8	8	1	0	0	30
Total (Excluding Can't Determine)	37	39	55	3	1	3	138

Table 4.15 presents a comparison of officers' perception of race after contact was made (survey question 22) and that recorded on the FDR. The table shows that, the race recorded in question 22 was in agreement 94 percent of the time with that recorded by officers on the FDRs (154 of 164 observations). Compared to the percent of matches between survey question 18 and the FDR data, we find that the answers to survey question 22 more closely resemble the suspect race recorded on the FDRs. This implies that officers may already be recording race based on the totality of the information gathered from a stop, and not just from their initial perception.

Table 4.15 Identification of Race at Question 22 vs. FDRs*

Question 22 – Upon Contact	FDR						
Race	White	Black	Hispanic	Asian	American Indian	None of Above	Total
White	46	0	3	0	0	0	49
Black	0	43	2	0	0	0	45
Hispanic	2	1	57	0	0	0	60
Asian	0	0	0	4	0	0	4
American Indian	0	0	0	0	1	0	1
None of Above	1	0	1	0	0	3	5
Can't Determine	1	3	0	0	0	0	4
Total (Excluding Can't Determines)	49	44	63	4	1	3	164

* When survey question 22 indicated a change in the officer's perception of race, the new perception of race was used as the race of the suspect. Otherwise, determination of race for survey question 18 was used.

There is one other interesting note regarding the determination of race. After all was said and done – after the suspicion was formed, the stop was initiated, and contact was made with the suspect - race could still not be determined by officers in 2 percent of observations (4 of 164 observations). In one of these cases, the officer recorded white despite having indicated "unable to determine" in the ride-along observer's survey.[193] In the other three cases, officers recorded black after having indicated "unable to determine" in the ride-along survey.

4.5 Analysis of Other Survey Results

In this section, Analysis Group presents other findings of our analysis of the ride-along survey data not directly related to motor vehicle benchmarking. These findings include predictors of officers' perceptions of suspect race, outcome of stops, and attitude and demeanor of suspects and officers. Due to the limited sample size for these findings, these results should be evaluated with caution. Implementation of the methodologies proposed in Chapter 6 will include an analysis of all stop and post-stop data and yield more meaningful results.

4.5.1 Predictors of Officers' Perceptions of Suspect Race

In order to better assess the factors that may have influenced officers' perceptions of suspect race when stops were initiated, Analysis Group conducted a multivariate logistic regression analysis. This statistical technique examines the relationships between the dependent variable (i.e., the variable of interest), in this case race, and independent variables (i.e., other variables that may assist in predicting the variable of interest). The dependent variable in the regression model was a

[193] On the FDR, "unable to determine" is not a possible choice for officers. They must choose one option for apparent race even if they are not sure.

dichotomized version of survey question 18.i. (officer perception of suspect race). For purposes of the regression, officers' perceptions of suspect race were recoded as either white or minority (0 and 1, respectively).[194] Responses to ten questions from the ride-along survey provided the independent variables in the model. The independent variables included:

- Type of stop (vehicle or pedestrian);
- Whether the officer had received any prior information about the suspect;
- Perceived predominant racial composition of area where stop occurred (white or minority);
- Officer's gender;
- Officer's education level;
- Officer's race (two variables – one for black and one for Hispanic);[195]
- Officer's years of service;
- Perceived amount of gang activity in the area; and
- Perceived amount of drug activity in the area.

The results from the regression analysis are summarized in Table 4.16.

Table 4.16 Predictors of Officers' Perceptions of Suspect Race[196]

Variable	Coefficient	P-value	Odds
Motor Vehicle Stop	0.379	0.523	1.461
Prior Information	0.440	0.474	1.553
Minority Area*	1.757	0.004	5.792
Male Gender	-0.491	0.402	0.612
Officer Education Level	-0.077	0.791	0.926
Hispanic Officer	0.986	0.098	2.681
Black Officer	0.213	0.748	1.237
Officer Years of Service	0.019	0.694	1.019
Amount of Gang Activity	0.441	0.283	1.555
Amount of Drug Activity	0.089	0.809	1.093

n = 154; Model Chi-Square = 38.43; Pseudo-R Square = .324
*Statistically significant at the 5% significance level ($p \leq 0.05$).

The most useful column for interpreting the outcome of this and other logistic regression analyses is the odds ratio. Odds ratios greater than 1.00 indicate a positive relationship between the independent variable and the dependent variable – in this case, whether the suspect was perceived by

[194] Race was grouped into two categories, white and minority, because of the small sample size associated with some racial groups.
[195] Both officer race variables were indicators that assumed values of 1 if the officer was of the indicated race (black for the black officer variable and Hispanic for the Hispanic officer variable) and 0 otherwise.
[196] Excludes observations with at least one "Unable to Determine."

an officer as white or minority. Thus, as the dependent variable changes in value (e.g., increases from 0 to 1 or white to minority), an odds ratio greater than one indicates an increased probability that the value of the dependent variable will increase as well. For example, in Table 12, the Minority Area variable was coded as 0 if the area where the stop occurred was perceived as mostly white and 1 if the area was perceived as predominately minority. The odds ratio for the Minority Area variable is 5.792 which is greater than 1. This means that as the value of this variable changed from 0 to 1 (or from white to minority), the odds that the person was perceived as a minority increased by more than a factor of 5 (more than 500 percent).

The column labeled P-value shows whether an independent variable is statistically significant (i.e., the relationship observed between the independent variable and the dependent variable is unlikely to be the result of chance). If the P-value is lower than the significance level, typically five percent (0.05), then the variable is considered to be statistically significant (i.e., not the result of chance error). The Minority Area variable was the only variable in the model that was statistically significant (P-value = 0.004 ≤ 0.05). Therefore, perception of suspect race by officers is strongly and positively correlated with the racial composition of the area where the stop occurred. Not surprisingly, officers were much more likely to perceive a suspect as a minority if the area where the stop occurred was perceived to consist predominantly of minorities. In other words, the perceived race of those who are stopped is driven largely by where stops occur.[197]

The Hispanic Officer variable approached statistical significance (P-value = 0.098) and showed a positive and fairly strong effect (as indicated by the odds ratio). This may indicate that Hispanic officers are more likely than offices of other races to be assigned to minority neighborhoods where they are likely to come in contact with minorities. Further analysis on this issue is needed in order to draw more definitive conclusions.[198]

Another interesting finding is that the regression analysis did not show a relationship between perceived levels of gang or drug activity and the perceived race of suspects, holding all other factors constant. According to these limited data, officers were not more likely to stop minorities in areas with higher levels of perceived gang and drug activity. The relationship between stops and crime will be explored in greater detail in subsequent analyses utilizing FDR and other demographic/area data.

[197] Caution should be taken when interpreting these results. Inferences to all stops are not necessarily appropriate given the differences in how the ride-along data and FDR data were recorded. Analysis of all stop data is needed in order to draw more definitive conclusions about whether racially biased policing exists.

[198] Initial conversations with the City of Los Angeles and LAPD have indicated that Spanish-speaking Hispanic officers are often assigned to Hispanic neighborhoods in order to eliminate language barriers with the Hispanic population.

4.5.2 Outcome of Stop

Data on outcomes of stops, including pat-downs, searches, voluntary searches, warnings, tickets, arrests, use of force by officers, and resistance by suspects, were captured on the ride-along instrument.[199] It is important to note that multiple outcomes are possible for a single stop.

Tables 4.17a through 4.17d identify by race the number of pat-downs and searches that were conducted by LAPD officers. They also identify by race the persons who were patted down and searched as a percent of the number of persons stopped. Table 4.17a provides the results for Drivers; Table 4.17b provides the results for Passengers; Table 4.17c provides the results for pedestrians; and Table 4.17d provides the results for motor vehicles. Cases in which observers where unable to determine whether a search occurred or, if so, whether it was voluntary, were excluded from the analysis. These data are presented for descriptive purposes only and must be interpreted with caution. There were not a sufficient number of observations regarding the outcome of a stop to yield any statistical conclusions about the apparent differences between whites and non-whites.

Table 4.17a Affirmative Observations of Driver Pat-Downs, Searches, and Voluntary Searches by Race

Race	Pre-Stop Race*	Post-Stop Race**	Pat-Downs	Searches	Voluntary Searches
White	26	39	2	2	1
Black	23	27	6	3	2
Hispanic	26	30	8	1	1
Asian	2	3	1	0	No Data
American Indian	0	0	No Data	No Data	No Data
None of the above	4	5	0	0	No Data
Unable to determine	27	4	2	0	No Data

Table 4.17b Affirmative Observations of Passenger Pat-Downs, Searches, and Voluntary Searches by Race

Race	Pre-Stop Race*	Post-Stop Race**	Pat-Downs	Searches	Voluntary Searches
White	3	4	0	0	No Data
Black	10	11	4	2	2
Hispanic	6	6	2	0	No Data
Asian	1	2	0	0	No Data
American Indian	0	0	No Data	No Data	No Data
None of the above	0	0	No Data	No Data	No Data
Unable to determine	5	2	1	0	No Data

[199] For the purposes of the ride-along surveys, certain terms were defined as follows. Use of force was defined as anything beyond a firm grip, as well as the use or threatened use of any police weapon. This definition does not necessarily correspond to the LAPD thresholds for filing a report on the use of force. A search was defined as voluntary if the officer requested permission from the suspect to conduct a search and permission was granted. This definition does not necessarily comport with that of a consensual search as defined by the LAPD.

Table 4.17c Affirmative Observations of Pedestrian Pat-Downs, Searches, and Voluntary Searches by Race

Race	Pre-Stop Race*	Post-Stop Race**	Pat-Downs	Searches	Voluntary Searches
White	14	15	5	3	3
Black	26	26	19	9	4
Hispanic	31	33	21	11	7
Asian	2	2	1	1	1
American Indian	1	1	1	1	0
None of the above	0	0	No Data	No Data	No Data
Unable to determine	4	1	0	0	No Data

Table 4.17d Affirmative Observations of Vehicle Searches and Voluntary Searches by Race of Suspect

Race	Pre-Stop Race*	Post-Stop Race**	Searches	Voluntary Searches
White	26	39	2	2
Black	23	27	6	3
Hispanic	26	30	6	2
Asian	2	3	1	No Data
American Indian	0	0	No Data	No Data
None of the above	4	5	0	No Data
Unable to determine	27	4	2	1

* Pre-stop race represents officers' perception of suspect race when a stop was initiated (survey question 18).
** Post-stop race represents officers' perception of race after contact was made. When survey question 22 indicated a change in the officer's perception of race, the new perception of race was used as the race of the suspect. Otherwise, determination of race for survey question 18 was used.

Observations involving verbal or physical resistance by suspects against officers were rare. Overall, only 11 observations of verbal resistance by suspects were recorded (6 percent of all ride-along observations). Physical resistance was limited to just four cases (2 percent of all ride-along observations), as was use of force by officers.

Observations involving use of force by officers were limited to just four cases (two percent of all ride-along observations). Details on these observations are presented in Table 4.18. For the first observation below, officers had to physically restrain and handcuff a verbally-resistant suspect who had set her apartment on fire and was trying to kill herself. The use of force involved the restraint of the suspect and the subsequent handcuffing. In the second instance, the suspect appeared to have overdosed on drugs. The person was uncooperative and tried to run away from officers. The use of force involved grabbing the suspect so they could not flee and the subsequent handcuffing. For the third observation, the suspect, who was found to be on probation, was in a dark alley and appeared to hide drugs when approached by officers. The use of force involved the handcuffing of the suspect. In the last observation, stabbing suspects were agitated when stopped by officers. They exhibited both

verbal and physical resistance against officers. The use of force occurred during the handcuffing since the suspects refused to be handcuffed.

Table 4.18 Observations in which Force was Used by Officers

	Race		Verbal	Physical		Suspect Negatively Impacted Initial
	Suspect	Officer	Resistance	Resistance	Arrested	Demeanor of Officer
1	Black	White	Yes	No	Yes	No
2	Asian	Black	No	Yes	No	No
3	Black	White	No	No	No	No
4	Hispanic	White	Yes	Yes	No	No

Table 4.19 presents the post-stop activities by race.

Table 4.19 Stop Dispositions by Race of Suspect

Race	Stops	Warnings	Tickets	Arrests
White	40	5	25	3
Black*	49	13	13	17
Hispanic*	57	14	26	13
Asian	4	1	1	1
American Indian	1	1	0	0
None of the above	4	1	3	0
Unable to determine	31	1	26	2

* There were three observations with unknown dispositions: 1 for Warnings (Hispanic suspect); 1 for Tickets (black suspect); and 1 for Arrests (black suspect).

Although the ride-along data here are limited, these general findings – that minorities tend to experience higher warning and arrest rates and lower citation rates than whites – are consistent with the results of studies of post-stop outcomes in other jurisdictions.[200] More analysis of these disparities is needed using FDR data and additional variables in a multivariate model.

It is interesting to note that these disparities existed even during the ride-alongs, when one would think that officers would be most conscientious about avoiding behavior that might be viewed as racially biased. Therefore, assuming that there is no subconscious bias by officers, the ride-along results may suggest that reasons other than race led to these disparities, at least in part.

4.5.3 Attitude and Demeanor of Officers and Suspects

Questions 28 through 41 of the survey instrument dealt with the attitudes and demeanor of suspects and officers. Observers were asked to assess officer and suspect demeanor at three points

[200] *See* Smith and Petrocelli (2001). Some of the jurisdictional studies reviewed in Chapter 3 also find higher arrest rates for minorities. *See* Ohio State University (2003) [Columbus], Schlosberg (2002) [San Francisco], Spitzer (1999) [New York], and Sam Houston State University (2003) [Houston].

during a stop: initial contact, during the stop, and at the conclusion of the stop. In addition, officers were asked to gauge the overall attitude and cooperation of the suspect.

In all but two stops where observations could be made (1percent), observers judged officers' demeanor as either positive or neutral at the outset of the stop. They assessed suspect demeanor to be neutral or positive at the beginning of most stops as well but assigned a higher rate of negative demeanor to suspects than to officers. In 14 stops (8 percent), observers rated a suspect's initial demeanor as negative (e.g., rude, non-compliant, or confrontational). Observers also found that suspects were more likely than officers to change their demeanor during the encounter. Eight officers (4 percent) were observed to change their demeanor in some way during the encounter, while the demeanor of 16 suspects (9 percent) was altered.

When officers changed their demeanor, they most often changed from a neutral or negative demeanor to a positive demeanor (50 percent). One-quarter of officers who showed a change, though, went from a neutral or positive demeanor to a negative demeanor. When officers changed their demeanor, however, the officer's change was in response to perceived lies, non-compliance, or verbal or physical resistance by the suspect.

Change in suspect demeanor was more often in the positive direction and often in response to the demeanor of the officer. When suspects changed their demeanor in the negative direction, it was usually because they were upset with some action taken by the officer (e.g., giving them a ticket, towing their cars).

Officer demeanor at the conclusion of the stops was assessed positively or neutrally by the observers in all cases. The final demeanor of suspects was similarly judged to be positive or neutral in most cases, with seven suspects (4 percent) viewed as having a negative demeanor when the encounter ended. Details on these observations are set forth in Table 4.20.

Table 4.20 Observations in which Suspects had a Negative Final Demeanor

	Suspect's Demeanor		Race		Officer Negatively Impact Initial Demeanor of Suspect?	Use of Force?
	Initial	Final	Suspect	Officer		
1	Negative	Negative	Hispanic	White	No	No
2	Negative	Negative	White	White	No	No
3	Negative	Negative	White	Hispanic	No	No
4	Neutral	Negative	White	Hispanic	No	No
5	Negative	Negative	Black	None of Above	No	No
6	Negative	Negative	Hispanic	White	No	No
7	Negative	Negative	White	Hispanic	No	No

	Searches			Outcome		
	Pat-Down	Search	Voluntary	Warning	Ticket	Arrested
1	No	No	n/a	No	No	No
2	Yes	Yes	Yes	No	No	Yes
3	Yes	Yes	Unknown	No	Yes	Yes
4	No	No	n/a	No	Yes	No
5	Yes	Yes	Yes	No	No	Yes
6	No	No	n/a	No	Yes	No
7	No	No	n/a	No	Yes	No

In each of the cases in which the suspect had a negative final demeanor, the initial demeanor of the suspect was already negative. Furthermore, the observers noted that officers did not negatively impact the demeanor of these suspects.

In fact, of all the encounters observed during the ride-alongs, there was only one instance in which it appeared that the officer negatively impacted the demeanor of the suspect. In that case, the observer noted that the officer was initially rude and not paying attention to what a gang suspect had to say. However, the officer's demeanor changed to positive after he saw that the suspect was very cooperative. In the end, the suspect's demeanor was observed to be neutral.

When asked to gauge overall suspect cooperation, officers judged them to be very cooperative or cooperative in 83 percent of the stops observed. Officers assessed 5 percent as uncooperative. Officers also believed that 5 percent of suspects were disrespectful, while most (76 percent) were judged to be respectful.

4.5.4 Officer Demographics

Eighty-three percent of the 186 officers who initiated stops were male; 17 percent were female. The average length of LAPD service among the sample officers was 7.5 years. All officers had at least a high school diploma. In addition, 45 percent had an associate's degree; 33 percent had a bachelor's degree, and one officer had a graduate degree. Forty-four percent of officers were white, 13 percent

were black, 35 percent were Hispanic, five percent were Asian, and three percent were self-identified as some other race or a combination of races.

CHAPTER 5: REVIEW OF DATA

5.1 Introduction

The methodologies that are appropriate for analyzing pedestrian and motor vehicle stops in any jurisdiction are determined, in part, by the type and quality of data that are available for use in the analyses efforts. In this chapter, Analysis Group identifies potentially relevant data and briefly discusses their prospective usefulness in the analysis of pedestrian and motor vehicle stop data in the City of Los Angeles. For data that are available, we discuss how they were collected, their format, the number of observations, time periods for which they are available, and any inherent limitations that have been identified.[201] While unavailable or unusable data cannot be incorporated in quantitative analyses, they may provide qualitative information for evaluating any disparities in the empirical studies.

Analysis Group also offers recommendations for improving the availability and reliability of data that may be collected in the future. We have not attempted to quantify the resources associated with implementing these recommendations. The City of Los Angeles must consider these resources in relation to the potential benefits when determining whether to implement these recommendations.

There are two categories of data that are potentially relevant for analyzing pedestrian and motor vehicle stops in the City of Los Angeles:

- data on law enforcement; and
- demographic, economic, and socioeconomic data.

5.2 Law Enforcement Data

Law enforcement data consist of information on the LAPD, its officers, their policing activities, and crime in the City of Los Angeles. Most of these data are gathered and maintained by the LAPD. All data are collected as a normal part of police work.

[201] We present all data limitations identified thus far. However, further limitations may be discovered during the implementation of the proposed methodologies for analyzing stop data contemplated in Chapter 6. If further limitations are found, they will be discussed in the report that presents the results of the data analysis.

5.2.1 Pedestrian and Motor Vehicle Stops

Stop data are the data of primary interest in analyses of racially biased policing. LAPD officers collect stop data by completing FDRs when they conduct pedestrian and motor vehicle stops.[202] Data collected by officers include:

- officer identification number;
- the area to which the officer is assigned;
- date and time of the stop;
- RD where the stop occurred;
- type of stop (i.e., pedestrian, driver, or passenger);
- driver's or pedestrian's apparent descent, age, and gender;
- reason for the stop;
- whether the driver was required to exit the vehicle;
- whether a pat-down search was conducted;
- post-stop action taken (e.g., pat-down, search, citation, warning, and arrest);
- whether a search was consensual;
- authority for a search;
- what was searched;
- what was discovered during a search;
- action taken by the officer;
- citation number, if a citation was issued; and
- booking number, if an arrest was made.

While the collection of stop data began in November 2001,[203] the City of Los Angeles initially encountered problems scanning paper FDR forms that rendered the electronic stop database incomplete. It was not until July 2002 that these scanning problems were fully resolved. Therefore, complete stop data are available only for the period beginning July 2002.[204]

[202] When the LAPD began collecting stop data, the officers completed paper FDR forms, which were then optically scanned to create an electronic database. In 2004, patrol and traffic officers began completing electronic FDRs on handheld devices, thus reducing the need for scanning of paper FDR forms. Currently, paper forms are only used by officers who make infrequent stops, do not have a handheld electronic device, or have a handheld electronic device that becomes inoperable. *See* Chapter 7 for a summary of exemptions for pedestrian and motor vehicle stops.

[203] Office of the Chief of Police, Los Angeles Police Department, Special Order No. 35, October 19, 2001.

[204] Los Angeles Police Department, "LAPD Motor Vehicle and Pedestrian Stop Data Collection Audit, Fourth Quarter – Fiscal Year 2003/2004," p. 5.

Furthermore, as a result of changes to the data collection process that were implemented in July 2003, there are some differences in data collected before and after this date. In July 2003, the FDR was revised in order to streamline the process of recording data and to assist officers in ensuring the accuracy of the data.[205] Copies of the original and current FDR form can be found in Appendix A. Changes to the FDR included:[206]

- clarifying the "type of stop" to emphasize the separation of pedestrians and passengers from drivers;
- revising the "apparent descent" categories to establish consistency across all LAPD data systems (i.e., "Chinese," "Filipino," and "Japanese" categories were consolidated into a single new category labeled "Asian" and "Korean" was moved from the "Other" category to "Asian");
- revising "age" to reflect age ranges rather than an exact age;
- adding a new question asking whether the driver was asked to exit the vehicle (in addition to the existing question asking whether the driver exited the vehicle);
- changing the "initial reason for stop" to allow only one answer;
- separating moving vehicle code violations from pedestrian violations under "initial reason for stop;"
- clarifying procedures for recording a pat-down/frisk versus searches incident to a pat-down/frisk;
- clarifying the language on "warrantless searches;"
- requiring that all applicable "search authorities" be marked;
- changing the choices for "what was searched;"
- changing the choices for "what was discovered/seized;"
- requiring that a booking number be entered when arrest is marked for "action taken;"
- adding release from custody as a choice under "action taken;"[207] and
- changing the layout of the FDR.

The effect of these changes to the FDR on data analysis is uncertain at this time. For this reason, Analysis Group suggests that the data analysis methodologies set forth in Chapter 6 be limited to the post-July 2003 time period. In order to assemble one full year of data, Analysis Group has

[205] See footnote 204.
[206] Los Angeles Police Department, Planning and Research Division, "Field Data Report," (presentation to officers).
[207] Release from custody can take place if it is determined that an arrestee did not commit a crime or is released on his/her own recognizance after a low-grade misdemeanor arrest.

requested additional data through June 2004. The City is currently in the process of fulfilling that request.[208]

The current stop database provided to Analysis Group contains information on 1,256,186 stops conducted from July 1, 2002, through March 31, 2004.[209] Of these stops, 25 percent were pedestrian stops and 75 percent were motor vehicle stops.

In order to determine the reliability of the stop data, Analysis Group reviewed several previously conducted audits of the data. Among other things, these audits evaluated:

- whether FDRs were completed when required;
- if the required information on each FDR was complete; and
- if the data were accurate.

The LAPD has conducted two internal audits of the FDR stop data.[210] These audits were completed for fiscal years 2002/2003 and 2003/2004. In order to evaluate whether FDRs were completed when required, a sample of FDRs was compared with daily field activity reports, which document significant activities during officers' shifts. According to the audits, the officer compliance rate for completing FDRs when required was 88 percent for fiscal year 2002/2003 and 94 percent for fiscal year 2003/2004.[211] To assess the completeness of data, FDRs were reviewed to see if all required information was filled in by officers. The audits found the completeness rate of FDRs to be 84 percent for fiscal year 2002/2003 and 85 percent for fiscal year 2003/2004. To evaluate the accuracy of the stop data, information entered into FDRs was compared to supporting documentation, including daily field activity reports, to determine if they were consistent.[212] According to the LAPD audits, the accuracy rate of FDRs was 78 percent for fiscal year 2002/2003 and 86 percent for fiscal year 2003/2004. This included an RD error rate of six percent for fiscal year 2002/2003 and 23 percent for fiscal year 2003/2004.

The LAPD stop data system provides an additional evaluation of the completeness of FDRs via an internal logic check. This automated check identifies fields that must be filled in for all stops or as a result of other information recorded (e.g., if the data indicate that a search was conducted, then an

[208] Except where noted, summary statistics reported in this chapter do not incorporate data through June 2004. We do not believe that the additional data through June 2004 will materially change these statistics. Summary statistics for the time period ultimately analyzed will be presented in the report detailing our findings.
[209] At the time data were provided to Analysis Group, March 31, 2004 was the last date for which stop data were available.
[210] Los Angeles Police Department, "LAPD Motor Vehicle and Pedestrian Stop Data Collection Audit, Fourth Quarter – Fiscal Year 2002/2003" and "LAPD Motor Vehicle and Pedestrian Stop Data Collection Audit, Fourth Quarter – Fiscal Year 2003/2004."
[211] Some of the increases in completion and accuracy rates in later years may be the result of changes in the data collection process, including the FDRs, as well as additional training of officers.
[212] Excludes inconsistencies in age, gender, and descent categories since these capture officers' perceptions.

officer must also indicate what was searched). In the stop database provided to Analysis Group, the LAPD internal logic checks found that 0.1 percent of the stops in the stop database were missing at least one piece of information that should have been recorded.[213]

In addition to internal audits by the LAPD, the stop data have also been audited by the Independent Monitor, who is responsible for ensuring that reforms set forth in the consent decree between the City of Los Angeles and DOJ, including the collection of stop data, are implemented in an effective and timely manner. Based on a comparison of a sample of FDRs to daily field activity reports from April to June 2004, the Independent Monitor found that the officer compliance rate for completing FDRs when required was 96 percent and the accuracy/completion rate was 97 percent.

In addition to reviewing the aforementioned audits by the LAPD and Independent Monitor, Analysis Group audited the stop data provided by the City in order to determine whether the data would be suitable for conducting data analysis. Analysis Group's auditing procedures consisted of identifying stops for which critical information was missing, such as suspect race, RD where a stop was made, and whether a stop was a pedestrian or motor vehicle stop. Our audit found that approximately 2 percent of the stops (25,415 records) had an invalid RD,[214] 0.007 percent (83 records) did not have information for the driver's or pedestrian's apparent race, and 0.002 percent (26 records) could not be identified as either pedestrian or motor vehicle stops.

To the extent that a specific data element is needed for a particular analysis, records missing these data must be excluded from the analysis. Missing data can reduce the power of statistical tests by reducing the number of observations available for analysis. But given the large number of observation in the stop database, Analysis Group does not anticipate that the reduction in sample size due to missing stop data will significantly affect the results of the proposed methodologies set forth in Chapter 6. Problems affecting the accuracy of data have the potential to pose more serious problems, particularly if errors are correlated with another variable of interest. The only complete remedy for inaccurate data is to ensure that they are properly collected in the future. Based on the fact that the accuracy rate has been relatively high and increasing over time, we believe that the stop data will be reasonably reliable for the purposes of implementing our proposed methodologies. It will be important when evaluating results to judge the strength of the findings in relation to the error rates in the stop data

[213] These records were identified as "invalid" in the stop database.
[214] We define an invalid RD as one that does not exist. As noted in footnote 185, there are several potential explanations for these errors (e.g., transposition errors and confusion over the RD in which the stop took place).

Analysis Group has developed several recommendations regarding the FDR form and stop data collection protocol used by the LAPD. Given the importance of the stop data in assessing the issue of racially biased policing, we have devoted Chapter 7 to presenting these recommendations.

5.2.2 Crime

The crime data include crimes reported to the LAPD. Officers collect these data by completing crime reports when a crime is reported. Crime data are a direct measure of the amount of crime in an area. Crime data may be used as a control variable in various analyses. In addition, the race of criminal suspects may serve as a benchmark for pedestrian stops (*see* Chapter 6 for further discussion).[215]

The crime database contains information about each reported crime, including:

- date and time;
- RD in which the crime occurred;
- type, class, and reporting category of the crime;
- whether shots were fired;
- whether an altercation took place;
- any unusual occurrences; and
- information about the involved parties, including their role in the incident (e.g., suspect, arrestee, victim, witness, and reporting party), race, age, gender, and zip code of their residence.

The crime data received by Analysis Group covers the period from January 1, 2002 through March 31, 2004. The database contains 694,639 crimes involving 1,460,211 parties (e.g., suspect, victim, and witness), 366,026 of which are suspects.[216] There are often multiple parties, including suspects, for a crime because each party is recorded as a separate record in the database.

In the crime database, 5,686 crimes (approximately 1 percent of all crimes) list an invalid RD and are therefore unusable.[217] The remaining 99 percent of crimes may be used to develop a measure of criminal activity. However, not all crimes with a valid RD can be used to develop a benchmark for

[215] The race of criminal suspects is sometimes provided in more detail than the race provided in the stop data (e.g., country of origin or nationality are listed instead of race). Therefore, in order to make the race categories comparable for these two data sets, the racial categories for criminal suspects will be aggregated into the racial categories used in the stop data (i.e., white, Hispanic, black, Asian, and other).

[216] Some non-crime reports (e.g., death reports, evidence reports, missing person reports, and vehicle recovery/impound reports) were included in the crime database provided to Analysis Group. Since these reports are not crime reports, they have been excluded.

[217] *See* footnote 214.

pedestrian stops. Suspect race is available for 252,374 of the 688,953 crimes with a valid RD (approximately 37 percent). Due to the fact that there are multiple suspects for some crimes, there are 362,841 suspects that can be used to develop a pedestrian stop benchmark. While this limits the number of observations available for developing a benchmark, there are still a significant number of criminal suspects available for this purpose. In addition, the crimes that are most highly correlated with stop activity may be those most likely to contain indications of suspect race.

5.2.3 Gangs

Given the high level of gang activity in the City of Los Angeles, it may be important to account for gang-related law enforcement activities in any analyses, especially given that gangs in Los Angeles have tended to proliferate among young, male minorities.[218]

There were three different types of information available on gangs: summary statistics, maps, and gang crime data. Summary statistics indicate the number of gangs, their racial composition, their general location, and the number of members in each gang. Maps indicate the number of gangs in different areas of the City. While both of these types of data may provide valuable information on the gang problems in the City, they are not in a readily usable format for data analysis. Summary statistics are only available by police bureau, not RD.[219] For both the summary statistics and maps, there is a fundamental limitation. Counts of gangs or gang members are not necessarily indicative of the level of gang activity in an area. Other factors, such as the type of gang, size of the territory, and locations of competing gangs, may play a significant role in determining gang activity.

A better measure of gang activity is likely to be the number of crimes committed by gang members. Analysis Group was provided a separate database that identified which crimes in the crime database were considered to be gang-related. Officers collect these data by indicating that a crime was gang-related on a crime report.

The data provided to Analysis Group identifies 25,582 crimes as gang-related from January 1, 2002 through March 31, 2004. The gang crime data does not appear to include all gang-related crimes. Audits by the Audit Division of the LAPD and the Office of the Inspector General for the Los Angeles Police Commission found that inconsistent coding of crime reports led to underreporting of gang

[218] According to the LAPD, as of August 2004, 59.4 percent of gang members were Hispanic, 34.6 percent were black (Crip and Blood gangs), 3.2 percent were Asian, and 2.8 percent were white (Stoner and white gangs). Source: Los Angeles Police Department, "Citywide Gang Crime Summary," LAPD website (www.lapdonline.org under General Information).

[219] Los Angeles Police Department, "Citywide Gang Crime Summary," LAPD website (www.lapdonline.org under General Information).

crimes.[220] As a result, the gang crime database may not be reliable for measuring gang activity in Los Angeles. Analysis Group will evaluate these data further to determine their reliability.

Analysis Group understands that the LAPD is working to correct the underreporting of gang crimes. We recommend that the LAPD continue to develop a uniform method for identifying whether a crime is gang-related. These data have the best chance of measuring gang activity. Given that gang summary statistics and maps are currently collected, it may be beneficial to refine these data. For both gang summary statistics and maps, breakdowns by RD would be ideal for stop data analyses purposes. Gang maps could be further improved by creating a uniform mapping protocol or centralizing the creation of gang maps.

5.2.4 Shootings at Officers

Data regarding shootings at officers contain records detailing incidents in which a firearm was discharged at an LAPD officer. These data may be used as a proxy for crime in an area. They may also indicate areas where officers are likely to feel more threatened and thus may affect their stop and post-stop activities.

The shootings at officers database includes the following information:

- date of the shooting;
- RD in which the shooting occurred; and
- type of firearm used.

The shootings at officer database provided to Analysis Group contains 332 shootings at officers in 271 unique RDs. The database covers incidents that occurred from January 1, 2002 through June 1, 2004. Given the relatively small number of observations in this database and the potentially small degree of variation across RDs (e.g., many RDs have no shootings at officers), it is not clear whether the number of shootings at officers per RD will be useful in our quantitative analyses. If not, it may be possible to code RDs as having or not having shootings at officers. Alternatively, shootings at officers may be considered qualitatively.

5.2.5 Citations

Citations data consist of tickets issued by LAPD officers for traffic and penal code violations. These data may be used to supplement the stop database. While the stop database identifies whether a

[220] Los Angeles Police Department, Audit Division, "Audit of Special Enforcement Unit, Gang Related Crime Reporting Statistics Procedures, Deployment Period No. 4, 2003," January 29, 2004; Los Angeles Police Commission, Office of the Inspector General, "Review of the Department's Audit of Gang Related Crime Reporting Statistics Procedures," May 14, 2004.

citation was given during a stop and the citation number, it does not provide the violation for which a citation was issued. By using the citation number field in the stop database, it should be possible to query the citations database and identify the violations for all stops for which a citation was issued.

As noted in Section 5.2.1, the stop database contains 1,256,186 stops conducted from July 1, 2002, through March 31, 2004. A further review of this database identified that citations were given in 899,591 of these stops (72 percent of all stops). These figures exclude release from custody (RFC) citations after July 2003, which are listed separately in the "action taken" section of the FDR but share the same citation number field with traffic/penal code citations. Prior to July 2003, there is no way of distinguishing traffic/penal code citations from RFC citations in the stop data since they were not listed separately on the FDR.

Upon merging the citations database with the stop database for the purposes of extracting the violations for which suspects were cited, Analysis Group found that 846,662 stops with citation numbers could be matched to the citations database (94 percent of all stops where citations were given). Currently, the stops with citations that could not be matched to the citations database cannot be corrected. The LAPD has identified potential reasons for the discrepancies between the two databases and continues to review these discrepancies. One explanation is RFC citations. As noted above, there is no way to identify which citation numbers on FDRs were RFC citations prior to July 2003.[221] If they were identifiable, we would simply count them as stops with RFC citations, not stops with traffic/penal code citations. Because RFC citations constitute a large proportion of the stops with citation numbers that could not be matched to the citations database in the post-July 2003 data (14,274 of 26,258 stops with citation numbers that did not match or 54 percent), Analysis Group believes that they explain a large proportion of the discrepancies in the pre-July 2003 period as well. Given that they cannot be linked to a type of violation in the citation database, they will be effectively treated as stops without citations. We do not expect this to be a significant issue since we do not anticipate including RFC citations with traffic/penal code citations in any analyses.

The second potential explanation for discrepancies between the stop and citations databases is parking citations. When a parking ticket is given by an officer, they may put the parking citation number in the field where the traffic citation number is recorded on the FDR since there is no separate field for parking ticket number. Upon reviewing this issue, the LAPD determined that it is not possible to identify which numbers listed in the field for citation number in the stop database are parking citations. If parking citations were identifiable, we would simply count them as stops with parking

[221] As previously noted, RFC citations after July 2003 can be identified and separated from traffic/penal code violations.

citations, not as stops with traffic/penal code citations. Given that they cannot be linked to a type of violation in the citation database, they will be effectively treated as stops without citations. Again, we do not expect this to be a significant issue since we do not anticipate including parking citations with traffic/penal code citations in any analyses. Also, instances where parking citations are included in the citation field are not likely to be common since officers do not complete an FDR solely as a result of a parking ticket, but only when a parking citation is results from an event that requires an FDR.

The third potential explanation for the discrepancies between the stop and citations databases is typographical errors. The LAPD conducted a cursory review of a sample of the stops with citation numbers for which Analysis Group could not identify a matching citation in the citations database. This review found some cases where citation numbers were incorrectly written on FDRs or where they were unreadable. Given the relatively small number of occurrences and the fact that they must be reviewed manually by collecting source documents, it is not likely to be worth the time and effort to go back now and identify and fix these FDRs. Discrepancies resulting from typographical errors are not likely to pose a significant problem in our overall analyses given the small number of occurrences.

In order to prevent inconsistencies between the stop and citations databases in the future, Analysis Group recommends that the LAPD initiate an automated consistency check between the stop and citation databases. This way errors can be immediately identified and resolved.

5.2.6 Arrests

The arrest data consist of information pertaining to each arrest made by the LAPD. Arrest data are an indirect measure of the amount of crime in an area. Therefore, they may serve as a control variable in various analyses. The arrest data may also be used to supplement the stop database. While the stop database identifies whether a person was arrested and if so the booking number, it does not provide the arrest charge (i.e., the violation for which the person was arrested). By using the booking number field in the stop database, it should be possible to query the arrest database and identify the arrest charge for all stops where an arrest was made. The arrest charge will be important since the type of charges may be indicative of the severity of the crime and its potential relationship with police activity.

The arrest database contains information about each arrest, including:

- arrest date and time;
- RD where the arrest took place;
- reason for arrest;

- identification number of the officer that made the arrest; and
- information about the individuals arrested, including race, age, gender, and zip code of their residence.[222]

The arrest database reviewed by Analysis Group has 350,891 observations and covers arrests made from January 1, 2002 through March 31, 2004. There are 103 records in the arrest database that do not include the RD in which the arrest occurred. Therefore, 350,788 of the 350,891 observations (99.97 percent) can be analyzed when using the arrest data as a control variable.

As noted in Section 5.2.1, the stop database contains 1,256,186 stops conducted from July 1, 2002, through March 31, 2004. A further review of this database identified that arrests were made in 91,934 of these stops (7 percent of all stops). Upon merging the arrest database to the stop database for the purposes of extracting the arrest charge, Analysis Group found that 85,545 stops with arrests (93 percent of all stops where arrests were made) could be matched to the arrest database. Currently, the reasons that some stops with arrest could not be matched to the arrest database have not been determined. Analysis Group understands that the LAPD is currently working to resolve the discrepancies between the two databases. Once these discrepancies are resolved, we will evaluate their impact, if any, on the use of arrest data in the stop data analyses.

5.2.7 Parolees and Probationers

Parolee data, which are maintained by the California Department of Corrections, and probationer data, which are maintained by several different law enforcement agencies and compiled by the California Department of Justice, contain information such as last known residence. Therefore, the number of parolees and probationers in a geographic area could potentially be determined and may impact law enforcement activities in certain areas.

Analysis Group understands that parolee and probationer data will only be available at the zip code level. The City is in the process of attempting to obtain these data. When this new data set becomes available, we will review it and determine its usefulness and any limitations.

In addition to the parolee and probationer data discussed above, it may be possible to identify parolees and probationers in an analysis of post-stop activity. Parolees in California may be legally

[222] The race of persons arrested is sometimes provided in more detail than the race provided in the stop data (e.g., country of origin or nationality are listed instead of race). Therefore, in order to make the race categories comparable for these two data sets, the racial categories for persons arrested will be aggregated into the racial categories used in the stop data (i.e., white, Hispanic, black, Asian, and other).

searched by a law enforcement officer at any time and with or without cause.[223] California law is unclear on whether similar rules apply to probationers, but the California Supreme Court has routinely upheld probation conditions that reach the same result by requiring probationers to submit to searches at any time and without any evidentiary showing by police.[224] In any event, "parolee/probationer" status is listed as an authority for a search on the LAPD FDR. In the stop database provided to Analysis Group, there were 33,815 parolees/probationers searched.

5.2.8 LAPD Officers

Officer data contain background information on LAPD officers. These data will allow for comparisons of officers in internal benchmarking analyses. The officer database includes the following information about each officer:

- identification number;
- birth date;
- race;
- gender;
- employment start date with the LAPD;
- rank;
- position code;
- employment status;
- unit number to which officer was assigned; and
- start and end dates of assignment to the unit.

Because officers are often assigned to more than one unit during their careers with the LAPD, there are multiple entries for some officers in the officer database. The officer database provided to Analysis Group contains 99,282 observations and covers employment from June 24, 1949 through April 27, 2004. These observations correspond to 18,149 unique officer identification numbers. .

As noted in Section 5.2.1, officers must record their officer division number on all FDRs. Since officer division number takes on different values for each type of officer, traffic and patrol officers can be separated for any analyses.

[223] One condition of parole in California states that person, residence, and property can be searched by a parole agent or any law enforcement agent with or without a search warrant and with or without cause (*see* the California Department of Corrections Parolee Handbook, http://www.corr.ca.gov/parolediv/handbook/conditions_ex.asp).

[224] *See In Re Tyrell J.*, 876 P.2d 519 (Cal. 1994). Some authority exists in other federal circuits that would permit warrantless searches of probationers based on reasonable suspicion, even without an authorizing probation condition or state regulation (*see United States v. Keith*, 375 F.3d 346 (5th Cir. 2004).

5.2.9 Specialized Enforcement Units

The LAPD has specialized units that focus on gangs and career/wanted criminals. Since officers assigned to these units focus on specific types of criminal activity, it may be important to separate them from officers that do not focus on such activities.

This is especially true for officers assigned to the gang units. Although gang unit officers record data on stops, their stop activity is very different from that of traffic and patrol officers. First, because gang unit officers are focused on gangs, they make fewer non-gang-related stops or respond to fewer calls for service than patrol officers. Second, because gangs in Los Angeles have tended to proliferate mostly among young, male minorities,[225] it is likely that gang officers will stop and conduct post-stop activities more often for young, male minorities. In order to account for the unique stop patterns of gang officers, it may be important to analyze gang unit officers separately from traffic and patrol officers. Stop activity of gang officers (i.e., the number of stops by gang officers in different geographic areas) may also serve as a proxy for gang activity and thus may be included as a control variable in various analyses.

The SEU officer database contains the following information:

- officer identification number;
- rank;
- assignment; and
- assignment start and end dates.

The SEU officer database provided to Analysis Group includes 908 records and covers assignments for the years 2000 through 2004.

5.2.10 Police Deployment

Police deployment data provide information on the deployment of LAPD units. These data provide the number of officers assigned to a given area, day, and time. Generally, the deployment of traffic and patrol officers is done by area and determined by demand for police services, crime, population served, size of geographic area covered, and response time. For each shift (i.e., day and time) in an area, cars are initially assigned to a "basic car area," which encompasses a group of RDs. Although officers are assigned a particular area, they are sometimes dispatched to other adjacent areas when the need arises.

[225] *See* footnote 218.

The deployment of some centralized LAPD entities, such as Metro and the Community Safety Operations Center, are done on a citywide basis based on crime and specific community issues and concerns. Officers in these entities are not necessarily assigned to a specific area but rather a police bureau, which is made up of multiple areas.

Deployment data may serve as a control variable for analyzing stop patterns across geographic areas. If there are more officers in an area at a given time and day, then there is the potential for more stops than if there were fewer officers. In addition, deployment data will be useful in defining the peer groups for internal benchmarking analyses.

The deployment database contains the following information:

- unit identification;
- start date of the unit's deployment;
- end date of the unit's deployment;
- time of the deployment;
- area to which the unit is deployed;
- number of officers deployed; and
- identification numbers of the deployed officers.

The police deployment database contains 941,843 observations. The database covers units deployed from January 1, 2002 through July 26, 2004.

One potential limitation for deployment data is its dynamic nature. Officers may not always be where they were initially assigned as they are dispatched during their shift to cover other areas in response to calls for service and specific incidents. Given that officers typically stay in and around their assigned area, deployment data should still be a good estimate of the number officers in each general area of the City.

5.2.11 Officer Commendations

Officer commendations data provide all awards received by LAPD officers from the police department. These data are broken into two databases: major commendations and minor commendations. Officer commendations may be used as independent or control variables in order to help explain officer stop patterns.

The major commendations database includes the following information:

- officer identification number;
- type of commendation;

- initiator of commendation (i.e., department or public);
- date of the event for which the commendation is awarded; and
- date the commendation was awarded.

Because officers may receive more than one commendation, multiple entries exist for some officers in the major commendations database. The major commendations database provided to Analysis Group contains 527 observations for occurrences from March 15, 1993 through July 5, 2003. These observations correspond to 494 unique officer identification numbers.

The minor commendations database includes the following information:

- officer identification number;
- type of commendation;
- initiator of commendation (i.e., department or public); and
- date the commendation was reported.

Again officers may receive more than one commendation. Thus there may be multiple entries for an officer. The minor commendations database provided to Analysis Group contains 69,661 observations for occurrences from July 1, 2002 through October 18, 2004. These observations correspond to 9,374 unique officer identification numbers. Given the relatively small number of observations in this database and the potentially small degree of variation across RDs (e.g., many RDs have no shootings at officers), it is not clear whether the number of commendations per officer or RD will be useful in our quantitative analyses. If not, commendations may be considered qualitatively.

5.2.12 Complaints

The complaints data contain information regarding all complaints filed against LAPD officers. This includes sustained complaints (i.e., complaints where wrongdoing was found on the part of an officer and there was a resulting action against them),[226] complaints not sustained (i.e., complaints where no wrongdoing was found on the part of an officer), and pending complaints. The number of sustained complaints may be used as a control variable in order to help explain officer stop patterns. Complaints not sustained and pending complaints must be evaluated with great care since no wrongdoing by officers was found or no determination has yet been made. Further, the type of officer action for which a complaint was filed should be considered as there are different degrees of misconduct.

[226] The complaint database distinguishes between complaints where wrongdoing was determined internally by the department (termed "sustained") and those determined by an independent review (termed "guilty"). For simplicity, this report refers to both types of resolutions as sustained.

The complaint database includes the following information about each complaint:

- date of the officer action for which the complaint was filed;
- date of complaint;
- date the complaint was closed;
- source of complaint;
- officer identification number, bureau, division, and rank;
- complaint classification;
- result of complaint;
- penalty received, if any; and
- penalty length, if any.

There are some potential limitations inherent in complaint data. Given the seriousness with which complaints are handled by the department and potentially lengthy administrative processes, it can take a significant amount of time to resolve a complaint.[227] The number of sustained complaints in the time period for which Analysis Group has stop data, July 2002 through May 2004, is relatively low. There were 1,786 misconduct allegations sustained against 1,440 officers in that time period (13 percent of all allegations filed in the time period).

To provide a more complete understanding of officer stop patterns, it may be useful to examine a longer time period. From January 1, 1997 to September 24, 2004, there were 13,685 misconduct allegations sustained against 6,133 officers (19 percent of all misconduct allegations filed in the time period).

It is not clear at this time whether there will be a sufficient number of sustained complaints to include this variable in any statistical analysis. Further review of the data is needed. If it is determined that there are not enough sustained complaints for a quantitative analysis, they may still be used qualitatively. The entire complaint database provided to Analysis Group contains 71,835 total misconduct allegations, including those pending and not sustained, against 10,031 officers from January 1, 1997 through September 24, 2004.

5.2.13 Calls for Service

Calls for service data should contain information regarding calls from the public for police services. These data indicate the need for police in different areas and thus explain police deployment

[227] There is a one-year statute of limitations on misconduct complaint investigations, which can be extended in certain circumstances (per City Charter, Section 1070).

patterns. They are also an indirect measure of crime and may serve as a control variable in various analyses.

The City of Los Angeles is in the process of providing to Analysis Group the calls for service database, which consists of data on all LAPD dispatch calls, including the reason for the call. These include calls from the public and officer calls to dispatch. Calls from the public consist mainly of 911 calls. Officer calls to dispatch include those made by officers when making traffic stops, pursuing suspects, requesting assistance, requesting backup, and notifying dispatch when they are not available for calls (e.g., lunch breaks).

Analysis Group understands that the public calls for service can be identified and separated from the officer calls to dispatch. When the calls for service database becomes available, we will review it and determine its usefulness and any limitations.

5.2.14 Use of Force

Use of force data include all incidents in which an LAPD officer used force on a suspect. Use of force data may provide an indication of the temperament of suspects and/or officers. They may also indicate areas where officers are likely to feel threatened, thus potentially affecting their stop and post-stop behavior.

The use of force database will include, by officer, all uses of force, as defined by the LAPD. Uses of force include physical force (e.g., wrist locks, kicks, and punches), impact devices (e.g., baton), chemical agents (e.g., pepper spray), TASERs, less-than-lethal devices (e.g., beanbag shotguns), and firearms.

The LAPD has several use of force databases and is currently developing a centralized use of force database in order to ensure accurate and timely data collection. It is anticipated that this new database will not be available until early 2005. When it becomes available, Analysis Group will review it and determine its usefulness and limitations for purposes of analyzing pedestrian and motor vehicle stop data.

5.2.15 Traffic Collisions

Traffic collisions data have been used to develop motor vehicle stop benchmarks in studies of racially biased policing in other jurisdictions. Typically, these data include information pertaining to all types of traffic collisions.

LAPD officers collect data only for injury accidents and specialized types of crashes (e.g., crashes involving traffic felonies, crashes of drivers charged with driving under the influence (DUI),

hit-and-run crashes, and crashes involving City property). Therefore, a significant portion of all traffic accidents is not captured. Since the available traffic collisions data would not represent all traffic accidents, these data are not likely to form the basis for a reliable motor vehicle benchmark. Given the status of these data, Analysis Group did not request or analyze them. Traffic collision data would be of use as a benchmark for motor vehicle stops only if data on all or substantially all incidents were recorded.

5.2.16 Data from Blind Enforcement Mechanisms

Data from blind enforcement mechanisms, such as air patrol radar or cameras mounted at traffic lights, have been discussed in the literature on racially biased policing as a potential source of data to form a benchmark for motor vehicle stops. While traffic light cameras are used in the City,[228] traffic light camera data cannot be released to the public per California state law.[229] Even if data from blind enforcement mechanisms were available, the results may not be reliably generalized to the driving or violating population of the entire jurisdiction or to all types of violations because the sample of those ticketed by blind enforcement mechanisms may not be representative of this larger population.

5.3 Demographic, Economic, and Socioeconomic Data

Demographic, economic, and socioeconomic data provide descriptive information about the City of Los Angeles and its inhabitants. Some of these data were gathered and maintained by the City of Los Angeles in its regular course of business. Other information was publicly available through the federal government.

5.3.1 Census Data

U.S. Census data, which was obtained from the U.S. Census Bureau, will be used to provide certain demographic information for the City of Los Angeles and its inhabitants. Census data will be used as control variables when analyzing stop patterns across geographic areas. As discussed in Sections 2.6.10.1 and 4.1.1, census data have serious potential limitations. Therefore, they will not be used as a stop benchmark.

Some of the variables of interest to Analysis Group include:

- total number of residents (population);
- number of residents by race, age, and gender;
- number of unemployed persons;

[228] There are currently 16 locations with traffic light cameras (four per police bureau).
[229] Per California state law (California Vehicle Code Section 21455.5(e)(2)), traffic light camera data cannot be released.

- number of persons living below the poverty line;
- number of families living below the poverty line;
- number of owner-occupied housing units;
- average household income;
- population density;
- residential stability and mobility; and
- number of single-parent households.

Analysis Group expects to use data from the 2000 decennial census because they are the most current data available. The census data are available at the census tract level. Because the stop data are collected at the LAPD RD level, we will convert census data from census tracts to RDs. We will convert the 2000 census data into RDs using the LAPD translation table discussed above for sales volume data. For each RD that is wholly contained within a census tract, the values for census data will be set equal to those values for the census tract in which it is contained. For RDs that are in more than one census tract, the values for census data will equal the average of the values for the census tracts in which it is contained.[230]

Census data have two potential limitations. First, they may undercount minorities (*see* Section 2.3.9.1). If this is the case, then it brings into question the validity of census data. While adjustments to census data have been proposed in order to eliminate these undercounts (e.g., Accuracy and Coverage Evaluation Survey [A.C.E.]), the U.S. Department of Commerce has repeatedly decided against it and this decision has been upheld in the courts.

The second limitation is that the census data do not measure the driving population (*see* Section 2.3.9.1). Therefore, it makes for a poor motor vehicle stop benchmark. This sentiment has been widely acknowledged in the racially biased policing literature.

5.3.2 Sales Volume

The sales volume data provided to Analysis Group by the City of Los Angeles consist of total gross receipts and retail gross receipts by zip code for fiscal year 2003. These data are a measure of economic activity. They indicate commercial areas where there may be more people during certain times of day. Sales volume data may be useful as a control variable in various analyses.

[230] This conversion process is more straightforward that that for sales volume data or business tax registration certificates data since the census data will be expressed as percentages (e.g., percentage of whites in an area) or averages that cannot be divided amongst RDs (e.g., average household income).

Since the data are identified by zip code, they require conversion to RD in order to be used in any analysis of stop data. The conversion of sales volume will be a two-step process. First, sales volume by zip code will be converted to sales volume by census tracts using a translation table obtained from the U.S. Census Bureau. Second, sales volume by census tracts will be converted to RDs. This second step will utilize a translation table provided by LAPD. This table identifies the RDs in each census tract in the City. Therefore, sales volume in each census tract will be divided evenly across the RDs within the census tract. For RDs that are in more than one census tract, sales volume will equal the sum of the allocations from each tract it is in.

There is one possible limitation to these data. In order to protect individual licensees' confidential information, sales volume was not provided for zip codes with three or less business tax registration certificates. Of the 127 zip codes in the City, total sales volume and retail sales volume were provided for 118 and 114 zip codes, respectively. For the zip codes without sales volume data, they will have to be excluded from any analysis. The exclusion of data may limit the usefulness of the entire data set. This issue will be explored when analysis is conducted.

5.3.3 Business Tax Registration Certificates

The business tax registration certificates database consists of the number of tax registration certificates in each zip code within the City during 2003. There are two counts given for each zip code: the total number of certificates and the number of retail certificates only. Analysis Group also has the number of certificates citywide. These data are measures of economic activity across geographic areas and possible indicators of commercial and residential areas. These data may be useful as control variables in various analyses.

Since business tax registration certificates data are identified by zip code, they must be converted to RD. Analysis Group will use the same conversion process as described for sales volume data. If the number of business tax registration certificates were available by RD rather than zip code, it would alleviate the need to reaggregate the data as described above.

While the business tax registration certificates database has the same limitations as the sales volume database, we have slightly more information. For the zip codes without sales volume data, we know that there are three or less business tax registration certificates. Therefore, we can estimate the number of business tax registration certificates per zip code. There are several potential methods for estimating the number of business tax registration certificates. First, we could use the midpoint of the range. Since the actual values range from zero and three, the midpoint would be two and one half. This method is easy to employ but rather simplistic and assumes that all zip codes with three or less

business tax registration certificates have the same number of licenses. However, since the variation amongst these zip codes without data is small (from zero to three), this method may yield reasonable estimates. An alternative method would be to evenly allocate across those zip codes without data the number of business tax registration certificates not already accounted for in a zip code. In other words, the value for each zip code without data would be the difference between the total citywide number of business tax registration certificates and the total number of business tax registration certificates already assigned to zip codes, divided by the number of zip codes without data. A third potential allocation method is to weight each zip code by some other variable, such as size or population. Further review of this database will be required to determine the appropriate estimation methodology.

In the future, Analysis Group recommends that business tax registration certificates for all zip codes be made available, even if there are three or less business tax registration certificates. No confidential information would be revealed if the number of business tax registration certificates, but not sales volume, were provided. This would provide actual information for all zip codes and alleviate the need to estimate the number of business tax registration certificates for any zip codes.

5.3.4 Vacant/Abandoned Buildings

The vacant/abandoned buildings database identifies properties that were vacant or abandoned and later boarded up by the City. These data may be used as a measure of disorder and physical decay and may serve as a control variable in various analyses.

The vacant/abandoned buildings database includes RD of each property and the date when the property was boarded up. The vacant/abandoned buildings database provided to Analysis Group includes 7,394 records as of May 12, 2004. The usefulness of this data may be limited given that there are no dates indicating when the property became vacant or abandoned or when it was reported to the City.

For future data collection efforts, Analysis Group recommends that the City collect the date when a property became vacant (or was first known to be vacant) in addition to the date when the property was boarded up. This would provide a date range for when a property was left uncared for.

5.3.5 Traffic Volume

Traffic volume data measure the volume of traffic on roads. These data may be useful in identifying areas with a greater volume of vehicles and potential for more violations. Traffic volume data could also be useful in developing a motor vehicle benchmark.

In the City of Los Angeles, traffic volume data are collected in order to assist with traffic planning. However, these data are collected when needed (e.g., for traffic safety and new development concerns). Therefore, not all roads in the City are included and the available data are not likely to be representative of actual traffic volume on all roads. As a result, these data are not usable in our analyses. In order to for these data to be usable, the available data must be representative of the area in which they are located. Furthermore, there must be data for each area of the City (i.e., RDs or geographic area that can be converted to RDs).

5.3.6 Other Economic Indicators

As previously noted, measures of economic activity may be useful control variables in analyses of stop data. Such measures that were provided to Analysis Group were sales volume and business tax registration certificates data. Measures of economic activity that were not available or useable include business tax collections and vacant retail/office space.

Business tax collections data measure the amount of business taxes paid to the City of Los Angeles. Vacant retail/office space data measure the amount of commercial property that is unoccupied in the City of Los Angeles. Both of these types of data were not available from the City. Therefore, Analysis Group will consider the other measures of economic activity that were available.

5.3.7 Other Measures of Disorder/Physical Decay in the City

Measures of disorder and physical decay in the City may also be useful control variables in analyses of stop data. One such measure, vacant/abandoned buildings, was provided to Analysis Group. Measures of disorder that were not available or in a usable format include health and safety code violations, abandoned vehicles towed, burned out streetlights, missing or broken signs, and graffiti.

Data for health and safety code violations, abandoned vehicles towed, missing or broken signs, and graffiti were not available in a usable format. Data for burned out streetlights were only available by street and could not be readily aggregated to RDs. As a result of the unavailability of these data, Analysis Group will consider vacant/abandoned buildings as a measure of disorder and physical decay.

5.3.8 Survey Data Regarding the Public's Satisfaction with the LAPD

In order to gather some background information on public sentiments about the LAPD, Analysis Group requested any available survey data that may have evaluated this issue. No survey data in this regard was available. The only available information on the public's satisfaction was anecdotal.

5.4 Conclusion

As noted in Chapters 2 and 3, other academic researchers and analysts conducting data analyses in other jurisdictions have emphasized the importance of quantifying all influences on police stop activity before drawing conclusions regarding racial patterns in those stops. This review of the available data for the City of Los Angeles indicates a wealth of data that we believe are relevant for such a careful and thoughtful empirical modeling of stop activity. On the other hand, we are also drawing on the lessons learned by other researchers regarding the potential limitations on the reliability of data used in quantitative analyses. While we believe there are adequate data to conduct insightful analyses of stop activity by the Los Angeles Police Department, our findings will be tempered by the data limitations we have discussed above. Note that although these data limitations may preclude the use of certain data elements in specific quantitative analyses, those data may nonetheless be valuable in qualitative analyses.

CHAPTER 6: METHODOLOGIES FOR ANALYZING PEDESTRIAN AND MOTOR VEHICLE STOP DATA IN THE CITY OF LOS ANGELES

6.1 Introduction

A wide variety of quantitative methodologies have been developed and applied in other jurisdictions, as well as in academic studies, for evaluating the issue of racially biased policing.[231] The study of racial bias in police stop activity is a rapidly evolving field in which increasingly sophisticated approaches are adopted with each passing year. There is now wide consensus that some approaches, such as simple external benchmarking of stop activity to census data, are fundamentally flawed. However, there is no widespread agreement as to a single analytical approach that should be implemented. After having reviewed the types of approaches that have been implemented in other jurisdictions and considered in the literature, and having reviewed the availability and quality of data, Analysis Group has reached certain general conclusions regarding the use of quantitative analysis of police stop data.

First, we believe that no quantitative analysis of stop data can provide a definitive yes or no answer to the question: "Does the LAPD engage in race profiling?" There will always be a qualitative element to any conclusion because statistical analyses simply cannot inform us of the motivations of individuals. We can, however, evaluate whether enforcement outcomes potentially fall disproportionately on minorities, after accounting for all legitimate factors that drive police enforcement activity. We can reduce our reliance on purely qualitative evaluation with appropriately specified and implemented quantitative analyses. Thus, we anticipate that our analyses will be instructive, rather than conclusive, allowing a narrowing and focusing of any qualitative inquiry.

Second, Analysis Group recognizes that there is a trade-off between analytical sophistication and ease of implementation. We must be cautious to avoid excessively simplistic approaches that provide "quick and dirty" answers that are fundamentally uninformative of the important questions being posed. On the other hand, we should not be paralyzed by the fact that no single study will be perfect in all dimensions or answer all possible questions. For each type of methodology that we have proposed, we will discuss both the strengths and purposes of the study, as well as its constraints and limitations.

Third, the methodologies that are adopted should be tailored to the jurisdiction for which they are designed. They must be adapted to the specific questions that are pertinent for any particular

[231] The discussion in this chapter focuses on evaluation of race disparities in outcomes. To the extent practicable and relevant, we will evaluate gender and age disparities as well.

jurisdiction and attempt to capture the idiosyncrasies of the particular jurisdiction. Further, the methodologies must take account of both the richness and the limitations of data that are available for any particular jurisdiction. Analysis Group has reviewed the data, as described in Chapter 5, and will evaluate its usefulness for each analysis proposed.

Fourth, we anticipate there will be no single study that will provide a complete explanation of the observed racial differences in the raw stop data. Although we can control for the legally valid law enforcement activities that may explain raw differences in the stop data, the difference may arise for a number of unique reasons:

- officers may be more heavily deployed in minority areas of the City and make more stops of all persons in those areas;
- officers may have an increased propensity to make stops when in such areas; or
- officers may have an increased propensity to stop minorities, specifically, given their representation in an area.

The first two reasons listed above can lead to racial differences in total stop outcomes across the City, even if the proportion of minorities stopped in each area is the same as the proportion present in each area. Thus, a benchmark comparison of the two proportions in each area would not indicate a citywide racial difference, even if such a difference existed. The third reason would be revealed by a benchmark comparison of the proportion of minorities stopped in a given area to the proportion of minorities at risk of being stopped in that area. However, a benchmark comparison relates only *ratios* and so would be uninformative of the impact on the absolute *number* of stops of minorities. A full understanding of the racial differences in the raw stop data will require more than one type of analysis.

6.2 Summary of Proposed Methodologies for Analyzing Pedestrian and Motor Vehicle Stop Data

In light of these general perspectives about the usefulness and the constraints of empirical analysis of stops, Analysis Group proposes the implementation of three types of data analysis methodologies:

- External Benchmark Study of Pedestrian Stops;
- Study of Post-Stop Activity;
  - Search Analyses;
  - Enforcement and Other Post-Stop Analyses; and
- Internal Benchmarking of Pedestrian and Motor Vehicle Stops (i.e., Officer-to-Officer Benchmarking).

Each of these individual methodologies is anticipated to provide unique insights for understanding any observed discrepancies in stop rates or in post-stop outcomes between whites and minorities. Each of these methodologies is supportable by the data that are available and has been implemented or recommended in some form, either by academic researchers (*see* Chapter 2) or other jurisdictions (*see* Chapter 3). Thus, these approaches are well grounded as acceptable approaches to investigating the questions at hand. Each methodology is described in detail below.

6.3 Limitations of Statistical Analyses

Statistical analysis of data can provide insights into patterns of behavior, across the City and over time, that may be informative about the effectiveness and respectfulness of the LAPD's policing. Courts have accepted statistical analysis as a means of providing insight into claims of inappropriate reliance on race by law enforcement officials. As discussed in Section 2.2, the *Armstrong* test requires racial profiling claimants to provide evidence that they were treated differently than similarly situated persons of another race who were not stopped by the police (i.e., discriminatory effect). In order to fulfill this requirement, plaintiffs usually resort to statistical evidence showing differences in police motor vehicle stop rates among racial subgroups of the driving population.[232]

Statistical evaluation of possible racial profiling has important limitations, however. Even if officers do not use race as a factor in making a stop, statistical correlations between race and stops may emerge. If there are racial patterns in the underlying level of criminal activity, then even race-blind enforcement could generate statistical correlations between race and stops. Therefore, it is critical to attempt to account for all legally valid influences on stop activity that may yield such spurious statistical correlations.

The academic literature emphasizes the importance of gathering and evaluating information about the context in which stops occur (*see* Section 2.3.10). This information allows researchers to apply statistical techniques that can help explain differences in stop rates and outcomes. Note that these efforts to account for all legitimate factors may turn out to be inadequate. Any race differences that remain may be subject to qualitative explanations. Moreover, none of our analyses are capable of providing an assessment of discriminatory intent, as statistical analysis will never reveal the motivation of any officer's behavior.

[232] *Chavez v. Illinois State Police*, 2001; *United States v. Mesa-Roche*, 2003.

6.4 Time Period of Analysis

Analysis Group recommends that the time period for the proposed data analyses methodologies be July 2003 through June 2004. We propose this period for several reasons. First, this is the latest time period for which stop data will be available when we begin analyzing the data. Currently, the City is in the process of providing to Analysis Group all relevant data through June 2004, if available. Second, as discussed in Section 5.2.1, the more recent LAPD stop data collection efforts have resulted in increased data accuracy. Third, the proposed time period will provide a sufficient amount of data in order to yield reliable results. Fourth, a full year of data will overcome any seasonal effects that may exist in overall stop activity. Fifth, as a result of the FDR revisions in July 2003, stop data before and after this date differ in terms of type and format.

6.5 Methodologies for Data Analysis

Statistical correlations between race and stop activity or between race and post-stop activities (i.e., stop outcomes) that are observed in the raw data could arise in a number of theoretically distinct ways. First, a statistical correlation overall across the City could emerge if the LAPD made more stops in areas where police contact with minorities is more likely due to a higher representation of minorities. Even if officers are unbiased in their stop decisions, given their deployment to a particular area, a stronger presence in minority areas could produce a statistical pattern of disproportionate stops of minorities. If this is the source of any observed disparity, the question that arises is whether any "excess" level of stop activity in minority areas can be explained by legitimate law enforcement prerogatives.

Second, statistical correlations between race and stop activity could emerge if, given a level of deployment in an area, officers are more likely to stop minorities. That is, of the pool of persons who potentially could be stopped in a particular area or on a certain roadway for legitimate reasons, are minorities in that pool of persons more likely to be selected? Minorities could be more likely to be selected for legitimate reasons if they have a greater propensity to violate traffic laws or engage in reasonably suspicious behavior. The proposed External Benchmark Studies are designed to investigate these questions.

Third, racially biased policing may manifest itself in disparate treatment of minorities after a stop has been made. A wide range of outcomes is possible after the initiation of a stop. Disparities in these outcomes can be evaluated with the proposed Post-Stop Activity Study.

Fourth, after having evaluated overall statistical correlations between race and stop activity, including post-stop behavior, Analysis Group is interested in understanding whether these patterns vary across particular officers or groups of officers. The proposed Internal Benchmark Study can provide a more detailed understanding of any overall disparities that are observed. Even in the absence of any overall patterns, the Internal Benchmark Study can help identify pockets of disparities of interest to the LAPD or the City.

6.5.1 Geographic Disparity Study

A geographic disparity study is intended to answer the question: Are stops more likely in minority areas, after accounting for legitimate influences on stop activity? In other words, such a study seeks to determine whether officers are more likely to be present, and thus available to make stops, in minority areas. A geographic disparity study is distinct from a benchmark analysis. A benchmark analysis identifies the minority representation among all persons stopped in an area and compares that representation to the minority representation in the benchmark population for the area. Because the analysis compares one ratio to another ratio, it provides no information about the overall level of stop activity in the area. A geographic disparity study, by analyzing this overall level of stop activity provides the most broad-based, high-level perspective on stop activity.

Although useful for that high level perspective, Analysis Group does not recommend the implementation of a geographic disparity study at this time. We believe that the implementation of such a study in the City of Los Angeles would be subject to some constraints that would render it less valuable than other studies that could be completed with the same time and resources. For example, a geographic disparity study would provide little insight into the distribution of many of the motor vehicle stops throughout the City. These stops are likely to be made on transportation corridors that traverse the City and are, therefore, unlikely to be influenced by minority representation in the geographic area. In addition, traffic bureau officers and officers from other units, such a patrol officers, have significantly different underlying activities and responsibilities. A geographic disparity study would have to eliminate these stops, which are made primarily for vehicle code violations. These constraints, as well as the high level perspective of such a study, make it less likely to result in actionable outcomes for the City. Therefore, Analysis Group recommends a focus on other, more valuable analyses as described below.

6.5.2 External Benchmark Studies

External Benchmark Studies are intended to answer the question of whether minorities are stopped disproportionately to their representation in the population legitimately at risk for being stopped. The evaluation as to whether there are excessive stops may be made relative to either external or internal benchmarks. As discussed in Section 2.3.9, one of the more difficult aspects of stop data analysis is the construction of an accurate external benchmark or baseline. More specifically, the difficulty has been determining the population that is at risk of being stopped. In other words, analysts must make sure the numerator (stop data) and denominator (benchmark data) are for the same group of individuals. For motor vehicle stops, the most appropriate benchmark is based upon the population of traffic violators because they represent the pool of persons most at risk for being stopped. Similarly, for pedestrian stops, the best benchmark is based upon those pedestrians engaged in behavior or possessing certain attributes (e.g., youth) that put them at risk for legitimately being stopped by the police. The methodological difficulties in estimating the appropriate benchmark population can be substantial and are sometimes referred to as the "denominator problem."

6.5.2.1 External Benchmark Study of Motor Vehicle Stops

External benchmarking of motor vehicle stops may not hold much potential for meaningful results if officers cannot determine the race of suspects prior to making stops. Results from the Ride-Along Study (*see* Sections 4.4.3 and 4.4.4) indicate that officers often cannot discern the race of vehicle occupants when forming suspicion or making motor vehicle stops. They are unable to determine race about two-thirds of the time when initially forming suspicion in a motor vehicle stop, with slightly more difficulty at night than during the day. They are, however, able to determine the race of vehicle occupants nearly 70 percent of the time at the initiation of a nighttime stop and nearly 80 percent of the time at the initiation of a daytime stop. Therefore, it is reasonable to consider whether a reliable external benchmark for motor vehicle stops can be developed.

It is extremely difficult to find or construct a proper benchmark or baseline to which motor vehicle stop data can be compared. One of the most difficult tasks confronting researchers on biased policing is identifying an appropriate benchmark or baseline against which to compare stop data. Without such a benchmark it may not be possible to draw valid conclusions about the actions of law enforcement officers.

6.5.2.1.1 Potential External Motor Vehicle Benchmarks

Although research on racially biased policing has a relatively short history, researchers have used a variety of benchmarks and baselines against which to compare motor vehicle stop data. A major rationale for such a comparison is to determine whether minority drivers are stopped disproportionately to their representation in the subject population. Benchmarks discussed or used in the racial profiling literature have included: adjusted and unadjusted census data;[233] licensed drivers;[234] data from blind enforcement mechanisms;[235] data from observational studies;[236] criminal suspects or persons arrested;[237] and traffic accident data.[238] Although each of these benchmarks has strengths and weaknesses, some are better and more appropriate comparison populations for research on racially biased policing than others. Analysis Group will review each of these potential benchmarks below in light of the particular situation in the City of Los Angeles and given the available data.

6.5.2.1.1.1 Census Data: Non-Adjusted and Adjusted

Early research on racially biased policing typically used census data as the benchmark for comparison with motor vehicle stop data. However, it is now generally accepted that measures of resident population (i.e., census data) are a poor indicator of the population at-risk of being stopped in motor vehicles.[239] As noted in Section 2.3.9.1, census data suffer from several shortcomings, most notably they may undercount minorities and tend not to be good indicators of the driving population at risk of being stopped.[240] Further, census data do not consider or account for differences in driving quantity, quality, or location across racial groups.[241]

As a result of these deficiencies, modifications to census data have been suggested (*see* Section 2.3.9.2). Suggested adjustments have included: 1) restricting census data to only individuals of driving age; 2) restricting census data to only vehicle owners; and 3) accounting for the inflow and outflow of persons into and out of a jurisdiction. The latter adjustments have been accomplished by various means including the use of spatial weighting and traffic flow modeling. While innovative, these

[233] Fridell (2001 and 2004); Withrow (2004); Greenwald (2004); California Highway Patrol (2000); Cordner, et al. (2002); San Jose Police Department (2002); Smith, et al. (2004); Ohio State University (2003); ACLU (2002); Hoover (2003); Thomas and Hansen (2004); Connecticut Division of Criminal Justice (2000); Missouri Attorney General's Office (2000); Smith and Petrocelli (2001); Washington State Patrol (2001).
[234] Fridell (2004); Zingraff, et al. (2000).
[235] Fridell (2004).
[236] Fridell (2004); Withrow (2004); Smith, et al. (2003); Lamberth (1997); Zingraff, et al. (2000).
[237] Fridell (2004); Alpert, et al. (2004).
[238] Alpert, et al. (2004); Fridell (2004); Withrow (2004).
[239] Fridell (2004); Withrow (2004); Schafer, et al. (2004); Miller (2000).
[240] Fridell (2004); Withrow (2004); Schafer, et al. (2004).
[241] Greenwald (2001).

experiments are complicated and most appropriate when applied to limited geographic areas, rather than a large metropolitan area such as the City of Los Angeles. Moreover, they need further validation and refinement. Overall, adjusted census data fail to account for whether members of different racial groups are equally likely to violate traffic laws.

As a result of the foregoing weaknesses with both census and adjusted census data, Analysis Group has concluded that neither will serve as a reliable benchmark for motor vehicle stops.

6.5.2.1.1.2 Licensed Drivers

A second approach to the development of a benchmark is to use licensed drivers living in the study area. As with the census data, persons living in a particular location who possess driver's licenses cannot serve as a reliable benchmark because this information does not account for differences in driving patterns among racial groups, nor account for in- and out-migration of residents. Researchers have cited national surveys that indicate substantial differences between blacks and whites in vehicle ownership rates, use of public transportation, miles driven, motor vehicle trip frequency, and trip duration.[242] Also it is known that a smaller percentage of blacks than whites possess driver's licenses.[243] An implication of these survey results is that in the aggregate, fewer blacks drive compared to their percentage representation in the population of licensed drivers.

One method that would permit these data to be used as a potential benchmark is to limit the recorded stop data (the numerator) to stops of residents only. In that way, a residential population could be compared to a population of residents who have been stopped by the police. However, this creates an issue by excluding nonresidents and nonresident drivers. In the end, and for many of the same reasons, using the population of licensed drivers as a benchmark offers only a minimal improvement over the use of census data.

Even if licensed drivers offered a basis for constructing a reliable benchmark for motor vehicle stops, it would not be useful for analysis of LAPD stop data because race is not recorded on driver's licenses in California.

6.5.2.1.1.3 Data from Blind Enforcement Mechanisms

Another potential benchmark is traffic violators ticketed by blind enforcement mechanisms, such as air patrol radar or cameras mounted at traffic lights. Using blind enforcement mechanisms may give a very accurate profile of drivers for certain violations (e.g., speeding and running a red light) in

[242] Engel, et al. (2002); Smith and Alpert, (2002).
[243] Langan, et al. (2001).

small or limited areas. However, results cannot be reliably generalized to the driving or violating population of the entire jurisdiction or for all types of violations because the sample of those ticketed by blind enforcement mechanisms are not necessarily representative of this larger population.

For the analysis of the LAPD stop data, data from traffic light cameras would be limited to 16 locations citywide. Further, Analysis Group understands that these data are subject to legal restrictions and are therefore not available.[244] Air patrol radar would not provide a basis for a benchmark of motor vehicle stops because it is not used by the LAPD.

6.5.2.1.1.4 Data from Observational Studies

Another method for estimating the population of drivers available to be stopped is to observe and count them.[245] This method of observation can count who is driving and/or who is violating specific traffic regulations. The purpose for collecting data on both drivers and violators is to determine whether persons of certain racial groups commit these traffic violations at greater rates than others. Several studies used roadway observers or cameras to record information on the race of drivers and speeders.[246] The results of this research are mixed and depend on the threshold of the violation. For example, if speeding were defined as one mile per hour over the limit, the results could vary from defining speeding as 10 miles per hour over the speed limit.

Although better than static benchmarks (e.g., census data, licensed drivers, or criminal suspects/persons arrested), use of observational data is not likely to be feasible. Observational data have several limitations. First, they are labor intensive, and therefore expensive, to collect. Cost necessarily limits the number of locations that can be observed in any jurisdiction. These sites are often selected for specific reasons and are not random. Second, just as with blind enforcement mechanisms, the results cannot necessarily be generalized to the driving or violating population of the entire jurisdiction or to types of violations. Third, observational data are constrained by the observers' abilities. Although some black and non-black drivers may be distinguished under the proper conditions (e.g., during the day, with the proper lighting, and more/less traffic), distinguishing among various minority groups (e.g., Hispanics) can be difficult or impossible. This limitation would be of specific concern in the City of Los Angeles since Hispanics are a large minority group.

A variation of the observational study is ride-alongs with police officers. Ride-alongs could be used to create a benchmark by randomly selecting areas and times to observe. This method has the

[244] Per California state law (California Vehicle Code Section 21455.5(e)(2)), traffic light camera data cannot be released.
[245] Smith and Alpert (2002).
[246] Lamberth (1994, 1997); Zingraff, et al. (2000); Lange, et al. (2001).

potential to address all the concerns regarding benchmarks. It can account for the fact that some people (e.g., those who drive more, drive poorly, and drive in locations where stopping behavior by the police is high) are at a greater risk of being stopped than other drivers.[247] Furthermore, it allows data to be collected from real-world activities and from the observations of the officers. However, since this technique requires observer to keep track of officers' actions and behaviors, it is labor intensive, expensive, and reliant on officers acting as they normally would if not being watched. If officers change their behaviors while being watched, then data collected may not provide an accurate reflection of the driving population.

6.5.2.1.1.5 Race of Criminal Suspects

Using the racial composition of criminal suspects or arrestees as a benchmark is founded on the belief that stops should reflect the populations most at risk of committing criminal acts. For example, in the New York Attorney General's report on the stop-and-frisk activities of the NYPD,[248] researchers controlled for the involvement of minorities in crime, as measured by arrest rates, and still found a higher proportion of minorities being stopped relative to non-minorities. In one analysis of traffic stops in Richmond, Virginia, it was found that when stops were aggregated at the level of census tracts, rates of serious crime predicted the rate of stops per 1,000 residents, after controlling for other important factors, including measures of poverty and unemployment and the percentage of blacks in the population.[249]

Using proxies of criminal involvement as a benchmark makes more sense in studies of investigative stops or pedestrian stops, than it does for motor vehicle stops. Previous research has demonstrated that most motor vehicle stops are made for vehicle or traffic-related infractions and not for suspected criminal behavior.[250] Therefore, using data on the racial composition of criminal suspects or arrestees to compare to motor vehicle stops is not analytically sound.[251]

6.5.2.1.1.6 Traffic Accident Data

Traffic safety engineers have developed another approach that can be used to create a benchmark for motor vehicle stops. These investigators have utilized automobile crash data to establish the relative risks of causing a crash or being a crash victim that are associated with driver

[247] Fridell (2004).
[248] Spitzer (1999).
[249] Petrocelli, et al. (2003).
[250] California Highway Patrol (2000); Connecticut Division of Criminal Justice (2000); Greenwald (2001); Missouri Attorney General's Office (2000); San Diego Police Department (2000); San Jose Police Department (1999); Smith and Petrocelli (2001).
[251] Fridell (2004).

characteristics, types of vehicles, and roadway conditions, among other factors. They conclude that not-at-fault drivers in two-car crashes can serve as a proxy for at-fault drivers because crash victims are randomly distributed among drivers. While not-at-fault crash data do not provide information on the racial composition of traffic violators, they appear to be a good proxy of the driving public, and have been used as denominators in the Charlotte-Mecklenburg and Miami-Dade jurisdictional studies.[252]

In many jurisdictions, these data exist electronically or on paper and can be accessed easily and inexpensively. However, in the City of Los Angeles, crash data are collected only for accidents resulting in injuries and certain types of crashes (e.g., crashes involving traffic felonies, crashes of drivers charged with driving under the influence (DUI), hit-and-run crashes, and crashes involving City property). Therefore, these data are limited in scope. Furthermore, this limited benchmark would not necessarily be representative of the entire population at risk of being stopped, but only the proportion that is more likely to be injured in an accident. Because research has shown that minorities are less likely to wear seatbelts and, therefore are more likely to be injured in a traffic accident, they are likely to be overrepresented in traffic accident data.[253]

As a result of the limited traffic accident data in the City of Los Angeles, they are unlikely to serve as a reliable benchmark for motor vehicle stops.

6.5.2.1.1.7 Internal Motor Vehicle Benchmarks

An alternative approach to the static and observational benchmarks is internal benchmarking. Rather than creating benchmarks external to the police department, internal agency comparisons allow for the use of police-citizen contact data without additional or external data. Internal benchmarking involves the comparison of similarly situated officers (i.e., officers on the same shift, in the same area, and/or on the same assignment). This technique can be used for comparing stops, citations, searches, and arrests. These comparisons are often part of larger management programs called "early intervention" or "early warning" (EW) systems.

Internal benchmarking cannot determine whether the overall stop rates of the officers are appropriate. The comparisons can assess only officer-to-officer differences.[254] In other words, internal benchmarking cannot determine whether all or none of the individuals/groups used in the comparison are practicing racially biased policing because both the stop and benchmark data come from the same

[252] Smith, et al. (2004); Alpert, et al. (2004).
[253] Fridell (2004). Fridell also cites other literature (p. 220).
[254] Walker and Alpert (2004).

pool of officer stop data. If an entire police department or shift is engaging in racially biased policing, then internal benchmarking may not uncover biased individuals.

Nonetheless, internal benchmarking is a better option than external benchmarking, given that there are no reliable estimates of the driving or violating populations. At a recent conference on racially biased policing in Las Vegas (July 13-14, 2004) sponsored by the Police Executive Research Forum and the COPS office, national experts on the analysis of racially biased policing data were unanimous in their support for this method of analysis where feasible.

6.5.2.1.2 Recommendations Regarding External Benchmarking of Motor Vehicle Stops

The availability of data and resources must determine the selection of any approach to benchmarking. Clearly, the census data are the least expensive and easiest to access. However, they do not measure the driving population. Although there have been attempts to modify census data, adjustments do not necessarily measure actual driving behavior. The lack of available data for other potential benchmarks in the City of Los Angeles, such as licensed drivers, blind enforcement mechanisms, and traffic crashes, makes them unfeasible as motor vehicle benchmarks. Observational studies could be undertaken, given a sufficient number of observations at representative locations. However, this type of effort would be very labor intensive and expensive, especially in a city as large and diverse as the City of Los Angeles. Furthermore, the collection of a sufficiently large sample to yield statistically meaningful conclusions may also be prohibitively time consuming. Even if such observational studies were undertaken, they would have a limited "shelf life" because traffic patterns and demographics of areas change. Therefore, observational studies would need to be updated on a regular basis if stop data collection and analysis remain ongoing endeavors.

The motor vehicle benchmark that holds the best potential for the future is traffic crash data if information regarding all traffic crashes were to be recorded and maintained. However, as noted in Section 5.2.15, only limited crash data are currently collected in City of Los Angeles. Going forward, data could be collected for all traffic accidents. However, this effort would take a significant amount of time and resources to accumulate the quantity of data that would be needed for reliable use as a benchmark.

Even if a reliable benchmark could be developed for motor vehicle stops, the question as to whether perceived race could have a significant influence on officer behavior remains. Recall from Chapter 4 that officers are unable to perceive the race of a vehicle occupant 63 percent of the time for daytime stops and 65 percent of the time for stops at night at the time suspicion is formed. These results of the Ride-Along Study provide further support for focusing resources in areas other than the

development of a motor vehicle benchmark. This finding is consistent with other research that has addressed the specific question of the feasibility of determining suspect race. Two studies have provided analysis of whether race could be identified by officers (*see* Section 3.2.12). Both concluded that race could not be identified by officers in a large proportion of cases. After ride-alongs with officers, researchers in Sacramento concluded that race could not be identified prior to the stop in most cases. In Denver, officers reported that they could not identify race prior to a stop in 24 percent of pedestrian stops and 92 percent of motor vehicle stops.

Given the problems with many of the available benchmarks, the lack of data for other potential benchmarks, and the fact that LAPD officers are unable to determine suspects' race prior to initiating a stop in a significant number of stops, Analysis Group does not recommend the implementation of an External Benchmark Study for the evaluation of motor vehicle stop activity. Instead, we highly recommend that attention and existing resources focus on analyses of post-stop activities, including searches and arrests, as well as internal benchmarking. These analyses capture a much broader range of police activities than merely the decision to initiate a stop, and they do not require an external benchmark. Thus, they can provide the best potential for assessing the existence of biased policing.

6.5.2.2 External Benchmark Study of Pedestrian Stops

Statistical evaluation of pedestrian stops has received much less attention than that of motor vehicle stops. As noted in Section 2.3.6.1, in 2000, PERF conducted a survey of data collection efforts and found that most agencies that collect data were doing so only for traffic stops.[255] Of the jurisdictions Analysis Group reviewed in Chapter 3 (*see* Section 3.2.7), six of the 13 studies indicated that data were collected on pedestrian stops and only three evaluated pedestrian stops.[256] The focus on motor vehicle stops rather than pedestrian stops may stem from the fact that motor vehicle stops hold the greatest potential for analysis due to their higher frequency.

External benchmarking of pedestrian stops holds much more potential for meaningful results than external benchmarking of motor vehicle stops. First, results from the ride-along survey indicate that officers can identify race in a large proportion of suspicions and stops involving pedestrians. Even at the time suspicion is formed, officers could discern race about 75 percent of the time during the day and about two-thirds of the time at night. These percentages rise to over 90 percent at the time of the

[255] Fridell, et al. (2001).
[256] The six studies that collected pedestrian data were the Los Angeles County Sheriff's Department, Charlotte-Mecklenburg, Columbus, New York, Houston, and Denver. Note that pedestrian data was collected in Columbus only if a stop involved a traffic code violation. The three studies that analyzed pedestrian data were Charlotte-Mecklenburg, New York, and Denver. It appears that pedestrian data were mixed with motor vehicle data in Columbus and Houston.

initiation of the stop. Therefore, it is reasonable to ask whether officers stop minorities at disproportionate rates as compared to non-minorities.

Second, it is easier to find or construct a proper benchmark or baseline for pedestrian stops than motor vehicle stops. The distinction between stops made in response to a violation of traffic laws and investigative stops made in response to reasonable suspicion of criminal activity is an important consideration in the development of a benchmark. According to PERF, in theory, researchers should examine these types of stops separately (*see* Section 2.3.2.4). It is widely recognized that pedestrian stops are less likely to be a response to observed violations and more likely to be investigative in nature.[257] Pedestrian stops are also less likely than motor vehicle stops to be used as pretext stops. Both of these considerations create more potential for developing a reliable external benchmark for pedestrian stops.

6.5.2.2.1 Potential External Pedestrian Stop Benchmarks

As noted in Chapters 2 and 3 (*see* Sections 2.6.6.1, 3.2.7, and 3.2.14), very little research has been done on pedestrian stop benchmarking. Benchmarks discussed or used in the racial profiling literature have included: adjusted and unadjusted census data;[258] data from observational studies;[259] and race of criminal suspects.[260] In order to determine the potential usefulness of these external pedestrian benchmarks in our analysis of pedestrian stop data, we review them below.

6.5.2.2.1.1 Census Data: Non-Adjusted and Adjusted

Analysis Group does not recommend benchmarking pedestrian stops against minority representation in the residential population as represented by either unadjusted or adjusted census data. Studies have shown that the resident population is likely not a good indicator of the pedestrian population, let alone those persons most likely to be stopped. Several studies have verified this assertion by cross-checking census data with information gathered from observational studies. The study conducted by the British Home Office identified the population most at risk of being stopped, based on those frequenting various locations.[261] The data collected by the researchers confirmed that the population of persons who frequented an area was substantially different from the census of the residential population. In most areas, the pedestrian populations included a greater percentage of minorities than indicated by the census. This is consistent with the generally accepted belief that

[257] Alpert, et al. (2004).
[258] Smith, et al. (2004); Spitzer (1999); Sam Houston State University (2003); Thomas and Hansen (2004).
[259] Miller (2000).
[260] Alpert, et al. (2004); Spitzer (1999).
[261] Miller (2000).

measures of resident population (i.e., census data) are a poor indicator of the population at risk of being stopped.

6.5.2.2.1.2 Data from Observational Studies

As with observational studies of motor vehicle occupants, observational studies have limited usefulness in developing a reliable benchmark for pedestrian stops. As noted in Sections 2.6.9.5 and 6.5.2.1.1.4, observational studies are expensive and labor intensive to implement, they provide information at limited and generally non-random sites, they are constrained by the ability of the observers to determine the race of those persons being observed, and they have a limited "shelf life." Even if the pedestrian population could be observed accurately, police stops among the pedestrian population are not likely to be a random draw from among all pedestrians on the street, but rather focused on those pedestrians likely to be engaging in reasonably suspicious behavior. For these same reasons, Analysis Group does not advise benchmarking against minority representation measured in an observational study of pedestrians.

6.5.2.2.1.3 Race of Criminal Suspects

The race of criminal suspects or arrestees has been rejected as a reliable benchmark for most motor vehicle stops. The primary reason is that most motor vehicle stops are not investigative in nature but are made for violations of traffic laws. Thus, the demographic profile of people who violate traffic laws is not necessarily the same as the profile of people who commit crimes. Many analysts have confirmed that a large percentage of motor vehicle stops are made for specific moving or non-moving violations. Even if those stops are a pretext for investigation, a benchmark for motor vehicle stops must capture minority representation among all drivers committing violations, including minor violations. As this is likely to be a large percentage of the driving population, representation in the overall driving population is sometimes considered an appropriate benchmark. However, as previously discussed, the measurement of this representation is extremely problematic.

However, crime data have been suggested as a possible benchmark for investigative stops made in response to reasonable suspicion of criminal activity (*see* Section 2.3.9.6), even including motor vehicle stops made for these reasons. Analysts recognize that pedestrian stops may be more accurately benchmarked than motor vehicle stops using crime data because pedestrian stops are more likely based on reasonable suspicion that a crime has or is about to occur.[262] Pedestrian stops are widely recognized

[262] Alpert, et al. (2004).

as being less likely to be in response to violations and more likely to be investigative in nature.[263] Pedestrian stops also are less likely to be pretext stops because fewer are made for specific violations, either minor or serious. We can, therefore, reject any benchmark that is based on the overall pedestrian population and focus on the factors that are likely to be associated with reasonable suspicion or probable cause. The best pedestrian benchmark will therefore be derived from crime data. The most comprehensive study of pedestrian stops, conducted in New York City, relied on arrest data to form benchmarks for minority stops.

The use of race information from crime data is premised on the theory that officers engaged in race-neutral stop activity and acting in response to signs of criminal behavior, should stop persons that resemble the overall criminal population in the area.

6.5.2.2.1.4 Other Potential Pedestrian Benchmarks

Other benchmarks that Analysis Group has reviewed for motor vehicle benchmarking (*see* Section 6.5.2.1.1), such as licensed drivers, data from blind enforcement mechanisms, and traffic accident data, obviously relate to drivers rather than pedestrians. Therefore, they will not be useful as a benchmark for pedestrian stop data.

6.5.2.2.2 Recommendations Regarding External Benchmarking of Pedestrian Stops

Despite the fact that there have been few analyses of pedestrian stops in the literature and jurisdictional studies reviewed, Analysis Group believes an appropriate external benchmark should and can be developed. First, our Ride-Along Study (*see* Chapter 4) indicated that race is far more likely to be discernible in pedestrian stops than in motor vehicle stops. This is true regardless of whether the stop is made during the day or the night. Officers were able to assess pedestrian race at the time suspicion was formed 73 percent of the time for daytime stops and 66 percent of the time for nighttime stops (*see* Tables 4.4 and 4.5).

Second, a large portion of the pedestrian stops are likely to be more investigative in nature rather than stops made as a result of a specific violation. Even where a specific violation is cited, the stop may be considered investigative. A preliminary review of the rate of searches for pedestrian stops indicates that approximately half result in a search. This rate of searches is substantially higher than the rate for motor vehicle stops. It suggests that pedestrian stops are investigative, rather than only opportunities to cite persons for specific violations.

[263] Alpert, et al. (2004).

To the extent pedestrian stops are investigative, crime data offer promise for the development of a reliable benchmark. Analysis Group recommends the development of an external pedestrian benchmark derived from reported suspect race in reported crime data. This is an approach similar to that adopted in the largest, most comprehensive study of pedestrian stops conducted in New York City.[264]

Pedestrian stop activity in the City of Los Angeles, however, may differ in significant ways from New York. It is generally thought that pedestrian stops for specific violations, such as jaywalking, rather than for investigative reasons, are more common in Los Angeles. To the extent this perception is supported by an analysis of the data, it may indicate that some types of pedestrian stops should be eliminated from any pedestrian benchmark study. For example, a preliminary review of the data indicates lower search rates for pedestrian stops falling under the vehicle code violations (i.e., jaywalking stops).[265] If appropriate, these stops may be removed from the external pedestrian benchmark study.

The first step in any benchmark study is the determination of the numerator – the minority representation among those persons stopped. The racial categories on the FDR can be evaluated to find the proportion of relevant pedestrian stops that are composed of each specific race: white, black, Hispanic, Asian, American Indian, and other.

The second step in the external benchmark analysis is the determination of the benchmark. For pedestrian stop activity, Analysis Group will form an external benchmark by analyzing racial patterns among persons suspected of criminal activity. As described in Chapter 5, data for approximately 689,000 crimes with valid RDs are reported from January 2002 through March 2004. Of these, approximately 37 percent, or about 252,000, crimes report the race of the criminal suspect. These data not only provide information about the race of the suspects, but also provide other details about the crime in question. These data provide an adequate basis for forming a statistical benchmark.

Suspect race from crime data, of course, has limitations. First, reported criminal activity is only a proxy for actual criminal activity. Some types of crimes are more likely to be reported than others. For instance, violent crime is more likely to be reported than prostitution or drug crime. Second, suspect race is more readily identifiable for some types of crimes than others. For example, suspect race may be infrequently identified for burglaries, as these crimes are typically committed without

[264] Spitzer (1999).

[265] In addition to evaluating the search rates for various types of pedestrian stops, we will examine the correlation between crime and those stops. Higher correlations will assist in identifying the types of pedestrian stops properly considered investigative.

witnesses. Third, some types of reported crimes are more likely to result in police-pedestrian stop activity than others. Violent crimes and property crimes have different effects on public safety, thereby creating different law enforcement priorities and actions. And last, minority representation among suspects may vary by crime type. Despite these limitations, suspect race offer the best promise for developing a reliable pedestrian stop benchmark.

Previous research has demonstrated that certain types of criminal activity are highly correlated with one another. Weapons violations and violent crime are highly correlated in some jurisdictions, for example. Although, this multicollinearity will impede attempts to estimate specific effects of particular types of crime on stop activity, it legitimizes the use of more generalized measures of criminal activity. In addition, officers' perceptions of reasonable suspicion may be influenced by knowledge of general crime patterns in an area. While location alone may not form a basis for reasonable suspicion, it may be a factor, among others, that is relevant. Thus, attempting to tie stop activity to particular types of criminal activity may be computationally impossible, but also unnecessary.

Suspect race will be analyzed in a quantitatively objective manner to deal with these statistical and analytical challenges. The crime data are disaggregated by reported offense type. The correlations of each type of criminal activity with others in this disaggregated data will be evaluated with principal components analysis. These principal components can be thought of as different types of crime categories that capture statistically correlated crimes. These data will then be assessed to identify the categories of criminal activity that have the greatest impact on overall stop activity.[266] The suspect race associated with these statistically relevant crime categories will then be used for forming the benchmark in the stop analyses.

While suspect race is available only in 37 percent of reported crimes in the City of Los Angeles (*see* Section 5.2.2), we do not anticipate that this will present any severe limitations in its use. First, if suspect race were used by police officers to stop pedestrians, only the race of "known" suspects would be available to them. Thus, the crimes for which suspect race is unknown are irrelevant. Second, even though suspect race is reported only 37 percent of the time, there is still an extremely large volume of data for which race information is available. Third, the crimes that are most highly correlated with stop activity may be those most likely to contain indications of suspect race.

An alternative source of information relating to the racial distribution of criminals is the arrest data. Analysis Group prefers the use of crime data, as arrests represent the outcome of police activity.

[266] Measuring the relationship between crime and overall stop activity will provide information about the context in which officers make stops regardless of race.

As such, the minority representation among those arrested could itself be biased. An agency that practices racially biased policing in its arrest practices will not have reliable arrest data for benchmarking purposes. As a possible solution to this problem, arrest data for low-officer-discretion crimes may be a more reliable proxy for actual offending rates than arrest data for high discretion crimes because these data are the least likely to be influenced by officer bias. Low-discretion crimes include the following violent offenses: murder, robbery, aggravated assault, and to a lesser extent, rape. In addition to the racial composition of reported criminal suspects, we will investigate these low discretion arrest rates as an alternative benchmark for pedestrian stops.

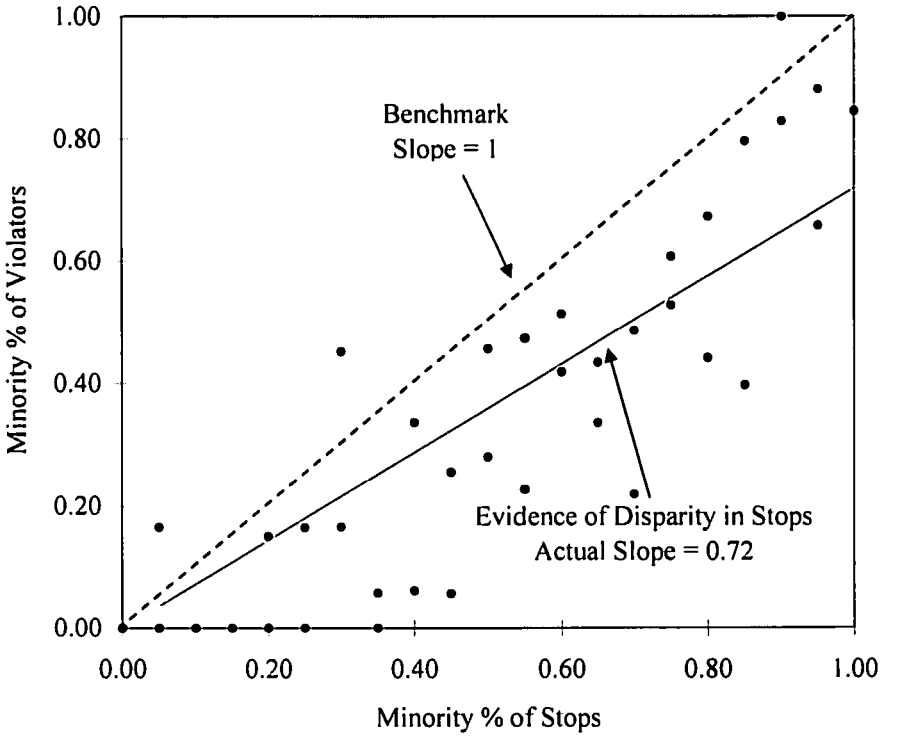
The third step in the external benchmark study is to determine whether the proportion of minorities stopped deviates in a practical and statistically significant way from the proportion of minorities established in the benchmark. If there is no bias, we expect, on average, the proportion of minorities among those persons stopped to match the proportion of minorities among persons likely to be engaging in reasonably suspicious behavior in each enforcement area, as reflected in the benchmark derived from crime data. That is, we expect minorities to experience only a fair share of stops. For example, if 40 percent of the persons reported as criminal suspects in an area were minorities, then, on average, we would expect 40 percent of the pedestrian stops of persons to be of minorities.

As shown in Figure 6.1, this expected relationship is represented by a simple 45-degree line (the dotted line in Figure 6.1). This line, with an intercept of zero and a slope of one, matches pairs of values in which the percentage of minorities stopped in RD exactly matches the percentage of minorities among those suspected of criminal activity in the RD.

In reality, random variation in stops from RD to RD may yield pairs of values that lie off the 45-degree line. That is, in some areas, minorities may make up a somewhat smaller share of stops than their representation in the benchmark, and in other areas they may make up a larger share. For example, in one area where minorities represent 40 percent of suspects, they may represent only 20 percent of the stops. In another area where minorities represent 40 percent of suspects, they may represent 60 percent of the stops.

Figure 6.1

Evidence of a Race Disparity in Stops



Quantitative evidence of biased policing is revealed when these actual observations tend to lie significantly below the 45-degree line. In other words, a fitted regression line would have a flatter slope than the 45-degree benchmark. For example, a slope of 0.72 would indicate that increases in minority representation among suspects are matched more than one-for-one with increases in stops. Regression analysis of these shares can inform us whether deviations from the expected proportionate pairing of stops to minority representation among suspects show a sufficiently strong or statistically significant pattern to allow inference that there is quantitative evidence of race disparities in stop outcomes.

The use of regression analysis will enable Analysis Group to investigate other factors that may be related to police stop decisions. Specifically, Analysis Group recommends the consideration of the factors that comprise direct or indirect measures of crime or disorder such as:

- calls for service;
- gang crimes;

- deployment;
- shootings at officers; and
- vacant/abandoned buildings.

In addition to factors capturing direct or indirect measures of crime or disorder in the City, Analysis Group will also consider data that measure the overall level of economic activity in the various geographic areas. For example, certain parts of the City with higher levels of business activity may expect to have higher levels of stop activity. This information will be derived from two sources: sales volume data and business tax registration certificates data. These data are reported by zip code. Therefore, they will have to be mapped to the RDs as noted in Section 5.3.2.

Other demographic data not related to race may also influence stop activity. For example, since population density is likely to influence stop activity, we will measure the influence of the number of residents in each RD.

The above data related to crime, disorder, economic activity, and population density are not necessarily considered to be legitimate reasons for stopping minorities disproportionately in a given RD. However, potential relationships between these data and stop patterns will be investigated on the theory that an understanding of such relationships may be helpful in sharpening our understanding of any racial disparities which may be identified.

Certain other factors may be included as potential legitimate reasons for stopping minorities disproportionately in a given RD. To the extent that gender, age, and other demographic factors are relevant for explaining minority representation among pedestrian stops, we will include them in our analysis.

The use of regression analysis in a benchmark study has a unique advantage over more simplistic benchmarking comparisons frequently used in other jurisdictions. Not only does it allow the consideration of a wider range of quantitative factors, it can accommodate further consideration of qualitative elements. As the discussion above indicates, a finding of a fitted regression line with a slope that is statistically significantly less than one will provide quantitative evidence of an average difference between the expected proportion of minorities stopped, given their representation among criminal suspects, and the actual proportion. This average overall difference can be used to draw general quantitative inferences about possible bias in pedestrian stops.

The analysis also can be used to identify particular outliers. For instance, when this analysis is conducted across RDs, then the results for any particular RD can be evaluated relative to what would be expected for that RD. RDs with outcomes sufficiently far from what would be expected can thus be

identified. This creates an opportunity to consider the influence of more qualitative elements that cannot be captured in the statistical model. For example, idiosyncratic RDs, such as those with unusual pedestrian traffic related to tourism or a central business district may appear as outliers, yet be more clearly understood with reference to qualitative information.

6.5.3 Post-Stop Activity Study

As noted in Section 2.3.6.2, analysts have recognized that for both pedestrian and motor vehicle stops, there is the potential for racially biased policing at two points in time – when the stop is made and after the stop has been made. Analysis of stops typically refers to information specific to the decision by the officer to make a stop. Stop data analysis would include the officer's determination of the race of a suspect when the decision to make a stop is made, the violation, where the violation occurred, the time of day, and the day of the week. Post-stop analysis refers to evaluation of information specific to the outcome of events after the stop. Post-stop data would include the officer's determination of the race of a suspect after a stop is made and the outcome of a stop (e.g., searches, citations, and arrests). Although the focus of prior research and studies of other jurisdictions has been the analysis of stops, a number of jurisdictional studies have recognized the value of post-stop analyses.[267] Such studies provide a unique perspective on the potential for racially biased policing after a stop is made.

The second type of study that Analysis Group recommends, therefore, is a study of post-stop activities. This study will address the question: Are minorities subjected to disproportionate sanctions or other burdens following a stop after controlling for available non-racial factors that may influence police decision-making? Post-stop analyses are particularly useful in understanding whether enforcement is effective and respectful and compliant with the Department's nondiscrimination policy. Such analyses may assist in determining whether investigatory or suspicion-based stops were effective. Therefore, we propose the development of a methodology for analyzing racial differences in selected post-stop actions.

The statistical techniques that Analysis Group will use in the analysis of post-stop activity are appropriate for the study of categorical data. Two techniques that we anticipate using are logistic

[267] *See* Greenwald (2004); California Highway Patrol (2000); Cordner, et al. (2002); Smith, et al. (2004); Ohio State University (2003); Schlosberg (2002); Spitzer (1999); Alpert Group (forthcoming for Miami-Dade Police Department), Sam Houston State University (2003); Thomas and Hansen (2004); Smith and Petrocelli (2001). However, the type and depth of post-stop analyses in these studies varied widely.

regression and Chi-square analysis.[268] These are techniques that are designed to assess whether there are racial differences in the occurrence of a particular outcome. Logistic regression is a multivariate technique that allows an analyst to evaluate the impact of race on discrete, bivariate outcomes (i.e., two outcomes), such as a yes/no response to a question (e.g., "Did the driver exit vehicle?"), after controlling for other likely influences on the outcome as well. Chi-square analyses are used to examine the relationship between two variables, such as race and the decision to search, and may be used to evaluate whether the distribution of various outcomes differ in a statistically meaningful way by race.[269]

For all post-stop analyses, stops of pedestrians and motor vehicles will be analyzed separately. As noted in our review of the literature (*see* Section 2.3.6.1), motor vehicle stops are more likely to be pretextual stops. Therefore, our expectations regarding post-stop outcomes vary by type of stop. Likewise, stops resulting from calls for service will be analyzed independently from officer-initiated stops. Given the lower level of discretion associated with calls for service stops, these stops ideally should be treated separately from those initiated by officers themselves.

Given that some post-stop outcomes are relatively rare events (e.g., searches), it is possible that splitting the data as described above would yield too few cases in each category to produce a meaningful statistical analysis. If Analysis Group determines this to be the case after examining the distribution of the data, then we will consider alternative techniques to increase the size of the sample. One solution may be to combine stop categories (e.g., pedestrian and motor vehicle stops) but control for the type of stop by including dummy variables in the logistic regression models that identify pedestrian and motor vehicle stops or officer-initiated versus calls-for-service stops. Again, the preferred technique will be to analyze different categories of stops independently because those analyses will yield more detailed information on each type of stop. However, sample sizes will necessarily drive the analytic choices that are available as the analysis unfolds.

Once the pedestrian/motor vehicle and calls-for-service/officer-initiated split is accomplished, if possible, stops made by the following categories of officers will be analyzed independently:[270]

- patrol officers;

[268] An example of a logistic regression analysis is provided in Section 4.4.4 in the evaluation of the ride-along study results. There we evaluated whether various explanatory factors accounted for the officers' perception of the race of persons stopped.

[269] Although we considered the appropriateness of nested logistic regression, the data collection protocol makes its application inappropriate. Nested logistics regression is a technique that allows an analyst to evaluate the probability of a discrete outcome when the choice made may be contingent on the result of an earlier choice. As Chapter 7 describes, the current data collection protocol does not allow an analyst to determine from the FDR the dynamics of what occurred following a stop. Thus, nested logistic approaches cannot be implemented.

[270] Detective will be excluded unless there are enough stops that allow for a separate analysis.

- gang officers; and
- traffic officers.

In the case of gang officers, their stops are likely to reflect not only their unique responsibilities and enforcement strategies but the ethnic and racial composition of the City's gangs as well. Traffic officers, too, have substantially different responsibilities from patrol officers, and therefore, it is appropriate to analyze their stops separately. Generally speaking, stops made by officers assigned to gang units should be analyzed separately when possible from those made by regular patrol officers.[271] Finally, as the backbone of any police department and the group that has more contact with the public than any other, patrol officers represent the remaining and perhaps most important category of officers to consider in post-stop analyses. As the discussion on combining categories of stops indicates, however, sample sizes for some outcomes may dictate that the data be aggregated and officer assignment be controlled in a series of combined models.

In dividing the data according to the strategy outlined above, we hope to develop the clearest picture possible of the stops made by the various LAPD entities that will comprise the major analytic categories. In the same vein, we hope to examine post-stop outcomes for each racial category identified on the FDR so that important differences among minority groups are not masked. However, and as noted above, whenever data are split into increasingly finite categories, the risk of having an insufficient number of cases to produce a meaningful analysis increases. We expect that some categories of analysis may not produce meaningful results – e.g., pedestrian stops by traffic officers. Without examining the data further and beginning the analytical process, we cannot determine when these obstacles to an effective analysis may occur. If it appears that a particular type of analysis will have an insufficient number of cases to produce reliable results, Analysis Group will consult with the City to determine whether some higher level of aggregation may be advisable.

6.5.3.1 Search Analyses

Most earlier analyses of search activities have relied on one of two approaches: an examination of overall search disparities by race or analyses of hit rates among racial groups (*see* Section 2.3.8.2). With a search disparity analysis, the number of persons searched in each racial category is divided by the total number of persons stopped from each category. This simple calculation leads to the percentage of persons searched among those stopped and allows for comparisons across racial groups. The analysis can be done for all combined searches conducted or for subsets of searches (e.g., searches

[271] Spitzer (1999) and Smith, et al. (2003).

incident to arrest, pat-downs, vehicle searches, or impound searches). As a bivariate calculation, however, this type of analysis does not take into account legitimate, non-racial factors that may cause the search rates for one group to exceed those of another.

An alternative method for evaluating post-stop activity is a hit rate analysis or outcome test. Hit rate analyses have been used to analyze whether outcomes of discretionary searches (i.e., discovery of contraband) are systematically different for minorities and non-minorities. In a typical hit rate test, researchers measure the hit rate as the number of successful discretionary searches divided by the total number of searches for each racial group. Lower hit rates for searches of minorities are generally interpreted as a possible indicator of racially biased policing. The logic is that if the hit rate is lower for minorities, a lower standard for initiating the search may have been applied by the officer, thus implying racial bias by the officer.

Although instructive, particularly in conjunction with multivariate analyses, hit rate analyses have limitations. As with all statistical analyses, the interpretation of a lower success rate for searches is, at best, indirect evidence of bias. If hit rates are lower for minorities than for whites, this finding may indicate that the police are searching minorities under a lower standard of proof than for whites and are therefore "wrong" more often. However, as simple, bivariate analyses, hit rates do not account for situational or contextual influences on search decisions that may vary by race. As one example, if minorities exhibit characteristics that lead police to be suspicious more often than whites, police may act upon those suspicions, search minorities more often, and end up with fewer "hits" or positive contraband seizures among minorities. Neighborhood differences also may vary by race, which may lead to differing search decisions by police and lower hit rates for some racial groups. Although a useful indicator of possible bias, hit rates are perhaps most instructive when conducted in conjunction with a multivariate analysis of searches as well.

The nature of the LAPD data imposes one additional limitation on our ability to conduct a hit rate analysis. When more than one type of search was conducted and contraband was found, we will not be able to distinguish which search yielded the contraband because LAPD FDRs do not identify which search yielded the contraband. Because only some searches qualify as probability searches, we must be able to link any contraband found to those particular kinds of searches. When both probability and non-probability-based searches (e.g., search incident to arrest) were conducted during the same stop, we cannot make the necessary linkages and therefore cannot analyze those data for hit rate purposes. In the end, an insufficient number of probability searches conducted independently of non-probability searches would preclude us from conducting a hit rate analysis. As a result of the

aforementioned limitations, a hit rate analysis will not be performed by Analysis Group using LAPD post-stop data.

Logistic regression provides an alternative tool for examining searches. The purpose for conducting multivariate assessments of searches is not to determine whether contraband was found but to investigate racial disparities in the decision to search in the first place. The question addressed by these analyses is whether LAPD officers are more likely to search minorities than whites after accounting for non-racial factors that may influence the search decision. Thus, these models enable us to control for explanatory factors that may legitimately influence officers' decisions to search. The individual and contextual factors that have been discussed in our proposed stop analyses are important to consider in a multivariate analysis of searches. Thus, Analysis Group proposes conducting regression analyses on search outcomes in order to determine whether, holding other relevant variables constant, race influences the likelihood of officers engaging in discretionary searches.

The FDR generates information on a variety of search outcomes. The analysis of these outcomes will rely heavily on the data gathered from the FDRs. We make our recommendation after having determined that the post-stop search data are of sufficiently high quality to warrant a review. The form that has been in use since July 1, 2003 records a number of possible search activities, once a stop has occurred. Some of these actions are contingent upon earlier actions having been taken by the officers. Given a stop, the possible post-stop search actions, along with associated contingencies, are:

- Was a pat-down, search, or frisk conducted?
- Was the detainee asked to submit to a warrantless search?
    - If yes, did the detainee grant the request?
- Was a search conducted?
    - If yes, what was the authority?
        - consent
        - odor of contraband
        - incident to arrest
        - parole or probation
        - impound authority
        - visible contraband
        - incident to pat-down or frisk
        - other
    - If yes to search, what was searched?

    - person
    - container
    - vehicle
    - other
- If yes to search, was anything discovered or seized?
    - If yes to discovery or seizure, what was found?
        - alcohol
        - drugs
        - money
        - other contraband
        - other evidence of crime
        - other property
        - weapons
        - vehicle

Although the search data captured on the FDR allow for many different combinations of analyses, we believe that three in particular will yield useful information on the existence of possible disparities in search outcomes. Based on our review of the literature and discussions with City of Los Angeles and LAPD representatives, we intend to conduct three discrete search-related regression analyses: (1) an analysis of pat-down/frisks, (2) an analysis of high discretion searches, and (3) an analysis of consent search requests. Pat-down/frisks are limited searches of a suspect's outer clothing conducted when officers have reasonable suspicion to believe that a person may be armed and dangerous (*Terry v. Ohio*, 1968). They are highly discretionary and are appropriate to assess for racial differences. They represent the first search analysis that we propose.

Next, Analysis Group proposes aggregating searches into high and low discretion categories and conducting a regression analysis of the influence of race on high discretion searches. High discretion searches are those where officers have the greatest degree of freedom in choosing whether to search. Again, after discussions with City and LAPD representatives, we intend to combine odor of contraband, parole/probation, and incident to pat-down/frisk searches into the high discretion category for analysis. The incident to pat-down/frisk category indicates that officers conducted a pat-down/frisk, felt an object that appeared to be a weapon, and reached inside a suspect's clothing to retrieve the item. In order to take a conservative approach with our analysis, we have chosen to include this type of search in the high discretion category, recognizing that officers will typically err on the side

of caution and will reach inside a suspect's clothing to investigate any object that could be used against them as a weapon. Low discretion searches, which will not be subject to analysis, include searches incident to arrest, impound searches, and searches based on visible contraband. In these cases, officers have little or no choice but to conduct a search and therefore any racial differences that may exist in these searches are not likely to be the result of bias.

Finally, we propose a regression analysis of how race affects the decision by officers to request consent to search. The FDR captures information on whether officers asked citizens to submit to consensual searches. The decision to seek consent is highly discretionary and is appropriate to examine for racial differences. In fact, the decision to seek consent provides for a more straightforward analysis than whether a consent search was actually conducted, which is also captured on the FDR. Consent searches indicate that officers conducted a search after they sought and gained permission to search from citizens. However, as *outcomes*, they measure citizen acquiescence to a police request, and acquiescence may itself vary by race. Therefore, the better approach is to explore racial differences in the initial decision to seek consent rather than using the consent search data themselves as the variable of interest.

Because the FDR records the race of the person(s) stopped, each of the three search-related activities (pat-down/frisks, high discretion searches, consent search requests) discussed above may be analyzed statistically for evidence of disparities. The search analyses that we recommend have dichotomous (yes/no) outcomes and are appropriate for logistic regression. In conducting these analyses, Analysis Group will control for the influence of a variety of individual, contextual, and situational factors as discussed below (*see* Section 6.5.3.3). As noted earlier, if an analysis yields too few cases to produce meaningful results, we will consult with the City and recommend a course of action to address the issue. This may involve a recommendation to aggregate the data or to conduct additional analyses.

6.5.3.2 Enforcement and Other Post-Stop Analyses

In addition to searches, the FDR also captures information on other stop outcomes and contingencies. Those outcomes are as follows:

- Did the officer ask the driver to exit the vehicle?
- What action was taken?
  - field interview completed
  - warning

- none
- arrest
- citation
- release from custody

By linking the FDR data to other data sources, Analysis Group can develop a more complete account of what occurred after a stop. For stops that resulted in a citation, for example, we can link the FDR data to a City-maintained citations database and determine what particular offense(s) a driver was cited for. This will allow us to determine not only whether minorities were more likely than whites to receive citations (after controlling for other factors), but also whether differences exist in the types of citations issued to minority and white drivers. Likewise, by linking FDR and arrest data, we can analyze whether minorities were more or less likely than whites to be arrested after holding constant important variables such as type of offense.

Based on discussions with City and LAPD officials, Analysis Group proposes to conduct regression analyses on the following FDR outcomes: arrests, citations, no action taken, and whether the driver was asked to exit the vehicle. We believe that these analyses will be the most fruitful in uncovering possible racial disparities and assessing the post-stop practices of the LAPD. As with searches, we intend to conduct separate analyses for each of the four outcomes listed above. Similar to the high discretion search analysis as well, we anticipate removing non-discretionary arrests from the pool of arrests subjected to analysis. For example, in cases where persons have warrants on file for their arrest, officers are typically required by law and policy to take them into custody. Removing warrant-based arrests from the analysis will allow us to examine the influence of race only on truly discretionary arrest outcomes. Again erring on the side of caution, only arrests made pursuant to a warrant will be considered non-discretionary and removed from the arrest pool. Recognizing that other arrests also may involve low discretion (e.g., violent felonies), we will control for offense type by creating dummy variables for violent and other crimes as discussed below. Moreover, we will control for offense type and other relevant variables (*see* Section 6.5.3.3) in each of the four proposed outcome analyses. These outcome analyses will be similar to that for searches and will employ logistic regression techniques to explore race as a possible variable of influence on the probability of the outcomes occurring.

6.5.3.3 Independent and Control Variables

As with other regression techniques, these logistic regression approaches enable an analyst to control for other legitimate influences on the outcome to isolate only unexplained racial disparities. As with our Pedestrian Benchmark Study, the influence of other factors will be captured in the empirical models. The factors that Analysis Group will consider in the analyses are broadly classified as:

- suspect characteristics;
- officer characteristics;
- encounter characteristics; and
- geographic characteristics.

To the extent these legitimate law enforcement imperatives explain differences in post-stop activity, these effects will be measured and controlled in the analytical models. After having reviewed the data that are available, and having reviewed the quality and completeness of the data, Analysis Group recommends the inclusion of a number of specific control factors.

First, we will account for the characteristics of the specific encounter. These factors are reported on the FDR – time of day, day of week, and reason for the stop. The time of day and day of the week may indicate differences in the likelihood of a stop, regardless of race. The FDR also records the reason for the stop. The likelihood of specific post-stop outcomes also is expected to be related to the initial reason for the stop. The reasons for the stop identified on the old form are:

- vehicle code moving violation/pedestrian violation;
- municipal code violation;
- suspect flight;
- consensual;
- call for service;
- equipment/registration violation;
- department briefing;
- penal code violation;
- health and safety code violation; and
- other.

When changes were made to the data collection instrument in July 2003, the reasons for the stop were reclassified to distinguish vehicle code moving violations from pedestrian violations. Because the FDR also records whether the stop was of a driver or pedestrian, we will disaggregate the

vehicle code moving violations from pedestrian violations on the old FDRs with reference to the type of stop.

The inclusion of situational characteristics is important in assessing possible racial differences in post-stop outcomes. The nature and severity of the offense, or whether the stop was made based on a department briefing, are important control variables to consider because of their relation to officer discretion. For example, officers have much less discretion in arresting a suspect when a violent crime or DUI is suspected. Thus, at a minimum, we anticipate creating dummy variables for violent crimes and DUIs. We will also investigate the need for creating other offense-related variables, such as variables for property or drug offenses. Similarly, for the citations analysis, it may be important to include variables for some lower discretion traffic-related charges – driving with a suspended license or reckless driving, for example. We will determine how best to classify offenses after running some descriptive statistics on offense type by race. Although we cannot yet specify all of the offense-related variables we will use in each model, we recognize that controlling for these and other contextual factors will help isolate race as a potential explanatory factor for post-stop decisions and will help rule out the possibility that variables other than race are responsible for any observed differences between whites and minorities.

Our second set of control factors relate to the geographic area in which the stop occurred. The FDRs report the RD in which the stop occurred. Therefore, the attributes of the area where the stop occurred can be readily identified. These attributes are either direct or indirect measures of crime, disorder, or socioeconomic disadvantage in the City that may influence the decision of the officer to initiate particular post-stop actions. The factors that Analysis Group will analyze are:

- crime;
- calls for service;
- gang crimes and stops by gang officers;
- officer deployment;
- shootings at officers; and
- vacant/abandoned buildings.

Crime data are available for the City at the RD level. In evaluating post-stop outcomes, we will control for crime in the RDs where stops occurred. At a minimum, we anticipate controlling for violent and property crime. We will also investigate the possibility of controlling for other types of crime such as drug-related offenses. For the purposes of specifying area-level crime rates or counts, we will use the Uniform Crime Report (UCR) definitions of Part I offenses in identifying violent and property

crime. Violent crime under the UCR definitions includes the following offenses: murder and non-negligent manslaughter, rape, robbery, and aggravated assault. Part I property crime under the UCR includes burglary, larceny-theft, and motor vehicle theft. Because reported crime categories across geographic areas of a city tend to be collinear (vary together), we may have to develop a composite measure(s) of crime that avoids the statistical problems caused by including collinear variables in the same regression models.

In addition to including standard UCR crime categories as control variables in our analysis, we also believe that it is important to account for the possible effects of gang activity and gang-related crime on the post-stop behavior of police officers. Although the City maintains a database of gang-related crimes that is available for analysis, only recently have uniform standards been instituted for the classification and capture of gang-related offenses. As a result, the current gang crimes database is probably incomplete, which may limit its utility in the overall analysis. As an additional proxy measure for gang activity, we also plan to use stops by gang unit officers as an estimate for gang activity across the City. Neither measure of gang activity or gang-related crime is ideal, but they are the best that are currently available and we will examine their usefulness and predictive power in our regression models.

Other geographic variables of interest for which data are available include officer deployment patterns, calls for service, shootings at officers, and abandoned buildings. The density of police deployment in a given area may impact post-stop outcomes, as may demand for police services (calls for service). Data on shootings at officers may provide an indication of how threatened officers feel and thus may affect their activities on stops in certain locations. Information on abandoned buildings serves as a proxy indicator for the level of social disorder and physical decay in RDs, which in turn, may influence police behavior. All of these variables will be included as controls in the regression models where appropriate.

The third set of control factors that we will use in our analysis are variables relating to officer characteristics, such as age, race, gender, and length of service. These data may be matched to the stop, as the identification of the officer is provided on the FDR. We will also evaluate whether commendations, complaints, or uses of force by officers have explanatory power in the likelihood of specific post-stop actions. The idea is to control for officer characteristics and their influence on police decision-making, and to determine whether officer characteristics help explain post-stop outcomes. It may be useful for the City and the LAPD to know whether certain officer characteristics (complaints, race, use of force) are associated with an increased likelihood of arrest occurring or a citation being

issued. There have been only a limited number of multivariate analyses that accounted for officer demographics. Although researchers in Richmond, Virginia found that officer race did not predict disparate treatment of minorities, one study found that officer characteristics were significant predictors in some models.[272]

After having accounted for the contextual factors that may influence post-stop decision-making, Analysis Group will evaluate whether suspect characteristics – age, sex, and especially race – influence post-stop actions. The logistic regression models provide estimates of the increase in the odds of particular post-stop actions occurring, together with measures of the statistical significance of those racial disparities. As a result, the multivariate analyses will help determine the nature and extent of the influence that driver and pedestrian race has on post-stop decision-making after holding other important variables constant. Raw disparities that may be identified through simple descriptive analyses may no longer hold after the inclusion of other relevant factors in a multivariate model.

6.5.3.4 Limitations of Multivariate Analysis

The post-stop outcome models will help explain whether and to what degree race plays a role in police decision-making. It is unlikely, however, that the models will explain all of the variance in a particular outcome. For example, if Arrest/No Arrest are the possible outcomes in a logistic regression model, the inclusion of driver race and relevant control variables available from City and LAPD databases in the model may explain only a small percentage of the variance in the outcomes. Although, hypothetically, the model may show that black motorists are more likely than whites to be arrested after holding other influences constant, the model may still leave most of the variance in the arrest outcome unexplained. This means that additional, unaccounted for variables are exerting an unmeasured influence on the Arrest variable. As a practical result, one cannot conclude that racial bias explains the arrest disparity among blacks because other legitimate, unmeasured reasons for the disparity may exist.

In a perfect world, and if all relevant variables were available for inclusion in a multivariate model, no amount of variance in the outcome would be left unexplained. In the racial profiling context, this means that we could isolate racial bias by police as the only source of an observed disparity. Since it is highly unlikely that our analyses will produce a perfectly specified model, a single model cannot be used, by itself, to prove or disprove the existence of "racial profiling." Instead, the models may or may not provide circumstantial evidence of bias, depending upon the strength of the race effects found and whether patterns exist in the racial disparities, if any, that are identified.

[272] Smith and Petrocelli (2001) and Schafer, et al. (2004), respectively.

6.5.4 Internal Benchmark Study

The final study that Analysis Group recommends is an Internal Benchmark Study (i.e., officer-to-officer comparisons). Such an analysis is not typical of either the academic research that we have reviewed or other jurisdictional analyses. Of the jurisdictions reviewed (*see* Section 3.2.13.1.3), one (Sacramento) prepared an analysis of stops relative to such an internal benchmark. Nonetheless, courts have held that a defendant can prove the discriminatory effect prong of an equal protection claim through a comparison of the arresting deputy's stop percentages to those of the highway patrol overall. The defendant in *Mesa-Roche* solved the benchmarking problem by utilizing what was, in essence, an internal benchmark in comparing the arresting deputy's stops to those who were similarly situated – Kansas Highway Patrol troopers who worked a nearby stretch of interstate highway.

Internal benchmarking is a viable alternative approach to the static and observational benchmarks otherwise recommended for external pedestrian and motor vehicle benchmarks (*see* Section 2.3.8.1.3). Rather than creating benchmarks external to the police department, internal agency comparisons allow for the use of police-citizen contact data without additional or external data. Internal benchmarking involves the comparison of similarly situated officers (i.e., officers making stops during the same time of day and in the same location). This technique can be used for comparing stops, citations, searches, and arrests. These comparisons are often part of larger management programs, called "early intervention" or "early warning" (EW) systems.

Internal benchmarking cannot be used to determine whether the overall stop rates of the officers are appropriate. The comparisons can assess only officer-to-officer differences. In other words, internal benchmarking cannot determine if either all or none of the individuals/groups used in the comparison are practicing racially biased policing because both the stop and benchmark data come from the same pool of officer stop data. If an entire police department or shift is engaging in racially biased policing, then internal benchmarking may not uncover biased individuals.

Nonetheless, internal benchmarking is a better option than external benchmarking, particularly for motor vehicle stops where estimates of the driving or violating populations are difficult or impossible to ascertain. Internal benchmarks provide a reasonable and cost effective alternative when there are no reliable estimates of the driving or violating populations. Although more effective external benchmarks may be developed for pedestrian stops, an internal benchmark is still informative. At a recent policing conference in Las Vegas (July 13-14, 2004) sponsored by PERF and the Office of Community Oriented Policing Services (COPS), a component of the DOJ, national experts on the

analysis of racially biased policing data were unanimous in their support for this method of analysis where feasible.

The purposes of the internal benchmark study are two-fold:

- Identify individual deviations in the racial composition of each officer's stops relative to stops made by all other officers in the same RDs during the same time periods.
- Provide summary measures of the extent of the variance in stops across groups of officers making stops in the same RDs during the same shifts.

The results will provide tools for assessing the stop behavior of individual officers and for identifying outliers. The identification of outlier officers in this manner can be used as part of a larger early warning system that ensures review of officers and for assessing the consistency with which training on stop behavior is implemented in the field.

The internal benchmark will be developed relative to other officers patrolling the same geographic areas, at the same time of day and with the same general assignment. As in the post-stop analyses, Analysis Group anticipates analyzing pedestrian and motor vehicle stops separately, and filtering out stops resulting from calls for service. Within those groupings, gang, traffic, and uniformed patrol stops will be analyzed independently from each other.[273] The problem of identifying a sufficient number of stops by each officer to provide for a meaningful analysis is particularly acute with internal benchmarking. Consequently, we anticipate having to compare officers to others similarly situated throughout the entire period from July 2003 through June 2004. Even under this approach, some officers simply may not have recorded enough stops to allow for an individual-level analysis. After examining the data more thoroughly, we will evaluate whether peer groups may be defined for more narrow time periods.

The basic unit of analysis for forming peer group comparisons will be the RD. For any RD in which an officer made stops, the internal benchmark will be the percentage of minority representation among all stops made in the RD. Thus, the percentage of minorities stopped by each officer in a given RD will be compared to the percentage of minorities stopped by every other officer in that RD. We will attempt to develop an RD-specific benchmark for each racial group identified on the FDR. However, aggregation of stops into minority/non-minority may be necessary to obtain numbers large enough to analyze. If this becomes necessary, Analysis Group will consult with the City on how the various racial and ethnic groups should best be collapsed. This benchmark will be further refined to

[273] *See* footnote 270.

differentiate the effects of the time of the stop on the minority representation among stops. As such, we anticipate developing both a daytime and a nighttime benchmark for each RD.

After calculating the internal benchmark for each RD and comparing each officer's stops to it, we will then assess which officers demonstrate patterns of stop activity that deviate from the behavior of their peer groups. Some officers will have the same minority representation in their set of stops as the RD benchmarks against which they are compared. Some will have higher minority representation and others less. We will identify specific outliers (i.e., those officers with significant differences in minority representation among their stops) using a standard difference of proportions test (e.g., t-test). This test will allow us to determine whether an officer's proportion of minorities stopped exceeded that of officers in the same location and at the same general time of day by an amount greater than would be expected.

We will also evaluate whether stops made by officers within each RD should be aggregated to increase sample sizes and produce a more robust analysis. This technique would involve aggregating all stops by an officer regardless of the RD where the stops were made and comparing them against stops made by all other officers in the same RDs. Under this approach, the internal benchmark for an officer would be his or her expected racial distribution of stops, which would be derived from (1) the racial distribution of all stops made by all officers in the same RDs where the officer made stops, and (2) the actual proportion of stops made by the officer in each RD. The sample figures below serve to illustrate this technique on a simplified model using only two RDs and two racial groups.

Table 6.1 shows a hypothetical distribution of the stops made by all patrol officers in two RDs. In RD 1, black motorists comprised 80 percent of the stops, while white motorists comprised the remaining 20 percent of stops. In RD 2, the percentages were reversed: whites made up 80 percent of the stops and blacks 20 percent of stops. When stops from the two districts are combined, the overall percentage of blacks stopped is 56 percent with whites making up the remaining 44 percent of stops.

Table 6.1 Stops by All Officers

	RD 1		RD 2		Total	
Race	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Blacks	480	80%	80	20%	560	56%
Whites	120	20%	320	80%	440	44%
Total	600	100%	400	100%	1000	100%

As depicted in Table 6.2, assume that Officer Z made stops only in these two RDs and that his total number of stops was 100.

Table 6.2 Actual Distribution of Stops by Officer Z

	RD 1		RD 2		Total	
Race	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Blacks	64	80%	10	50%	74	74%
Whites	16	20%	10	50%	26	26%
Total	80	100%	20	100%	100	100%

Using the percentage of black stops from all other officers as a benchmark, the expected distribution of Officer Z's stops is shown in Table 6.3.

Table 6.3 Expected Distribution of Stops by Officer Z

	RD 1		RD 2		Total	
Race	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Blacks	64	80%	4	20%	68	68%
Whites	16	20%	16	80%	32	32%
Total	80	100%	20	100%	100	100%

Note that blacks comprise a greater proportion of Officer Z's total expected stops (68 percent – *see* Table 6.3) than reflected in the total actual stops for all officers (56 percent – *see* Table 6.1). This is because Officer Z made a greater proportion of his stops in RD 1 (*see* Table 6.2) – a heavily black area – than did other officers (*see* Table 6.1). In fact, Officer Z made 80 percent of his stops (80 of 100 stops) in the substantially black area whereas other officers made only 60 percent of their stops (600 of 1,000 stops) in that location. Thus, one would expect blacks to represent a greater proportion of Officer Z's stops than among the total stops made in the two RDs. However, the expected distribution of Officer Z's stops (Table 6.3) shows that *within* RDs, his stops should reflect approximately the same black/white proportions as the stops made by other officers.

Now consider Table 6.2, which depicts Officer Z's actual distribution of stops. Note that in RD 1, his stops are consistent with the benchmark – 80 percent black and 20 percent white. But in RD 2, a mostly white area, his stops are substantially more likely to involve a black motorist than his expected distribution (50 percent versus 20 percent). Overall, this overrepresentation of black stops in RD 2 places his total proportion of blacks stopped at 74 percent, which is approximately 9 percent higher than expected (68 percent). The difference between the actual proportion of blacks stopped by Officer Z and the proportion that he would be expected to stop given his higher number of stops in the mostly black area of RD 2 can be tested for statistical significance. If that difference is significant (unlikely to be the result of chance), then Officer Z would be identified by the analysis as an "outlier." In other

words, his proportional stops of black drivers are higher than expected given the stops made by other officers in the same RDs.

The type of analysis illustrated above could be conducted for each officer and possibly for each racial group represented on the FDR, depending on the number of stops available for analysis. The technique is useful if the number of stops made by each officer in each RD is insufficient to provide for a meaningful analysis at the individual RD level. Again, Analysis Group will investigate the necessity or utility of this type of analysis as we begin working with the data.

Moreover, it is important to note that simply because an officer may be identified as an outlier does not necessarily mean that the officer is "racially profiling." Legitimate reasons may exist for why an officer's stop patterns differ from those of other officers. For example, an officer may have been assigned to a special detail in an area with a substantial minority population or the officer may have taken it upon himself to concentrate on a particular type of offense that is concentrated in a minority neighborhood. Internal benchmarking and the identification of outlier officers represents only a first step in ascertaining whether racially biased policing is occurring. Traditional supervision or even early identification systems are a logical "next step" in determining whether an individual officer's stop patterns are appropriate.

Although not currently possible, if the LAPD is able to track individual officers across shifts and assignments in the future, then the measurement of minority representation of stops by individual officers may also be aggregated up to higher levels of command such as a watch or even an area.

Note that in aggregating the average deviation from an internal benchmark to a higher command level, the analysis would not re-evaluate the internal benchmark for any individual officer. These internal benchmarks are always formed at the RD level. This ensures that officers' stop activity is compared only to those peers facing the same suspect, encounter, and geographical attributes. These aggregated internal benchmark comparisons could be used to compare the proportion of minority stops among watches within an area and would allow a division commander to identify a particular watch that may be an outlier compared to others.

Although Analysis Group has discussed the Internal Benchmark Study with a focus on stop activity alone, the approach may generalize to other outcomes of the stops (i.e., searches, arrests, citations, and warnings). The only limitation is that the number of post-stop outcomes recorded by any individual officer must be sufficiently large for statistical evaluation.

6.6 Conclusion

Studies of allegations of racially biased policing are a rapidly evolving science. The simple and traditional approaches of focusing on external census-based benchmarks have been revealed to be fundamentally flawed analytically, even if they are easy to implement. Analysis Group has recommended data analysis methodologies that address the identified weaknesses of prior approaches. Each of the analyses we recommend has been vetted in the academic literature, and tried in at least some jurisdictions. Each represents a substantial improvement over naive benchmarking approaches, and each may be implemented given our current understanding of the data. Although any one of the three studies proposed will provide insight into the potential of racially biased policing in the City, each addresses a fundamentally different perspective. Therefore, Analysis Group recommends that the City implement all the proposed methodologies.

The proposed methodologies represent a substantial improvement over most previous studies, but they too have limitations. Chief among these is the inability of our analysis to provide a simple yes or no answer to the question: "Does the LAPD engage in racial profiling?" Where it exists, purposeful discrimination by police is a product of racial animus or stereotyping. Statistical analyses cannot discover the subjective motivations that underlie discretionary decisions. We cannot "get inside the minds" of police officers to uncover their true racial feelings and how those feelings may affect their stop behavior. At most, we can measure racial disproportionality, which depending on its severity may provide indirect evidence of racial discrimination. However, given the uneven socioeconomic and criminogenic conditions among racial groups in the United States and the City of Los Angeles, it is unlikely that perfect racial proportionality could be achieved by the police even if they operated in a completely race-neutral fashion.

With that limitation in mind, we believe that our proposed analytic strategy can provide the City with useful information regarding the stop practices of the LAPD. Currently, substantial and unexplained racial disparities exist in the reported LAPD stop data. Our analyses likely will be able to explain some of factors that give rise to those disparities and may even be able to account for some of the disparities on non-racial grounds. Next, our analyses may reveal other disparities or undiscovered patterns or trends in the data that will shed light on the operations of the LAPD and may suggest avenues for improvement in policy or training. The officer-to-officer comparisons that we plan on performing will identify outlier officers, which in turn, will allow the LAPD to examine the reasons why some officers stop minorities more often than their peers. Finally, our proposed methodologies

will serve as models for future analyses to build from and improve upon as the science of racial profiling research develops over time.

CHAPTER 7: REVIEW OF STOP DATA COLLECTION PROCEDURES

7.1 Background and Purpose

The purpose of this chapter is to review and make recommendations regarding the FDR and the stop data collection protocol used by the LAPD. Detailed below are Analysis Group's recommendations regarding data collection and the FDR. Following the recommendations are two appendices. Appendix G contains sample search and contraband matrices that are more fully discussed below. Appendix H contains additional observations and comments on the data collection protocol. The City may wish to consider these observations and comments and discuss them with the DOJ, as necessary.

7.2 Calls for Service

Racially biased policing data collection protocols necessarily reflect a balance between the desirability of information for analytical purposes and the organizational costs of the data collection efforts themselves. Although capturing all potentially relevant information may be desirable from an analytic perspective, there are very substantial costs associated with data collection requirements imposed upon police officers. The productivity of line officers is inversely related to the amount of time spent on administrative tasks such as racially biased policing data collection. Thus, efforts should be made to streamline the data collection protocol to provide the maximum amount of relevant information while minimizing the time and effort required by officers to provide that information.

Although racially biased policing data collection is a new and evolving area of police practice, most agencies that have undertaken data collection have chosen to gather information only from officer-initiated stops. Analysis Group has reviewed data collection protocols from highway patrol, municipal, and county law enforcement agencies of all sizes and from all areas of the country and found none that require racially biased policing data collection on persons stopped in response to general calls for service. At the most, some agencies' data collection forms contain a field for "attempt to locate" when officers are searching for an individual in response to a call for a wanted or suspicious person. Overall, however, stops that result from dispatched calls for service do not typically trigger data collection requirements.

Such an approach makes sense from a theoretical and practical perspective. Where it exists, racially biased policing is the result of the improper exercise of police discretion. When officers are called to the scene of an event by the public, the opportunity for them to exercise discretion in whom to contact or detain is significantly diminished, if not eliminated. In contrast, when officers make contact

with or detain an individual based on their own initiative, they exercise a much greater degree of discretion and increase the probability that extralegal factors such as race may play a role in their decision-making. The universe of possible officer-initiated contacts is probably a better indicator of possible racial bias.

Moreover, from a practical standpoint, the LAPD does not detain many persons as the result of calls for service. For example, in the last half of 2003, only 1 percent of drivers stopped were detained based on calls for service. Although the percentage of pedestrians stopped based on calls for service was higher, at 15 percent of all stops, officers stopped far more pedestrians based on their own initiative rather than dispatched calls.

Also, the data set for pedestrians stopped pursuant to calls for service does not represent the full range of LAPD stop activity because many calls for service (*see* bulleted list in Section 7.1) are already excluded from the protocol. In addition, stops made as the result of calls for service are driven by public demand for police service and therefore do not accurately portray discretionary police decision-making. Even a single unusual event, such as a child abduction, could generate hundreds of stops and could skew the population of persons stopped of a certain race by the police in a given area. For these reasons, the time and effort required to complete FDRs for stops made pursuant to calls for service is probably not worth the additional cases that would be generated, especially if these stops do not represent the free exercise of police discretion unconstrained by public demands for service. ***Consequently, Analysis Group's recommendation is that the LAPD modify its FDR protocol to eliminate the data collection requirement for all dispatched calls for service. Only officer-initiated stops should trigger the completion of an FDR.*** We note that the current FDR database contains both officer-initiated stops and stops made pursuant to calls for service. Because of the different discretionary conditions under which these two categories of stops are made, we intend to analyze them separately (*see* Chapter 6) and recommend that this practice be followed so long as calls for service-related stops continue to be part of the LAPD data collection effort.

7.3 FDR Elements and Layout

Compared to the data collection forms or protocols used by some law enforcement agencies, the FDR used by the LAPD contains fewer data fields. Many agencies, for example, capture stop outcomes in greater detail than does the LAPD FDR. Under the uniform data collection elements recently adopted in the State of Illinois, agencies collect information on specified types of violations for which a citation was issued: speeding, lane violation, seat belt, etc. When arrests are made, the more comprehensive data collection forms in use allow officers to specify whether the arrest was for a

felony or misdemeanor or was made pursuant to a warrant. In addition, racial profiling analysts find it useful to have information on the nature of the charges for which arrests were made. Generally speaking, the more detailed the information that can be obtained on stop outcomes, the more comprehensive and productive the resulting data analysis will be.

Theoretically, data on stop outcomes that are not found on the FDR itself can be obtained by linking the FDR to other data systems through common identifiers, such as incident, booking, or citation numbers. Thus, a fuller and more comprehensive data set that contains, for example, information on citations and arrests can be developed for the purpose of analysis. In practice, the various data elements required to develop a comprehensive traffic and pedestrian stop data set are maintained in separate LAPD or City data systems. The organizational and administrative challenges in putting together a complete stop data set are formidable, as a host of City and LAPD data systems must be brought together and processes must be developed for integrating the information contained within them. Moreover, as problems and limitations in the various data sets are identified (*see* Chapter 5), it makes sense to streamline the data collection process and capture some of the more important outcome variables, together with the existing FDR elements, in a single data set.

We believe that some relatively minor changes can be made to the FDR form that will allow some of these disparate data elements to be integrated within the current FDR database, and this will reduce or eliminate the need to incorporate some data elements from other systems. Although the need may still arise to query other data systems, especially if specific analytic questions need further exploration, the recommended changes to the FDR form that follow will bring together in a single data system many of the data elements most relevant to an analysis of stops and stop outcomes.

Analysis Group's recommendations regarding the FDR are organized by the heading of each separate block of information contained on the current FDR form. We have no comments or recommendations for headings not mentioned or discussed below. In some cases, we recommend creating new data fields in addition to the elements already contained on the FDR. These recommendations appear below in Section 7.4.

7.3.1 Race of Suspects

Under the current FDR data collection protocol, officers are instructed to record race of the person stopped based on the officer's *initial* perception. If an officer discovers that a person's race is different than the officer's initial perception, the initial perception of race is still recorded.

This data collection procedure is problematic for several reasons. First, it may be difficult or impossible for an officer to clearly distinguish when his or her initial perception is made as the

observation and identification of suspects is a continuous process. It is reasonable to believe that the first impression may be influenced by the later face-to-face interaction. Second, because the identification of suspects is a continuous process, the time at which each officer makes their initial perception can vary from officer to officer and instance to instance. Therefore, there is not likely to be a consistent time when the determination of race is made. Third, if an officer discovers that a person's race is different from the officer's initial perception, yet records the initial perception of race as required, then some of the recorded race data is incorrect in that it does not capture what an officer's ultimate perceptions were after making contact with a suspect. Therefore, it may be impossible to fully ascertain how race affects officers' post-stop actions (e.g., citations, searches, and arrests) since they depend upon officers' perception of race after speaking and interacting with suspects, which is not currently captured in officers' initial impressions.

Given the difficulties in identifying an appropriate benchmark for stops, it is probably more important to have accurate race data for post-stop analyses than for an analysis of stops themselves. ***Therefore, Analysis Group recommends that officers record race based on the totality of their interaction with a suspect, not just their initial perception.*** This will provide a more accurate data set for post-stop analysis.

7.3.2 Initial Reason for Stop

Currently, the FDR contains a category titled Suspect Flight under Initial Reason for Stop but does not contain a broader descriptive category for Investigative Stops, as do almost all other stop forms currently in use around the country. Flight is one example of suspicious or unusual behavior that, when combined with other factors, may give a police officer reasonable suspicion to stop and detain a suspect. In reality, there are many such behavioral cues that trained police officers rely upon in evaluating whether to stop and detain someone for a suspected or potential criminal violation. This type of stop was authorized by the Supreme Court in *Terry v. Ohio* (1968) and is typically described as an investigative stop on most racially biased policing data collection instruments. It may be distinguished in training from the current FDR violation categories (Health & Safety, Municipal, Penal, etc.) by the amount of proof needed for the detention and therefore the greater degree of discretion that officers have in conducting investigative stops.

The current categories reserved for substantive code violations should be used when officers have *probable cause* to believe that a person has committed a violation falling within one of the specified legislative codes. ***Analysis Group recommends replacing Suspect Flight with a category entitled Investigative Stop to capture the broader category of stops based on reasonable suspicion***

that a person has committed or is about to commit a crime. The current Departmental Briefing category is a special type of investigative stop that merits its own category as opposed to subcategory because prior descriptions of suspects often include race, which necessarily limit an officer's discretion in whom to stop.

The current Vehicle Code violation category Equipment/Registration should be split into two separate categories: (1) Equipment Violation and (2) Registration Violation. Because non-moving violations have been shown to disproportionately impact minority drivers in other jurisdictions, a greater level of detail is warranted to gain as much insight as possible into these phenomena.

7.3.3 Warrantless Searches

Currently, it is impossible to ascertain from the FDR data what type of search authority was used as the basis for searching a person, vehicle, or container. Based on discussions with LAPD personnel and our review of the FDR and associated training materials, Analysis Group learned that officers are instructed to check all search authorities that apply to a given event. Thus, if an officer seeks and gains permission from a driver to search his person and as a result finds an illegal drug that leads to a search of the vehicle, which in turn leads to the driver's arrest, the officer will mark Consent and Incident to Arrest as the justifications for the searches conducted. Under this approach, it would be impossible to determine which search authority noted on the FDR applied to which search conducted. Likewise, it would be impossible to determine from where the contraband was seized: the driver himself or the vehicle. The ability to make these distinctions is important when conducting a search analysis and in understanding the dynamics of what occurred in the aftermath of a stop. Because of these limitations in the LAPD search data as they are currently collected, our search analyses will be less instructive than they otherwise would have been had the data been collected differently (*see* Chapter 6). ***Consequently, Analysis Group recommends that the LAPD modify the FDR to include search and contraband matrices that identify which search authorities apply to whom (or what) and precisely from where (or whom) contraband is seized. Examples of these matrices are included in Appendix G.*** Matrices similar to the examples provided in Appendix G are currently in use by a number of law enforcement agencies in the Chicago, Illinois area. Agencies using matrices for data collection purposes include the police departments in Joliet, Evanston, Kankakee, and Bloomington, Illinois, among others. The matrices shown in Appendix G are only provided for consideration by the City, recognizing that the types of data reflected in the matrices can be collected in a variety of ways, including the use of separate questions for each element.

We also note that Probable Cause is not listed as a category under Authority to Search. Probable cause is a necessary descriptive category for warrantless searches, particularly as they apply to automobiles. The Odor of Contraband category is an evidentiary factor that may provide an officer with probable cause to conduct a search, but many other factors (together or separately) may also provide such proof. Thus, ***Probable Cause is the more accurate descriptor for the legal authority under which an officer may search a vehicle without a warrant. Analysis Group recommends adding it as a Search Authority category.*** Similarly, Visible Contraband is another evidentiary factor that may provide an officer with probable cause to either seize the item and/or conduct a more complete search. ***If the LAPD desires to identify cases in which contraband is visible in plain view or in which the odor of contraband is present, then Analysis Group recommends that the FDR allow for these choices in the search matrix (see Appendix G).***

7.3.4 Pat-Down/Frisks

The LAPD FDR is unique among data collection instruments that Analysis Group has reviewed in that it captures both whether an officer conducted an initial pat-down/frisk of a person and later (under the Authority for Search category) whether the officer reached inside the person's clothing to retrieve a possible weapon. This latter search authority is entitled "Incident to Pat Down/Frisk." The legal authority for conducting a pat-down stems from Terry v. Ohio (1968) and includes the authority to reach inside clothing if the officer feels what he or she reasonably believes is a weapon. Thus, the amount of evidence required for conducting the frisk is the same as is needed for reaching inside the clothing, if necessary, to retrieve a possible weapon. At this point, we express no opinion on the usefulness of separating the frisk from the weapon retrieval itself for the purposes of data collection and analysis. However, ***Analysis Group recommends that for the sake of consistency with the FDR heading (What Was the Authority for the Search?) and our similar recommendation regarding "probable cause" above, the City should change "Incident to Pat Down/Frisk" to "Reasonable Suspicion," which is the more accurate descriptor for the legal authority under which officers are permitted to frisk a person, vehicle, or container (e.g., purse or backpack) and to retrieve potential weapons.***

7.4 New Data Fields

The FDR should contain a separate and independent field for stops based on radar and/or laser speed measurement devices. These devices are often employed by traffic units working problem areas or special details, and as a result, stops based upon speed determinations from these devices may

involve little or no discretion. Thus, these stops represent a different analytic category from other moving violations and may serve as a useful comparative group to assess racial differences, if any, between high discretion and low discretion stops. Analysis Group suggests that this field be incorporated as a subcategory of the Initial Reason for Stop block.

Next, the LAPD should consider adding data elements within the Action Taken block that capture more information on the type of action taken as the result of a stop. ***Under the Arrest element, sub-elements for felony and misdemeanor should be added, as should a sub-element for an arrest made pursuant to a warrant.*** This latter element is an important control variable in assessing the cause of any observed racial disparities in arrests because arrests made on warrants usually involve little or no discretion. Officers would check all arrest sub-categories that are applicable.

Under the Citation element, sub-elements should be considered for the most common traffic infractions cited by the LAPD (e.g., speeding, improper turns, running a red light, etc.). Officers would indicate for which of the violations, if any, the suspect was cited and would check an "Other" box if none applied. ***In addition, choices for (1) suspended/no driver's license, (2) failure to provide proof of insurance (if required by state law), (3) seatbelt violation, and (4) DUI should be incorporated here or elsewhere on the FDR.*** In other jurisdictions, and in other contexts, these violations have been shown to correlate with socioeconomic status and/or race.[274] Thus, they are important dependent, or control, variables in attempting to understand possible disparities among racial groups.

As noted in Section 5.2.5, parking citation numbers are sometimes entered into the field where traffic citation numbers are recorded on the FDR because there is no parking citations field. This causes a problem in matching the stops with citations from the stop data with the citations database because parking citations are not included in the citations database. In fact, because traffic citations are not electronically maintained by LAPD, it is difficult to identify which discrepancies between the stop database and the citations database are the result of parking citations. An option for "Parking Citation" could be included alongside the "citations" and "release for custody" options.

Finally, Analysis Group recommends the addition of data fields for the number of citations issued (1, 2, 3, or more), the number of persons in the vehicle (1, 2, 3, or more) and the duration of the stop (in minutes). Again, these fields have been found to correlate with race in other studies and are important to consider in a thorough analysis of police stop practices.

[274] Braver (2003); Istre, et al. (2002); Wells, et al. (2002).

7.5 Conclusion

The addition of these data fields may eliminate the need to query the existing citations and arrest databases. At this point, Analysis Group anticipates using these databases to obtain charge information for the post-stop multivariate analyses (*see* Chapter 6). The suggested additions to the FDR detailed above encompass many important control variables that currently must be extracted from the citations and arrest data and manually recoded. The adoption of Analysis Group's recommendations regarding additional data elements for the FDR will, at a minimum, promote more efficient analyses in the future and may eliminate altogether the need to link FDR data to arrest and citation data. Analysis Group may have further recommendations after implementing the methodologies for analyzing stop data proposed in Chapter 6.

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APPENDIX A: CURRENT AND ORIGINAL LAPD FDRS

(see the following pages)

Original FDR: November 2001 – June 2003

Field Data Report

1688104

(Use a pencil or blue or black pen, completely shade all circles that apply.)

DO NOT COMPLETE THIS REPORT IF ANY OF THE BELOW APPLY TO THE CONTACT:

Victim/Witness (Pedestrian Stop) — Prostitution Task Force — Arrest/Search Warrant — NarcoTask Force

Commercial Vehicle Inspection — Checkpoints/Road blocks (Vehicle Stop) — Unlawful Assembly/ Crowd Control (Pedestrian Stop)

Consensual - (Pedestrian Stop) — Except when such stops are elevated to a detention or include a pat down/frisk, search, seizure, preparation of a Field Interview Report, citation or arrest.

Call for Service - (Pedestrian Stop) — Related to homicide, rape, robbery, assault, domestic violence, shots fired, suspect with a gun or knife, kidnapping, bomb threat, child in danger of physical harm caused by another person, officer needs help or assistance, or battery.

O Pedestrian
O Driver
O Passenger

(If passenger required to exit vehicle, use separate form for each passenger.)

Gender	Apparent Age	Incident No.				
O Male O Female						
Apparent Descent	O 0	O 0	O 0	O 0	O 0	O 0
O White	O 1	O 1	O 1	O 1	O 1	O 1
O Black	O 2	O 2	O 2	O 2	O 2	O 2
O Hispanic	O 3	O 3	O 3	O 3	O 3	O 3
O Chinese	O 4	O 4	O 4	O 4	O 4	O 4
O Filipino	O 5	O 5	O 5	O 5	O 5	O 5
O Japanese	O 6	O 6	O 6	O 6	O 6	O 6
O American Indian	O 7	O 7	O 7	O 7	O 7	O 7
	O 8	O 8	O 8	O 8	O 8	O 8
O Other _____	O 9	O 9	O 9	O 9	O 9	O 9

INITIAL REASON FOR STOP: (Shade circles that apply.)

O Vehicle Code Moving Violation /Pedestrian Violation — O Call for Service — O Equipment/Registration Violation

O Municipal Code Violation — O Department Briefing (Crime Broadcast, Bulletins, Roll Call)

O Suspect Flight — O Penal Code Violation — O Health & Safety Code Violation

O Consensual — O Other

Driver Required to Exit Vehicle?	Pat Down/Frisk Conducted?	Detainee Asked to Submit to Consensual Search?
O Yes O No	O Yes O No	O Yes O No — Granted? O Yes O No

(If passenger required to exit vehicle, use separate form for each passenger.)

IF WARRANTLESS SEARCH CONDUCTED, SEARCH AUTHORITY:

O Parole/Probation — O Incident to Arrest — O Consent
O Odor of Contraband — O Impound Inventory — O Other
O Incident to Pat Down/Frisk — O Visible Contraband

WAS SEARCH CONDUCTED? O YES O NO IF YES, WHAT WAS SEARCHED?

O Vehicle — O Person — O Residence — O Other
O Belongings — O Container — O Office

IF SEARCH CONDUCTED, WHAT WAS DISCOVERED/SEIZED?

O Weapons — O Drugs — O Other Contraband — O Other Property
O Money — O Alcohol — O Other Evidence of Crime — O Nothing

ACTION TAKEN:

O Warning — O F.I Completed — O Citation No. _____
O Arrest — O None — O Booking No. _____

Date: M/DD/YY	Time Of Stop:	Reporting District:
/ /		

	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0
O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1
O 2	O 2	O 2		O 2	O 2	O 2	O 2	O 2		O 2	O 2	O 2
O 3	O 3	O 3		O 3		O 3	O 3	O 3		O 3	O 3	O 3
O 4		O 4		O 4		O 4	O 4	O 4		O 4	O 4	O 4
O 5		O 5		O 5		O 5	O 5	O 5		O 5	O 5	O 5
O 6		O 6		O 6		O 6		O 6		O 6	O 6	O 6
O 7		O 7		O 7		O 7		O 7		O 7	O 7	O 7
O 8		O 8		O 8		O 8		O 8		O 8	O 8	O 8
O 9		O 9		O 9		O 3		O 9		O 9	O 9	O 9
O 10												
O 11												
O 12												

Officer's Serial No.	Area/Div. No.	Officer's Serial No.	Area/Div. No.

O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0	O 0
O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1
O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2
O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3
O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4
O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5
O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6
O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7
O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8
O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9

Officer's Name	Officer's Name

70-15 43 01 (05-19)

Current FDR: July 2003 – current

FIELD DATA REPORT

Use blue or black ink pen

Correct Mark: ● Incorrect Marks: ✓ X ○

(Completely shade all areas that apply on this form)
(Each person requires a separate FDR form)

2610004

Completing Officer's Name	Partner Officer's Name

Serial No.	Area/Div. No.	Serial No.	Area/Div. No.
0 0 0 0 0	0 0	0 0 0 0 0	0 0
1 1 1 1 1	1 1	1 1 1 1 1	1 1
2 2 2 2 2	2 2	2 2 2 2 2	2 2
3 3 3 3 3	3 3	3 3 3 3 3	3 3
4 4 4 4 4	4 4	4 4 4 4 4	4 4
5 5 5 5 5	5 5	5 5 5 5 5	5 5
6 6 6 6 6	6 6	6 6 6 6 6	6 6
7 7 7 7 7	7 7	7 7 7 7 7	7 7
8 8 8 8 8	8 8	8 8 8 8 8	8 8
9 9 9 9 9	9 9	9 9 9 9 9	9 9

Incident No.

Driver

Did Driver Exit Vehicle? Yes No

Did You Ask Driver To Exit? Yes No

Pedestrian

Passenger

Apparent Descent
White
Black
Hispanic
Asian
American Indian
None of the Above

Gender
Male
Female

Apparent Age
1-17
18-25
26-35
36-45
46-55
56 or Above

INITIAL REASON FOR STOP: *(Shade Only One)*

Health and Safety Code Violation — Municipal Code Violation — Penal Code Violation
Department Briefing (Crime Broadcast, Bulletins, and Roll Call) — Suspect Flight
Consensual — Call for Service — Other _____

Vehicle Code Violation: *(shade what type of violation stopped for)*
Moving — Equipment/Registration — Pedestrian

Was a Pat Down/Frisk Search Conducted? Yes No

WARRANTLESS SEARCHES

Was the Detainee Asked to Submit to a Search? Yes No
If Yes, Did the Detainee Grant the Search? Yes No

Was a Search Conducted? Yes No
(If Yes, complete the following fields, if No skip to Action Taken)

What Was the Authority for the Search?
Consent — Incident to Arrest — Impound Authority — Incident to Pat Down/Frisk
Odor of Contraband — Parole/Probation — Visible Contraband — Other _____

What Was Searched? Person — Container — Vehicle — Other _____

Was Anything Discovered/Seized? Yes No

If Yes, What was Discovered/Seized?
Alcohol — Drugs — Money — Other Contraband
Other Evidence of Crime — Other Property — Weapons — Vehicle

ACTION TAKEN:

F.I. Completed — Warning — None
Arrest
Booking Number Required? Yes No →

Citation →
Release From Custody →

Date: M/DD/YY	Time Of Stop:	Reporting District:
1 7 0 0 0 0	0 0 0 0	0 0 0 0
2 8 1 1 1 1	1 1 1 1	1 1 1 1
3 9 2 2 2	2 2 2 2	2 2 2 2
4 10 3 3 3	3 3 3 3	3 3 3 3
5 11 4 4	4 4 4 4	4 4 4 4
6 12 5 5	5 5 5 5	5 5 5 5
6 6	6 6	6 6 6 6
7 7	7 7	7 7 7 7
8 8	8 8	8 8 8 8
9 9	9 9	9 9 9 9

SUPERVISOR REVIEWING
(Serial No.) _____

70-15 43 (Rev. 02/05)

APPENDIX B: DATA ELEMENTS & CODING PROPOSED BY PERF[275]

1) Time/Date
2) Location: Beat, division, block, intersection, etc.
3) Age: <18, 18-29; 30-39; 40-49; 50+
4) Gender: Male / Female
5) Race:
    - White
    - Black/African-American
    - Asian/Pacific Islander
    - Native American/Eskimo/Aleut
    - Middle Eastern/East Indian
6) Hispanic/Latino: Yes/No
7) Does person live in metropolitan area defined by U.S. Census? Yes/No
8) Reason for Stop
    - Reactive Stop (e.g., call for service, special detail such as roadblock) vs. Self-Initiated Stop (e.g., proactive vehicle or pedestrian stop)
    - Vehicle Code Violation:
        - Red Light/Stop Sign
        - Speed [____mph over limit]
        - Lane violation
        - Commercial vehicle
        - Following too closely
        - Failure to signal
        - Other moving violation
        - Hazardous equipment
        - Seat Belt
        - Other nonmoving violation
    - Penal Code Violation
        - Nuisance (related to quality of life)
        - Vice
        - Property Crime
        - Violent Crime
        - Violation of Local Ordinance
        - Be On the Lookout (BOLO)/Person Wanted
        - Suspicious circumstances
9) Disposition: Arrest
    - Ticket/Citation
    - Verbal warning
    - Written warning
    - No Action
10) Length of Stop: 0-15 min.; 16-30 min.; 31-60 min.; 61+
11) Were suspect's characteristics observable before stop? Yes/No
12) Comment Section: [allows for explanations for variables, if needed]

[275] Fridell et al. (2001).

13) Employee ID: [Or at least beat, division, and/or unit]

Search Variables
14) Was a search conducted? Yes/No
15) What was searched?
    If just collecting on vehicle stops:
        Vehicle
        Personal effects
        Driver
        Passenger(s)
    If collecting on both vehicle/pedestrian:
        Person: pedestrian, driver, passenger
        Vehicle
        Building/Residence
        Property/Personal effects
16) Authority to Search?
    Consent
    Reasonable suspicion - weapon
    Incident to arrest
    Probable cause
    Inventory
    Plain View
    Other
17) Search Results: Positive/Negative
18) What was recovered?
    Currency
    Weapon (or "gun" and "other weapon")
    Stolen property
    Illegal drugs/Drug paraphernalia
    Other
19) Optional: Additional details

APPENDIX C: JURISDICTIONAL STUDIES DATABASE

(see the following table)

Ap. .x C
Review of Jurisdictional Studies

	Jurisdiction	Number of Sworn Officers	Population	Size of Service Area (square miles)	Author of Study	Date of Study	Time Period Analyzed in the Study	Number of Stops Analyzed: Motor Vehicles	Pedestrians	Total	Suspect Characteristics Analyzed
1	Los Angeles Police Dept.*	9,000	3,800,000	468	Analysis Group	N/A	N/A	N/A	N/A	N/A	N/A
2	California Highway Patrol	6,700	33 5 million (20 7 million licensed drivers; 23 2 million registered vehicles)	15,234 (miles of freeway in California)	California Highway Patrol	July 1, 2000	July 1, 1999-April 30, 2000	2,638,589	0	2,638,589	Race Gender Age
3	Los Angeles County Sheriff's Dept	9,000	2,692,412	3,154	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Sacramento Police Dept.	651	441,000	98	University of Southern California School of Policy, Planning, and Development (Professor Howard Greenwald)	April 19, 2004	July 1, 2002-June 30, 2003	34,839	0	34,839	Race Age
5	San Diego Police Dept.	2,104	1,223,400	342	Dr. Gary Cordner, Eastern Kentucky University; Dr. Brian Williams, Vanderbilt University; Dr. Alfredo Velasco, San Diego State University	November, 2002	January-December 2001	121,013	0	121,013	Race Gender Age
6	San Francisco Police Dept.	2,300	776,733	47	Mark Schlosberg, ACLU	October 7, 2002	July 1, 2001-June 30, 2002	50,419	0	50,419	Race
7	San Jose Police Dept.	1,400	894,943	176	San Jose Police Dept.	June 14, 2002	January-December 2001	89,889	0	89,889	Race Gender Age
8	Charlotte-Mecklenburg Police Dept	1,500	650,000	488	North Carolina State University, Dept of Sociology and Anthropology (William Smith and Matthew Zingraff)	January 16, 2004	2002	77,125	5,649	82,774	Race Gender Age
9	Columbus Division of Police, OH	1,800	771,000	213	Ohio State University, Center for Biostatistics	June 24, 2003	Nov. 2001-Oct. 2002	64,089	0	64,089	Race Gender
10	Denver Police Dept.	1,402	550,000	155	University of Colorado at Denver, Dept. of Geography (Dr. Deborah Thomas and Richard Hansen)	March 2004	June 1, 2002-May 31, 2003	124,104	29,456	153,560	Race Gender Age
11	Houston Police Dept.	4,000	1,941,240	617	Houston Police Department and Sam Houston State University, Criminal Justice Center	May 2003	January-December 2002	439,086	101,674	540,760	Race Gender
12	Miami-Dade County Police Dept.	1,659	1,181,612	1,333	The Alpert Group	Late August 2004 (anticipated)	April-October 2001	66,109	0	66,109	Race Gender Age
13	New York Police Dept.	40,000	8,000,000	321	NY Office of the Attorney General in conjunction with Columbia University's Center for Violence Research and Prevention	December 1, 1999	January 1, 1998-March 31, 1999	0	174,919	174,919	Race
14	Pittsburgh Bureau of Police, PA	900	335,000	55	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A = Not Available.

* Data for LAPD are provided where available. Data analysis methodologies proposed by Analysis Group's are included (see Chapter 6 for more details).

Review of Jurisdictional Studies

	Jurisdiction	Data Error Rates	Type of Stop Benchmark	Feasibility of Determining Suspect Race	Other Factors Analyzed
1	Los Angeles Police Dept.*	Stop forms completed for 94% of required stops; 85% of forms were complete (Audit of Motor Vehicle and Pedestrian, Stop Data Collection, 4th Quarter - Fiscal Year 2003/2004, p 14)	Race of criminal suspects (pedestrian stops)	N/A	Suspect characteristics, officer characteristics, encounter characteristics, geographic characteristics (stop and post-stop analyses)
2	California Highway Patrol	N/A	1999 California Department of Finance population estimates, racial makeup of non-enforcement actions and collisions (motor vehicle stops)	N/A	N/A
3	Los Angeles County Sheriff's Dept.	N/A	N/A	N/A	N/A
4	Sacramento Police Dept.	N/A	U.S. Census data (motor vehicle stops)	Researcher conducted a few ride-alongs with some community members; consensus was that officers could not identify race prior to the stop in most cases	Race of suspects and victims, locations and race of probationers/parolees (only a discussion of each)
5	San Diego Police Dept.	Stop forms were completed for 58% of stops (estimated against citation records)	U.S. Census data; Census weighted for pre-text and non-pre-text stops (motor vehicle stops)	N/A	Suspect background information (stop and post-stop analyses)
6	San Francisco Police Dept.	66% of all stops were recorded by officers (according to citation records)	U.S. Census data (motor vehicle stops)	N/A	Probation/parole status (post-stop analysis only)
7	San Jose Police Dept.	N/A	U.S. Census and California Dept. of Finance population data (motor vehicle stops)	N/A	Calls for service, deployment, crime rates, socioeconomic factors (only a discussion of each)
8	Charlotte-Mecklenburg Police Dept.	10-20% error rate for addresses & other data on form (method for finding errors unknown)	U.S. Census data (pedestrian and motor vehicle stops); traffic crash data (motor vehicle only)	N/A	Calls for services for certain offenses (prostitution, drugs, inebriated pedestrians, and fighting), time of day, racial and age make-up of neighborhoods, hit rate (stop and post-stop analyses), type of vehicles stopped, number of residents in block groups, number of drivers in accidents (stop analysis)
9	Columbus Division of Police, OH	N/A	U.S. Census data (all traffic stops)	N/A	Crime rate, time of day, stops on freeways v. streets, number of officers in precinct, racial make-up of precincts, resolution of stops (stop analysis); reason for stops (stop and post-stop analyses)
10	Denver Police Dept.	5% missing 1 or more field, 1% missing traffic/pedestrian classification; 0.3% missing race (method for finding errors unknown)	U.S. Census data; victim identified suspects; gang offenses; non-discretionary arrests; citizen complaints of vice and narcotic activity; firearm offense suspects (all stops)	Officers self-reported on contact cards that, prior to stopping individuals, race could be identified in 8% of motor vehicle stops and 76% of pedestrian stops	Citizen-initiated calls, hit and run accidents, and commendations/complaints by citizens
11	Houston Police Dept.	N/A	U.S. Census data (pedestrian and motor vehicle stops)	N/A	Officer deployment density, drug-related complaints by citizens, time of day, reason for stops, disposition of stops (stop analysis); hit rates (post-stop analysis)
12	Miami-Dade County Police Dept.	N/A	Observed motor vehicle and violation information; not-at-fault two vehicle crash data (motor vehicle stops)	N/A	Crime rates, socioeconomic factors, location variables (stop and post-stop analyses)
13	New York Police Dept.	Officers filled out stop forms for 20-33% of stops (according to interviews with officers)	U.S. Census data; race of persons arrested (pedestrian stops)	N/A	Crime rates, justifications for stops, arrest rates (stop analysis), specialized units (stop and post-stop analyses)
14	Pittsburgh Bureau of Police, PA	N/A	N/A	N/A	N/A
		N/A = Not Available.			
		* Data for LAPD are provided where available. Data analysis methodologies proposed by Analysis Group's are included (see Chapter 6 for more details)			

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Review of Jurisdictional Studies

		Stop Analyses			Post-Stop Analyses		
	Jurisdiction	Benchmark Analysis	Geographic Disparity Analysis	Officer-to Officer Comparison	Benchmark Analysis	Geographic Disparity Analysis	Hit Rate Analysis
1	Los Angeles Police Dept.*	Bivariate and multivariate descriptive analyses; multivariate advanced analysis (pedestrian stops)	Bivariate and multivariate descriptive analyses (pedestrian and motor vehicle stops); multivariate advanced analysis (pedestrian and motor vehicle stops)	Bivariate and multivariate descriptive analyses (pedestrian and motor vehicle stops); multivariate advanced analysis (pedestrian and motor vehicle stops)	Bivariate and multivariate descriptive analyses (pedestrian and motor vehicle stops), multivariate advanced analysis (pedestrian and motor vehicle stops)	N/A	Yes
2	California Highway Patrol	Bivariate descriptive analysis	N/A	N/A	Bivariate descriptive analysis	N/A	N/A
3	Los Angeles County Sheriff's Dept.	N/A	N/A	N/A	N/A	N/A	N/A
4	Sacramento Police Dept.	Bivariate and multivariate descriptive analyses	Bivariate and multivariate descriptive analyses; bivariate advanced analysis	Multivariate descriptive analysis	Bivariate descriptive analysis	N/A	Yes
5	San Diego Police Dept.	Bivariate and multivariate descriptive analyses	Bivariate and multivariate descriptive analyses	N/A	Bivariate descriptive analysis	Multivariate descriptive analyses	Yes
6	San Francisco Police Dept.	Bivariate descriptive analysis	Multivariate descriptive analysis	N/A	Bivariate and multivariate descriptive analyses	N/A	Yes
7	San Jose Police Dept.	Bivariate and multivariate descriptive analyses	Bivariate and multivariate descriptive analyses	N/A	N/A	N/A	N/A
8	Charlotte-Mecklenburg Police Dept.	Bivariate and multivariate descriptive analyses (pedestrian and motor vehicle stops)	Bivariate and multivariate descriptive analyses; bivariate and multivariate advanced analyses (pedestrian and motor vehicle stops)	N/A	Bivariate and multivariate descriptive analyses (pedestrian stops)	Bivariate and multivariate descriptive analyses (pedestrian stops only); bivariate advanced analysis (pedestrian and motor vehicle stops)	Yes
9	Columbus Division of Police, OH	Bivariate and multivariate descriptive analyses	Bivariate and multivariate descriptive analyses	N/A	Bivariate descriptive analysis; bivariate and multivariate advanced analyses	Bivariate descriptive analysis; bivariate and multivariate advanced analyses	N/A
10	Denver Police Dept.	Bivariate and multivariate descriptive analyses (pedestrian and motor vehicle stops)	N/A	N/A	Bivariate and multivariate descriptive analyses (pedestrian and traffic stops)	N/A	Yes
11	Houston Police Dept.	Bivariate and multivariate descriptive analyses; bivariate advanced analysis (pedestrian and motor vehicle stops)	N/A	N/A	Bivariate descriptive analysis; bivariate advanced analysis (pedestrian and motor vehicle stops)	N/A	Yes
12	Miami-Dade County Police Dept.	Bivariate descriptive analysis; multivariate advanced analysis	N/A	N/A	Bivariate descriptive analysis; multivariate advanced analysis	N/A	Yes
13	New York Police Dept.	Bivariate and multivariate descriptive analyses	Bivariate and multivariate descriptive analyses; multivariate advanced analysis	N/A	Bivariate and multivariate descriptive analyses	Bivariate and multivariate descriptive analyses	N/A
14	Pittsburgh Bureau of Police, PA	N/A	N/A	N/A	N/A	N/A	N/A

N/A = Not Available.

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Review of Jurisdictional Studies

	Jurisdiction	Limitations of Study	Minorities were Overrepresented in Simple Comparisons of:	Summary of Study
1	Los Angeles Police Dept.*	N/A	N/A	N/A
2	California Highway Patrol	Benchmarks do not accurately reflect driving population	N/A	The study found that minorities were not overrepresented in enforcement stops when compared to the racial makeup of persons involved in non-enforcement stops
3	Los Angeles County Sheriff's Dept.	N/A	N/A	N/A
4	Sacramento Police Dept.	U.S. Census data does not accurately reflect driving population; actual neighborhoods do not usually correspond to census tracts	Stops Searches	The study concludes that there was no significant racial profiling problem in the jurisdiction during th time period studied. Overrepresentation of African-Americans in stops and searches was explained b other factors, such as demographics, criminal records, and suspects' backgrounds.
5	San Diego Police Dept.	Inconsistency/non-compliance of officers filling out stop forms; no multivariate analysi census does not accurately reflect driving population; lack of individual officer identifiers; lack of specific location information	Stops Searches	The study found overrepresentation of minorities in stops and searches when compared to U.S. Census data. However, when compared to census data weighted for pre-text and non-pre-text stops, minorities were not found to be overrepresented.
6	San Francisco Police Dept.	Benchmark does not accurately reflect driving population, underreporting of stops by officers; no multivariate analysis	Stops Searches Arrests	The study found overrepresentation of minorities in stops and searches when compared to U.S. Census data, even after accounting for motorists' probation/parole status. Despite a higher search rate for African-Americans and Latinos, their hit rate was lower than that of whites.
7	San Jose Police Dept.	Benchmark does not accurately reflect driving population; did not collect/analyze pedestrian stops which constitute majority of arrests; some descriptive statistics are discussed but not fully documented, no multivariate analysis	Stops	The study found overrepresentation of minority stops when compared to U.S. Census data. However, when comparing stops by police districts and accounting for factors other than race, the study found that minority stops were not overrepresented
8	Charlotte-Mecklenburg Police Dept.	Type of vehicle in analysis may bias results if different ethnic groups favor certain types of vehicles	Stops Searches	The study found that race was a statistically insignificant factor in predicting the likelihood of a perso being stopped after accounting for other factors, such as U.S. Census population, accident data, and citizen-initiated calls to predict the number of stops.
9	Columbus Division of Police, OH	Benchmark does not accurately reflect driving population; U.S. Census data uses different geographic areas than stop data (by precinct) and therefore must be converted; misreporting/underreporting of searches by officers when arrest made	Stops Searches Arrests	The study showed overrepresentation of minorities in stops, searches, and arrests but did not make any conclusive statements as to whether racially biased policing existed.
10	Denver Police Dept.	Census data not necessarily a good benchmark since it does not accurately reflect driving population; no data captured for individual officers; significant proportion of stops were non-residents; imprecise allocation of stops to police precincts that were redefined since previous study; no multivariate analysis	Searches	The studies found that people are generally stopped in or around neighborhoods that have the same racial makeup. Minorities were searched at a higher rate during traffic stops, but not generally during pedestrian stops.
11	Houston Police Dept.	Benchmark does not accurately reflect driving population; U.S. Census data may underrepresent Hispanics; no separation of vehicle stops from pedestrian stops	Stops Searches Arrests	The study compared the percentages of observed stops to expected stops based on U.S. Census population estimates and found that blacks were overrepresented. However, drug-related complaints by citizens and police deployment (which is driven by crime rates and calls for service) explain most this disparity.
12	Miami-Dade County Police Dept.	Not able to conduct internal benchmarking because of deployment patterns; observational component was limited to a small number of areas; contact cards only collected for 6 months; more community-level variables could have been included	N/A	Report not yet available (only some information was released).
13	New York Police Dept.	Not every stop resulted in the completion of a stop form; crime rate relied on crime complaint database although not every crime results in a complaint; did not collect or analyze motor vehicle data	Stops Arrests	The study concludes that minorities were stopped at higher rates than whites relative to their population proportions even when other potential factors, such as crime rates and hit rates, were taken into consideration.
14	Pittsburgh Bureau of Police, PA	N/A	N/A	N/A

N/A = Not Available.

* Data for LAPD are provided where available. Data analysis methodologies proposed by Analysis Group's are included (see Chapter 6 for more details)

Review of Jurisdictional Studies

	Jurisdiction	PR Efforts used to Communicate Results of Analyses	Legal Status of Individual Racial Profiling Claims	Legal Challenges Resulting from Data Collection or Analyses	Training and Monitoring as a Result of Study
1	Los Angeles Police Dept.*	N/A	None	None	N/A
2	California Highway Patrol	First report made public, some media coverage	Rodriguez v. CHP settled last year (terms of the settlement have not been released)	None	Used for training (no specifics given)
3	Los Angeles County Sheriff's Dept.	N/A	N/A	N/A	N/A
4	Sacramento Police Dept.	Public presentations	N/A	None	Sending some officers to racial tolerance training sponsored by the Simon Wiesenthal Institute of the Anti-Defamation League; developed departmental tolerance training program based on materials from Simon Wiesenthal Institute; developed a 15-member Community Racial Profiling Commission to serve as an advisory body for future studies
5	San Diego Police Dept.	Results were discussed with Vehicle Stop Advisory Board, provided in routine public meetings, and published on department website	N/A	None	Used for training (no specifics given)
6	San Francisco Police Dept	N/A	N/A	N/A	N/A
7	San Jose Police Dept.	Put studies on police dept. website; TV, radio, and newspaper interviews; public meetings (all for 2000 study of the jurisdiction)	N/A	None	Train officers to take more time with stopped drivers and better explain the reasons for stops (resulted from 2000 study of the jurisdiction)
8	Charlotte-Mecklenburg Police Dept.	Will present data to community	N/A	N/A	Reinforcing the need to complete stop forms
9	Columbus Division of Police, OH	Data provided to the media	No law suits - only citizen complaints; DOJ inquiry started with complaint from ex-sergeant-discrimination law suit	None	Used for training (no specifics given)
10	Denver Police Dept.	Presentations were made to city where media were present	There has been a lawsuit filed (March/April 2004)	None	Incorporate findings of searches into training; Department created victim/suspect typology (available on internet)
11	Houston Police Dept.	Staff officer made presentations in public meetings and to city council and police agency with media present	N/A	None	Used for training (no specifics given)
12	Miami-Dade County Police Dept.	N/A	N/A	N/A	N/A
13	New York Police Dept.	Report made available to public	A federal class action civil complaint was initiated on March 8, 1999 to seek an injunction barring NYPD from stopping people of color without reasonable suspicion of criminal activity; case was settled in late 2002	N/A	N/A
14	Pittsburgh Bureau of Police, PA	N/A	N/A	None	N/A

N/A = Not Available.

* Data for LAPD are provided where available. Data analysis methodologies proposed by Analysis Group's are included (see Chapter 6 for more details).

APPENDIX D: DATA ELEMENTS COLLECTED BY JURISDICTIONS REVIEWED

(see the following pages)

Appendix D
Data Elements Collected

	Data Collection Approach				General Contact Information				
Jurisdiction/Organization	Definition of a Stop	Officers that Collect Stop Data	Data Collection Methods	Police Department Data Auditing Techniques	Date/Time	Type of Stops Recorded	Duration of Stop	Location of Stop	Officer ID
American Civil Liberties Union (ACLU)[j]	N/A	N/A	N/A	N/A		N/A			
California Legislative Analyst's (CLA) Office[k]	N/A	N/A	N/A	Use ride-alongs and/or in-car video to validate stop data	X	All traffic stops, pedestrian (optional)	X	X	X
U.S. Department of Justice (DOJ)[l]	Any time an officer detains a motorist and/or vehicle	N/A	enter data into electronic devices, can use existing data collection systems (e.g., dispatch, citations, officer logs)	Crosscheck stop data to dispatch records, DMV data, and surveys of persons stopped	Day of week, time of day	*All motor* vehicle stops		--Volume of traffic --Jurisdictional stop legal requirements --Population density --Socioeconomic disadvantage of jurisdiction	Officer age, race, sex, length of service, training, current assignment
Police Executive Research Forum (PERF)[l]	All motor vehicle stops (including violations of motor vehicle laws and investigatory stops)	N/A	enter data into electronic devices	Crosscheck stop data with citation data, dispatch data, paper forms if used, and in-car video	X	All motor vehicle stops	*0-15 min *16-30 min *31-60 min *61+ min	Beat, division, block, intersection	ID, or at least beat, division, and/or unit
Los Angeles Police Dept	Any contact that results from regular field law enforcement duties, which are defined as: responding to calls for service, conducting traffic and pedestrian stops for enforcement/investigative purposes, and assisting members of the public	All officers in field operations	Data is entered into mobile electronic database in the field	Supervisory review process; check completeness of forms; verify samples of hard copies to scanned stop data; compare stop data to arrest records and complaints; forensic audits; sting audits;	Day, month, year, hour, minute	*Driver *Passenger *Pedestrian		Reporting district	Officer and partner name, serial numbers, area/div number Reviewing supervisor's serial number

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Data Elements Collected

	Data Collection Approach				General Contact Information				
Jurisdiction/Organization	**Definition of a Stop**	**Officers that Collect Stop Data**	**Data Collection Methods**	**Police Department Data Auditing Techniques**	**Date/Time**	**Type of Stops Recorded**	**Duration of Stop**	**Location of Stop**	***Officer ID***
California Highway Patrol	All enforcement actions, non-enforcement related services, and traffic collision related incidents	All road patrol officers	Scanned paper forms	Supervisors review forms for completeness; system checks for logical errors and data completeness; however, data is not corrected subsequent to scanning	Day, month, year, shift start time	Motor vehicle	*1-10 minutes *11-20 minutes *21-30 minutes *31-40 minutes *41-50 minutes *51-60 minutes *61> minutes	Area location code	Captured only for narcotics canine officers
Los Angeles County Sheriff's Dept.	Any time a person is legally detained, whether officer-initiated or as the result of a call for service	Officers in field operations (e.g., patrol, gang unit), but not detectives	Data entered into electronic devices	Supervisors may review; other reviews undertaken on an ad-hoc basis (e.g., in response to a complaint)	System captures day, month, year, and time electronically	Pedestrian and motor vehicle	System captures duration electronically	Intersection or address is manually entered, as well as Reporting District code	Not captured as a field; however, officers can be identified based on the MDT system
Sacramento Police Dept.	Legal detention of a motorist for officer-initiated stops	All officers	Scanned paper forms	System logic check is performed on scanned data [researchers checked stop data against citation records; compared results to previous year for consistency]	Day, month, year, hour, minute	Motor vehicle	Total minutes	District	Officer and secondary officer badge numbers

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Data Elements Collected

	Data Collection Approach				General Contact Information				
Jurisdiction/Organization	Definition of a Stop	Officers that Collect Stop Data	Data Collection Methods	Police Department Data Auditing Techniques	Date/Time	*Type of Stops* Recorded	Duration of Stop	Location of Stop	Officer ID
San Diego Police Dept	All stops, traffic and crime related	All officers	Completed paper forms	N/A [researchers: checked stop data against citation records, interviewed officers in focus groups]	Day, month, year, time	Motor vehicle		One of 21 police areas	Forms are anonymous
San Francisco Police Dept	N/A	N/A	Completed paper forms	N/A	Time	Motor vehicle		Fill in the blank, including district	
San Jose Police Dept.	Officer-initiated traffic stops	All officers	Officer communicates information verbally to dispatcher; dispatcher enters data	Checked forms that looked questionable		Motor vehicle			Can be traced through the system on a case-by-case basis

Data Elements Collected

	Data Collection Approach				General Contact Information				
Jurisdiction/Organization	Definition of a Stop	Officers that Collect Stop Data	Data Collection Methods	Police Department Data Auditing Techniques	Date/Time	Type of Stops Recorded	Duration of Stop	Location of Stop	Officer ID
Charlotte-Mecklenburg Police Dept.	Anytime an officer detains a person or requests consent to search a person (DWI and License checkpoint detentions are excluded, unless the detention results in a warning, citation, search, seizure, contraband being found, arrest, physical resistance, use of force, or injuries)	All officers	Completed electronic web-based forms	Compared called-in stops to forms; also, compared the number of citations to the number of stops; compared officer car video to stop forms in random audits	Day, month, year, hour, minute	Pedestrian and motor vehicle	Captured in five-minute increments up to one hour, with one box to indicate stops lasting longer than one hour	Block, direction, street, type	Code number
Columbus Division of Police, OH	Any discretionary traffic violation stop (including pedestrian jaywalking)	Patrol and traffic officers	Primary method: data entered into electronic devices; secondary method: data captured on paper forms	Check stop data/forms for internal consistency; in case of a complaint, check for a corresponding stop form	Day, month, year, hour, minute	All traffic code violations	Beginning and ending times of stop	*Cruiser district *Intersection of violation *Intersection of stop (if different)	Incident number can be linked to a particular police cruiser
Denver Police Dept.	Officer-initiated vehicle and pedestrian stops resulting in a stop, search, detention, or arrest	All officers, including off-duty and engaged in secondary employment	Scanned paper forms	Supervisors review forms and activity logs when forms are submitted to ensure that forms are included for each discretionary stop	Day, month, year, time as one of eight three hour periods	Driver, passenger and pedestrian	*<5 minutes *5-9 minutes *10-19 minutes *20-29 minutes *30-39 minutes *40-49 minutes *50-59 minutes *>60 minutes	Precinct	
Houston Police Dept.	All traffic stops and pedestrian stops	All officers	Officers enter data into laptop computers in the field and transfer data to the department's main computer	If a complaint is filed, check to ensure a stop data form was completed, estimate compliance levels based on a comparison with ticket data	Fill in the blank	Pedestrian and motor vehicle		Fill in the blank	PR number for officer 1 and 2, unit ID
Miami-Dade County Police Dept.	All discretionary traffic stops	All officers	Paper forms	Compared radio calls and citation data to stop data [researchers: information on citizen contact cards was checked to find out if officers were correctly reporting race of drivers stopped; contact cards of officers who stopped Black drivers disproportionately were compared to those of other officers to see if the stops of Black drivers were appropriate]	Day, month, year, time	Motor vehicle		Intersection or address	Name/rank, badge, unit number

Appendix D
Data Elements Collected

	Data Collection Approach				General Contact Information				
Jurisdiction/Organization	Definition of a Stop	Officers that Collect Stop Data	Data Collection Methods	Police Department Data Auditing Techniques	Date/Time	Type of Stops Recorded	Duration of Stop	Location of Stop	Officer ID
New York Police Dept.	Anytime a person is temporarily detained for questioning	All officers	Paper forms	Supervisors review and summarize forms; forms are used for tracking overall police activity levels, so if too few forms are submitted, this results in follow up	Day, month, year, time	Pedestrian	Fill in the blank	Address or intersection *Inside/outside *Transit/housing Type of location (describe) Precinct of occurrence	Name, shield, precinct, post, precinct serial number
Pittsburgh Bureau of Police, PA	Any stop of a vehicle (includes sobriety checkpoints)	All officers	Paper forms	Supervisors are responsible for ensuring forms are fully completed	Day of week, date, shift, start/end time of stop	Motor vehicle	Start time/end time	Field	Name of officer and partner, assigned number, vehicle/unit, sector/ assignment, Shift Lieutenant signature, Shift Lieutenant assigned number
	[1] Information for ACLU, California Legislative Analyst's Office, DOJ, and PERF are general recommendations for police agencies.								
	* Denotes one of a list of options								
	Notes: Any special instructions are presented in bold.								

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Data Elements Collected

	Information on Contacted Person(s) and/or Vehicle(s)							Stop Information		Search Information	
Jurisdiction/Organization	Race/Ethnicity	Age	Sex	Drivers License/ID	Driver's Residence	Vehicle Information	Number of Passengers	Reason for Stop/Contact	Result of Stop	Was there a search and/or pat-down? Of What? Search authority? Consent obtained?	Anything found and/or seized in search?
American Civil Liberties Union (ACLU)[j]	X							X	X	Search? Y/N only	X
California Legislative Analyst's (CLA) Office[i]	X	X	X					X	X	X (consent question not included)	X
U.S. Department of Justice (DOJ)[1]	X	X	X		X	Type of vehicle		Departmental stop policies, driving behavior, nature of violations			
Police Executive Research Forum (PERF)[1]	*Asian/Pacific Islander *Black/African American *Middle Eastern/East Indian *Native American/Eskimo/Aleut *White Hispanic/Latino? Y/N	*<18 *18-29 *30-39 *40-49 *50+	M/F		In metropolitan area defined by U.S. Census? Y/N			*Reactive stop (e.g. call for service, roadblock) *Self-initiated stop (e.g. proactive stop) Vehicle code violation *Red light/stop sign *Speed [__mph over limit] *Lane violation *Commercial vehicle *Following too closely *Failure to signal *Other moving violation *Hazardous equipment *Seat belt *Other nonmoving violation Penal code violation: *Nuisance (related to quality of life) *Vice *Property crime *Violent crime *Violation of local ordinance *Be on the lookout (BOLO)/person wanted *Suspicious circumstances	*Arrest *Ticket/citation *Verbal warning *Written warning *No action	Search? Y/N If vehicle stops only: *Vehicle *Personal effects *Driver *Passenger(s) If vehicle and pedestrian stops: *Person: pedestrian, driver, passenger *Vehicle *Building/residence *Property/personal effects Search authority: *Consent *Reasonable suspicion - weapon *Incident to arrest *Probable cause *Inventory *Plain view *Other	*Currency *Weapon (or gun and other weapon) *Stolen property *Illegal drugs/drug paraphernalia *Other
Los Angeles Police Dept	Apparent Descent: *American Indian *Asian *Black *Hispanic *White *None of the above (fill in blank)	*1-17 *18-25 *26-35 *36-45 *46-55 *56+	M/F					*Health and safety code violation *Department briefing (crime broadcast, bulletins, and roll call) *Consensual *Municipal code violation *Call for service *Penal code violation *Suspect flight *Vehicle code violation: moving, equipment/registration, or pedestrian *Other (fill in blank) (Mark initial reason, one reason only)	*FI completed *Warning *Arrest *None *Citation *Release from custody	Pat/down frisk? Y/N Other search? Y/N *Person *Container *Vehicle *Other (fill in blank) Search authority: *Consent *Odor of contraband *Incident to arrest *Parole/probation *Impound authority *Visible contraband *Incident to pat down/frisk *Other (fill in blank) Consent: Was consent for warrantless search asked for? Y/N Was consent obtained? Y/N	Search? Y/N Discovered and/or seized: *Alcohol *Drugs *Money *Other contraband *Other evidence of crime *Other property *Weapons *Vehicle

Appendix D
Data Elements Collected

	Information on Contacted Person(s) and/or Vehicle(s)							Stop Information		Search Information	
Jurisdiction/Organization	Race/Ethnicity	Age	Sex	Drivers License/ID	Driver's Residence	Vehicle Information	Number of Passengers	Reason for Stop/Contact	Result of Stop	Was there a search and/or pat-down? Of What? Search authority? Consent obtained?	Anything found and/or seized in search?
California Highway Patrol	Officer personal observation only, unless an arrest is made: *Asian *Black/African American *Hispanic *White *Other	Based on personal observation or information collected from driver's license: *0-14 *15-24 *25-32 *33-39 *40-48 *49 and above	M/F					*Moving violation (V.C.) *Mechanical or nonmoving violation (V.C.) *DUI check *Penal code/all other codes *Traffic collision *Motorist/public service *Inspection scale facility *Other agency assist/BOLO/APB/warrant	*In-custody/arrest *CHP 215, notice to appear *CHP 281, notice to correct violation *Verbal warning *Traffic collision *Motorist/public service *CVSA stitcher *Turnover/agency assist service	*No search/terry pat/frisk *Probable cause (positive) 202D required *Probable cause (negative) 202D required *Consent (positive) 202D required *Consent (negative) 202D required *Incidental to arrest *Vehicle inventory *Parole/probation/warrant *Other, 202D required	*Weapons *Controlled substance *Cash *Vehicle *Other illegal property
Los Angeles County Sheriff's Dept.	Officer perception: *American Indian *Asian *Black *Hispanic *Pacific Islander *White *Other	Date of birth	Fill in the blank	First and last name		Vehicle information is captured electronically when running license plate number through database	May enter up to four persons per screen, additional persons may be added by creating new secondary entry	Contact type: *Suspect/subject *Detainee/driver (investigative stops) *Victim *Witness *Informant *Party (traffic reports) *Reporting party (non-crime dom violence) *Suspected family abuse Probable cause for stop: *Vehicle code violation *Penal code violation *Health & safety code violation *Business & professions code violation *Welfare & institutions code section *Federal code *City/county ordinance *BOLO/APB broadcast *Consensual encounter *Reasonable cause (explain in narrative) *Render assistance (disabled motorist)	*Number of persons arrested for felonies *Number of persons arrested for misdemeanors, [categorized by "male adults, female adults, male juveniles, and female juveniles"] Citation info *Hazardous *Non-hazardous *Parking	The following search codes are captured separately for vehicle and personal searches: *No search *Contraband visible *Odor of contraband *Consent search *Pat-down *Incident to lawful arrest *Inventory (vehicle impounded) *Evidence of criminal activity (459 tools) *Other (explain in narrative)	*Weapons *Controlled substance *Cash *Vehicle *Suspicious property (R/C arrest) *Illegal property (open container) *Nothing seized
Sacramento Police Dept.	*African American *As./Pac. Isl. *Hispanic *Nat. American *White *Other/Not Apparent	Driver year of birth	M/F	Drivers license captured	State of driver's license	License number and state	Number of passengers (0–4)	*Hazardous violation of the vehicle code *Violation of the penal code *Call for service - suspect description/vehicle description *Pre-existing knowledge/information *Equipment/registration violation *Special detail (POP project, DUI checkpoint, crime pattern/series, narcotic/prostitution suppression) *Other _____	*Citation *Arrest *Report *Advised *FC	*Driver *Passenger *Vehicle *No Search authority: *Incident to arrest *Tow inventory *Consent *Parole/probation *Terry cursory	Discovered or seized (mark all that apply): *Weapons *Drugs *Cash *Vehicle *Alcohol *Other property *Nothing

Appendix D
Data Elements Collected

	Information on Contacted Person(s) and/or Vehicle(s)							Stop Information		Search Information	
Jurisdiction/Organization	Race/Ethnicity	Age	Sex	Drivers License/ID	Driver's Residence	Vehicle Information	Number of Passengers	Reason for Stop/Contact	Result of Stop	Was there a search and/or pat-down? Of What? Search authority? Consent obtained?	Anything found and/or seized in search?
San Diego Police Dept.	Perceived: *Black *Chinese *Cambodian *Filipino *Guamanian *Hispanic *Indian *Japanese *Korean *Laotian *Pacific Islander *Samoan *Hawaiian *Vietnamese *White *Asian Indian *Other Asian *Other	Fill in the blank	Fill in the blank		City of San Diego resident? Y/N			*Moving violation *Equipment violation *Radio call/citizen contact *Personal knowledge/informant *Suspect info (I.S., bulletin, log) *Muni, county, H&S code (Check only one)	*Citation *Written warning *Verbal warning *FI *Other (description) *Arrested? Y/N (Check all that apply)	Y/N *Vehicle *Driver *Passenger(s) Search authority: *Contraband visible *Canine alert *4th waiver search *Inventory search (prior to impound) *Observed evidence related to criminal activity *Odor of contraband *Consent search *Search incident to arrest *Other (text line) (Check all that apply) Consent: Consent search form obtained? Y/N	Contraband found? Y/N Property seized? Y/N
San Francisco Police Dept.	Fill in the blank	Fill in the blank	Fill in the blank					*Moving violation *Mechanical or non-mover *DUI check *Penal code violation *MPC violation *BOLD/APB/warrant *Traffic collision *Assistance to motorist	*Custody Arrest *Citation *Warning *Incident Report *No further action Separate fields for capturing information on citation number and violation	*No search *Search w/out consent *Search with consent *Search incident to arrest, positive result *Search incident to arrest, negative result. *Vehicle inventory, positive result *Vehicle inventory, negative result, *Searched as result of probation/parole condition	Some information incorporated with data on whether a search was conducted
San Jose Police Dept.	*African-American *Asian *European American *Hispanic *Middle Eastern/East Indian *Native American Indian *Pacific Islander *Other/unclassified							*BOLO/APB/watch bulletin *Muni code violation *Penal code, H&S, B&P violations, etc. *Vehicle code violation	*Arrest made *Arrest by warrant *Criminal citation *Traffic citation issued: hazardous violation *Traffic citation issued: non-hazardous violation *Field interview completed *Courtesy service/citizen or agency assist *Latent prints (report completed) *Stranded motorist assist *No report *Prior case, follow-up activity only *Report taken *Turned over to another agency *Unfounded event *Fill assist only *S/O assist	*No search of the driver's vehicle conducted *Search of the driver's vehicle conducted - evidence or contraband found *Search of the driver's vehicle conducted - no evidence or contraband found	Information captured as part of recording search

Data Elements Collected

	Information on Contacted Person(s) and/or Vehicle(s)							Stop Information		Search Information	
Jurisdiction/Organization	Race/Ethnicity	Age	Sex	Drivers License/ID	Driver's Residence	Vehicle Information	Number of Passengers	Reason for Stop/Contact	Result of Stop	Was there a search and/or pat-down? Of What? Search authority? Consent obtained?	Anything found and/or seized in search?
Charlotte-Mecklenburg Police Dept.	Captured for driver and for any other persons searched: Apparent race *Asian *Black *Native American *White *Other/unknown Apparent ethnicity *Hispanic *Non-Hispanic	Fill in the blank (apparent) (captured for driver and for any other persons searched)	M/F (captured for driver and for any other persons searched)	State only	*Resident (Meck) *Non Resident *Unknown	*High Performance *Pick Up *Motorcycle *SUV *Car *Other State of registration	Can record information for up to four "additional persons"	For traffic: *Speeding *Stop light/sign *Driving while impaired *Safe movement *Vehicle equipment *Vehicle regulatory *Investigation *Seat belt *Other (w/explanation) For pedestrian: *Investigation *Crime in progress *Warrant/OFA *Other (w/ explanation) Separate field for traffic & pedestrian stops: *Citizen report *Self initiated *Law enforcement report/request *Voluntary contact (ped stops only)	*Verbal warning *Written warning *Citation issued *Arrest (indicate driver or passenger, if applicable) *No action taken Tag run? Y/N and reason	Y/N *Consent *Search warrant *Search incident to arrest *Protective frisk Traffic stops only: *Person *Passenger *Personal effects *Vehicle (choose one or more) Consent search: *Was consent requested? Y/N *Reason for consent to search request Legal basis (traffic stops) *Erratic/suspicious behavior *Observation of suspected contraband *Suspicious movement *Informant's tip *Other official's info *Witness observation Legal basis (ped stops): *Probable cause (requires explanation) *Reasonable suspicion (requires explanation) *Pursuant to consent *Warrant *Incident to arrest *Other	Contraband? Y/N and details of any amounts of drugs, alcohol, money, weapons, or other contraband found Seized: *Vehicle *Personal property *Other *None (Check all that apply)
Columbus Division of Police, OH	*Asian *Black *Hispanic *White *Other		M/F					*Equipment violation *Moving violation *Investigatory	*Verbal warning *Traffic citation *Misd. cite/summons *Arrest *Vehicle search *Driver search *None	*Vehicle *Driver	
Denver Police Dept.	Identifiable? Y/N *American Indian *Asian *Black *Hispanic *Middle Eastern *White	Age field	M/F		Resident of Denver? Y/N Resident of precinct or adjacent precinct? Y/N			*Moving violation *Equipment violation *Personal observation *Received Information (Mark all that apply)	*Field interview and/or clearance *Verbal or written warning *Citation or order-in *Arrest *Detox/MHH/hospitalized (Mark all that apply)	*No search *Consent *Cursory/pat down *Incident to arrest *Tow/inventory *Canine alert *Search warrant (Mark all that apply)	Anything seized? Y/N
Houston Police Dept.	*Asian *Black *Hispanic *Native American *White		M/F					*Investigation *Moving traffic *Non-moving traffic	*Arrested *Arrested and ticketed *Released *Ticketed *Misdemeanor charges *Felony charges *Traffic charges	*No search *Consent search *Probable cause search (text box for more info)	Contraband? Y/N What contraband found, if any?
Miami-Dade County Police Dept.	*American Indian or Alaska Native *Black *Native Hawaiian or Pacific Islander *Oriental/Asian *White Hispanic? Y/N	Date of birth field	M/F	Last name, first name, address, license number, state	Address information	Year, make, model, color, license number and state		*Equipment violation *Investigative *BOLO *Hazardous moving violation *Non-hazardous moving violation *Traffic detail *Other (specify) (Choose only one)	*Citation issued (number of citations) *Custody arrest *Verbal warning *Vehicle towed *Field interview card *PTA *Records check conducted of person or vehicle	Pat down? Y/N *Of driver *Of vehicle *Of passenger(s) *Pat down *Other (specify) Duration of search *Search made by consent *Incident to arrest *Inventory search *Probable cause *Other (specify) Consent requested? Y/N	*Instrumentalities of crime *Fruits of crime *Drugs and/or paraphernalia *Weapons *Other (specify) *Plain view? Y/N

Appendix D
Data Elements Collected

	Information on Contacted Person(s) and/or Vehicle(s)							Stop Information		Search Information	
Jurisdiction/Organization	Race/Ethnicity	Age	Sex	Drivers License/ID	Driver's Residence	Vehicle Information	Number of Passengers	Reason for Stop/Contact	Result of Stop	Was there a search and/or pat-down? Of What? Search authority? Consent obtained?	Anything found and/or seized in search?
New York Police Dept.	*American Indian/Alaskan Native *Asian/Pacific Islander *Black *Black Hispanic *White *White Hispanic	Date of birth field	M/F	Name, nickname or street name, address, telephone number, type of identification provided, age, height, weight, hair, eyes, build, other descriptive info	Address information			Circumstances which led to stop: *Carrying objects in plain view used in commission of crime (e.g. slim jim/pry bar) *Fits description *Actions indicative of 'casing' victim or location *Actions indicative of acting as a lookout *Suspicious bulge/object (describe) *Actions indicative of engaging in drug transaction *Furtive movements *Actions indicative of engaging in violent crimes *Wearing clothes/disguises commonly used in commission of crime *Other reasonable suspicion of criminal activity (specify) **(Check at least one)** Specify which felony/P.L. misdemeanor suspected	Arrest? Y/N Offense (fill in the blank) Arrest number Summons? Y/N, offense, summons number	Frisk? Y/N, if yes must check one *Inappropriate attire-possibly concealing weapon *Verbal threats of violence by suspect *Knowledge of suspects prior criminal violent behavior/use of force/use of weapons *Other reasonable suspicion of weapons (specify) *Furtive movements *Actions indicative of engaging in violent crimes *Refusal to comply with officer's direction(s) leading to reasonable fear for safety *Violent crime suspected *Suspicious bulge/object (describe) Search? Y/N, if yes, check at least one. *Hard object *Admission of weapons possession *Outline of weapon *Other reasonable suspicion of weapons (specify) Pat down? Y/N Search inside clothes? Y/N	Was weapon found? Y/N, if yes: *Pistol/revolver *Rifle/shotgun *Assault weapon *Knife/cutting instrument *Machine gun *Other (describe) Was other contraband found? Y/N If yes, describe contraband and location (text field)
Pittsburgh Bureau of Police, PA	*American Indian *Asian *Black *Hispanic *White *Other		M/F	Driver Name (optional) Driver OLN (optional)		License number and state	Number of occupants[1]		*Warned *Arrested (list charges) *Cited *Investigatory stop only	Occupants frisked? Y/N	*Weapons *Contraband *Evidence *N/A
	[1] Information for ACLU, California Legislative Analyst's Office, DOJ, and PERF are general recommendations for police agencies.										
	* Denotes one of a list of options										
	Notes: Any special instructions are presented in bold.										

Data Elements Collected

	Other Information			
Jurisdiction/Organization	General Comments/Narrative	Related Reports	Other Data Elements	Other Data Elements (continued)
American Civil Liberties Union (ACLU)[j]				
California Legislative Analyst's (CLA) Office[k]				
U.S. Department of Justice (DOJ)[1]			Were citizen's characteristics observable before the stop?	
Police Executive Research Forum (PERF)[1]	X			
Los Angeles Police Dept.		*Booking number *Citation number *Release from custody number	Driver required to exit vehicle? Y/N Incident number	

Data Elements Collected

	Other Information			
Jurisdiction/Organization	General Comments/Narrative	Related Reports	Other Data Elements	Other Data Elements (continued)
California Highway Patrol		Capture number of reports written associated with incident Capture how much time deputy spent writing reports	Codes capture what the call was about (e.g. domestic violence)	
Los Angeles County Sheriff's Dept.	Yes, suggested information includes vehicle year, make, model & color, CDL number, distinctive features and tattoos	Citation number(s)		
Sacramento Police Dept.			Vehicle equipped with a camera? Y/N Was Driver asked to exit car? Y/N	

Data Elements Collected

	Other Information			
Jurisdiction/Organization	General Comments/Narrative	Related Reports	Other Data Elements	Other Data Elements (continued)
San Diego Police Dept.				
San Francisco Police Dept.		Citation number is captured	Additional fields labeled "FST, PAS, and TOW" are captured	
San Jose Police Dept.				

	Other Information			
Jurisdiction/Organization	General Comments/Narrative	Related Reports	Other Data Elements	Other Data Elements (continued)
Charlotte-Mecklenburg Police Dept.	Text box	Complaint number	Physical resistance? Y/N Officer injury? Y/N Driver injury? Y/N Passenger injury? Y/N Use of force? Y/N	
Columbus Division of Police, OH		Incident number	Initiation: violation on freeway? Y/N	
Denver Police Dept			Sheriff's dept employee? Y/N Officer off-duty? Y/N	
Houston Police Dept.	Notes may be added			
Miami-Dade County Police Dept.	Field provided	Primary citation number, case number of records check	Officer off-duty? Y/N	

Appendix D
Data Elements Collected

	Other Information			
Jurisdiction/Organization	**General Comments/Narrative**	**Related Reports**	**Other Data Elements**	**Other Data Elements (continued)**
New York Police Dept.		Complaint report number, juvenile report number, aided rpt. number, other rpt (specify)	Period of observation prior to stopping Radio run/sprint number Did officer explain reason for stop? Y/N, if no, explain Were other persons stopped/questioned/frisked? Y/N, if yes, list pct. serial numbers Demeanor of person after being stopped (text) Remarks by person stopped (text) <u>Officer in uniform? Y/N, if no, how identified?</u> *Shield *I.D. card *Verbal <u>Additional circumstances/factors (check all that apply)</u> *Report from victim/witness *Area has high incidence of reported offense of type under investigation *Time of day, day of week, season corresponding to reports of criminal activity *Suspect is associating with persons known for their criminal activity *Proximity to crime location *Evasive, false or inconsistent response to officer's questions *Changing direction at sight of officer/flight *Ongoing investigations (e.g., robbery pattern) *Sights and sounds of criminal activity (e.g., bloodstains, ringing alarms) *Other (describe)	Use of Force?: *Hands on suspect *Suspect on ground *Pointing firearm at suspect *Handcuffing suspect *Suspect against wall/car *Drawing firearm *Baton *Pepper spray *Other (describe)
Pittsburgh Bureau of Police, PA	Optional	CCR number		
	[1] Information for ACLU, California Legislative Analyst's Office, DOJ, and PERF are general recommendations for police agencies.			
	* Denotes one of a list of options			
	Notes. Any special instructions are presented in bold.			

APPENDIX E: RIDE-ALONG SURVEY INSTRUMENT WITH SUMMARY STATISTICS

(see the following pages)

Date _____ **Observer #** _____

Time _____ **Observation #** ____

Reporting District _____ **FDR#**_____

Division _____

LOS ANGELES POLICE DEPARTMENT RIDE-ALONG STUDY

INSTRUCTIONS: This form asks for information about each time an officer forms suspicion, stops, or searches a suspect. This ride-along instrument should be filled out each time the officer forms a suspicion or follows a suspect, either in a vehicle or on foot (even if the officer decides not to stop the suspect). All the information on this form is incident specific. An officer may give different reasons for different incidents and use different decision-making criteria. *Record only the information given during this specific incident of "suspicion."* [***Bold Italics indicate Summary Statistics***]

A. <u>Context:</u>

1. From your observation, what type of suspicion is involved? (circle)
   a. traffic violation ***115 (44%)***
   b. criminal suspect ***68 (26%)***
   c. pedestrian violation ***29 (11%)***
   d. victim ***20 (8%)***
   e. other complainant ***32 (12%)***
   other - explain:_____

   _____

2. From your observation, did the suspicion involve: (circle one)

   a. driver ***116 (45%)***
   b. passenger ***6 (2%)***
   c. pedestrian ***137 (53%)***

3. Did the officer receive any information about the status of the vehicle/driver/passenger/pedestrian before the officer became suspicious? (circle one)

   a. yes ***106 (40%)***
   b. no ***158 (60%)***

   If yes, what information was given to the officer about the vehicle or the pedestrian, and how was it received? (e.g. radio call, conversation, roll call).

   _____

   _____

4. From your observation, did the officer personally observe the events that led to the suspicion? (circle one)

   a. yes *153 (58%)*
   b. no *111 (42%)*

5. Was the location: (circle one)

   a. public *202 (77%)*
   b. private *62 (23%)*

6. How does the officer describe the predominant racial/ethnic makeup of the location where the observation occurred? (circle one)

   a. White *49 (19%)*
   b. Black *53 (20%)*
   c. Hispanic *92 (35%)*
   d. Asian *3 (1%)*
   e. American Indian *0 (0%)*
   f. None of the above (specify) ____*67 (25%)*_____

7. From your observation, which category best describes the location where suspicion was formed or the stop occurred? (circle one)

   a. residential *104 (39%)*
   b. commercial *95 (36%)*
   c. mixed *64 (24%)*
   d. other (e.g. park, transportation corridor) (specify) ___ *1 (0%)*_____

8. Officer's perception of the amount of gang activity at the location: (circle one)

   a. high *100 (38%)*
   b. medium *78 (30%)*
   c. low *63 (24%)*
   d. none *23 (9%)*

9. Officer's perception of the amount of crime at the location: (circle one)

   a. high *122 (46%)*
   b. medium *73 (28%)*
   c. low *63 (24%)*
   d. none *6 (2%)*

10. Officer's perception of the amount of drug activity at the location: (circle one)

   a. high *130 (49%)*
   b. medium *58 (22%)*
   c. low *61 (23%)*
   d. none *14 (5%)*

B. Suspicion

11. How many persons were in the vehicle or how many pedestrians (associated with suspect) were visible when the officer first formed suspicion or observed a violation?

i. Officer_____	ii. Observer_____
mean: 0.72	***mean: 0.56***
median: 0	***median: 0***

12. Determination of gender of the suspect(s) when the officer first formed suspicion or observed a violation? (circle the best answer)

i. Officer		**ii. Observer**	
Driver/passenger/pedestrian:		Driver/passenger/pedestrian:	
a. Male	***137 (52%)***	a. Male	***126 (48%)***
b. Female	***36 (14%)***	b. Female	***33 (13%)***
c. Transgender	***0 (0%)***	c. Transgender	***0 (0%)***
d. Unable to determine	***89 (34%)***	d. Unable to determine	***103 (39%)***

13. Determination of the driver's/passenger's/pedestrian's descent when the officer first formed suspicion or observed a violation? (circle the best answer)

i. Officer		**ii. Observer**	
a. White	***24 (9%)***	a. White	***23 (9%)***
b. Black	***55 (21%)***	b. Black	***47 (18%)***
c. Hispanic	***56 (21%)***	c. Hispanic	***57 (22%)***
d. Asian	***4 (2%)***	d. Asian	***3 (1%)***
e. American Indian	***0 (0%)***	e. American Indian	***0 (0%)***
f. None of the above:	___***0 (0%)***___	f. None of the above:	___***0 (0%)***__
g. Unable to determine	***123 (47%)***	g. Unable to determine	***132 (50%)***

14. When the officer first formed suspicion or observed a violation, could you (the observer) see from the police car what the suspect was wearing? (circle one)

a.	yes	***68 (26%)***
b.	no	***193 (74%)***

If yes, describe the suspect's clothes (e.g. formal, casual, sloppy, dirty).

_____

_____

15. Did the suspect have or wear any distinctive clothing/ornaments/tattoos/hair (e.g. gang colors or paraphernalia) that were identifiable when the officer first formed suspicion or observed a violation? (circle one)

i. Officer:

a. yes *20 (8%)*
b. no *241 (92%)*

If yes, describe the suspect's distinctive clothes/ornaments/tattoos.

_____

_____

ii. Observer:

a. yes *12 (5%)*
b. no *249 (95%)*

If yes, describe the suspect's distinctive clothes/ornaments/tattoos.

_____

_____

C. Stop

16. Did the officer stop the vehicle/pedestrian?

a. yes *186 (70%)*
b. no **(If no, questionnaire is complete)** *78 (30%)*

17. Determination of gender of the driver/passenger/pedestrian when the officer initiated the stop? (circle the best answer)

i. Officer

Driver/passenger/pedestrian:

a. Male *124 (67%)*
b. Female *47 (25%)*
c. Transgender *0 (0%)*
d. Unable to determine *15 (8%)*

ii. Observer

Driver/passenger/pedestrian:

a. Male *117 (63%)*
b. Female *43 (23%)*
c. Transgender *0 (0%)*
d. Unable to determine *26 (14%)*

18. Determination of the driver's/passenger's/pedestrian's descent when the officer initiated the stop. (circle the best answer)

i. Officer		ii. Observer	
a. White	*40 (22%)*	a. White	*35 (19%)*
b. Black	*49 (26%)*	b. Black	*41 (22%)*
c. Hispanic	*57 (31%)*	c. Hispanic	*52 (28%)*
d. Asian	*4 (2%)*	d. Asian	*4 (2%)*
e. American Indian	*1 (1%)*	e. American Indian	*0 (0%)*
f. None of the above:	*4 (2%)*	f. None of the above:	*0 (0%)*
g. Unable to determine	*31 (17%)*	g. Unable to determine	*54 (29%)*

19. From the observer's perspective, length of time between initial observation and initiation of stop:
_____ sec/min (circle) ***mean: 2.00; median: 0.50***

20. From the observer's perspective, total duration of stop:
_____ sec/min (circle) ***mean: 18.21; median: 11.00***

21. From the observer's perspective, describe the vehicle that was stopped:

a. Make _____
b. Model _____
c. Year _____
d. Color: _____
e. Distinctive features of the automobile (e.g. condition, loud music, extra lights, tinted windows, distinguishing markings, etc.)

_____

_____

22. Did the perception of the driver's/passenger's/pedestrian's descent change after the officer contacted the suspect?

i. Officer: (circle one)

a. yes	*29 (16%)*
b. no	*157 (84%)*

If yes, what is the officer's perception after contact with the suspect? (circle one)

a. White	*14 (48%)*
b. Black	*5 (17%)*
c. Hispanic	*8 (28%)*
d. Asian	*1 (3%)*
e. American Indian	*0 (0%)*
f. None of the above:	*1 (3%)*

ii. Observer: (circle one)

a. yes *33 (18%)*
b. no *153 (82%)*

If yes, what is the officer's perception after contact with the suspect? (circle one)

a. White *13 (39%)*
b. Black *8 (24%)*
c. Hispanic *10 (30%)*
d. Asian *1 (3%)*
e. American Indian *0 (0%)*
f. None of the above: _____ *1 (3%)*____

23. Distinctive features of the driver/passenger/pedestrian (e.g. gang clothing or paraphernalia, hair, tattoos, clothing, shoes). If none, so state:

Officer:_____

Observer:_____

D. <u>Searching the Vehicle/Suspect</u> (Fill out this section by checking the appropriate response if the vehicle/suspect was **searched** by the officer. If the officer did not search the vehicle/suspect, go to Section E.)

24. From the perspective of the observer, did the officer conduct a pat-down or frisk? (check the appropriate box for driver, passenger, and pedestrian)

	Yes	No	Unknown	*Not applicable*
Driver	*19 (10%)*	*89 (48%)*	*0 (0%)*	**78 (42%)**
Passenger	*7 (4%)*	*18 (10%)*	*0 (0%)*	**161 (87%)**
Pedestrian	**47 (25%)**	**29 (16%)**	**2 (1%)**	**108 (58%)**

25. From the perspective of the observer, did the officer conduct a search? (check the appropriate box for vehicle, driver, passenger, and pedestrian)

	Yes	No	Unknown	*Not applicable*
Vehicle	*17 (9%)*	*90 (48%)*	*1 (1%)*	**78 (42%)**
Driver	*6 (3%)*	*102 (55%)*	*0 (0%)*	**78 (42%)**
Passenger	*2 (1%)*	*23 (12%)*	*0 (0%)*	**161 (87%)**
Pedestrian	**25 (13%)**	**51 (27%)**	**2 (1%)**	**108 (58%)**

26. From the perspective of the observer, did these searches appear to be voluntary? (check the appropriate box for vehicle, driver, passenger, and pedestrian)

	Yes	No	Unknown	*Not applicable*
Vehicle	*8 (4%)*	*3 (2%)*	*7 (4%)*	**168 (90%)**
Driver	*4(2%)*	*1 (1%)*	*1 (1%)*	**180 (97%)**
Passenger	*2(1%)*	*0 (0%)*	*0 (0%)*	**184 (99%)**
Pedestrian	**15 (8%)**	**4 (2%)**	**8 (4%)**	**159 (85%)**

E. Result of the Stop

27. From the perspective of the observer, result of the suspicion/stop: (circle)

i. Did the suspect offer verbal resistance?	a. Yes	b. No	c. Unknown
	11 (6%)	*170 (91%)*	*5 (3%)*
ii. Did the suspect offer physical resistance?	a. Yes	b. No	c. Unknown
	4 (2%)	*181 (97%)*	*1 (1%)*
iii. Was force used?	a. Yes	b. No	c. Unknown
	4 (2%)	*182 (98%)*	*0 (0%)*
iv. Was the person issued a warning?	a. Yes	b. No	c. Unknown
	36 (19%)	*149 (80%)*	*1 (1%)*
v. Was the person issued a ticket?	a. Yes	b. No	c. Unknown
	94 (51%)	*91 (49%)*	*1 (1%)*
vi. Was the person arrested?	a. Yes	b. No	c. Unknown
	36 (19%)	*149 (80%)*	*1 (1%)*

F. Demeanor

Initial Contact

28. In your opinion, was the officer's **initial** demeanor (that is, their attitude/behavior) positive, neutral, or negative? (circle one)

	Examples	
a. Positive	Polite, friendly, informative	*129 (69%)*
b. Neutral	Uneventful, unremarkable	*53 (28%)*
c. Negative	Rude, angry, unwarranted aggression	*2 (1%)*
d. Unknown		*2 (1%)*

29. In your opinion, did the officer act in any way or do anything that negatively impacted the demeanor of the suspect in the initial contact? (circle one)

a. Yes	*1 (1%)*
b. No	*180 (97%)*
c. Unknown	*5 (3%)*

If yes, what exactly did the officer do? Be specific.

_____

_____

30. In your opinion, was the suspect's initial demeanor (that is, their attitude/behavior) positive, neutral, or negative? (circle one)

	Examples	
a. Positive	Polite, compliance with officer orders	*90 (48%)*
b. Neutral	Uneventful, unremarkable	*62 (33%)*
c. Negative	Rude, non-cooperative, non-compliant with officer orders, confrontational, physical aggression, suspicious/secretive conduct	*14 (8%)*
d. Unknown		*20 (11%)*

31. In your opinion, did the suspect act in any way that negatively impacted the demeanor of the officer during the initial contact? (circle one)

a. Yes	*8 (4%)*
b. No	*164 (88%)*
c. Unknown	*14 (8%)*

If yes, what exactly did the suspect do? Be specific.

_____

_____

_____

_____

During the Encounter

32. In your opinion, did the officer's demeanor change during the encounter? (circle one)

a. Yes	*8 (4%)*
b. No	*176 (95%)*
c. Unknown	*2 (1%)*

33. If yes, which of the following best describes the change? (circle one)

From:	a. Positive to Neutral	*2 (25%)*
	b. Positive to Negative	*1 (13%)*
	c. Neutral to Positive	*3 (38%)*
	d. Neutral to Negative	*1 (13%)*
	e. Negative to Neutral	*0 (0%)*
	f. Negative to Positive	*1 (13%)*

Explain why you describe the change in this way. _____

_____

_____

34. In your opinion, did the suspect's demeanor change during the encounter? (circle one)

a. Yes	*16 (9%)*
b. No	*157 (84%)*
c. Unknown	*13 (7%)*

35. If yes, which of the following best describes the change? (circle one)

From:	a. Positive to Neutral	*2 (13%)*
	b. Positive to Negative	*2 (13%)*
	c. Neutral to Positive	*3 (19%)*
	d. Neutral to Negative	*3 (19%)*
	e. Negative to Neutral	*6 (38%)*
	f. Negative to Positive	*0 (0%)*

Explain why you describe the change in this way. _____

_____

_____

Final Outcome

36. In your opinion, was the officer's final demeanor (that is, their attitude/behavior) positive, neutral, or negative? (circle one)

		Examples	
a.	Positive	Polite, friendly, informative	*136 (73%)*
b.	Neutral	Uneventful, unremarkable	*50 (27%)*
c.	Negative	Rude, angry, unwarranted aggression	*0 (0%)*
d.	Unknown		*0 (0%)*

37. In your opinion, was the suspect's final demeanor (that is, their attitude/behavior) positive, neutral, or negative? (circle one)

		Examples	
a.	Positive	Polite, compliance with officer orders	*97 (52%)*
b.	Neutral	Uneventful, unremarkable	*67 (36%)*
c.	Negative	Rude, non-cooperative, non-compliant with officer orders, confrontational, physical aggression, suspicious/secretive conduct	*7 (4%)*
d.	Unknown		*15 (8%)*

38. If you observed any change in the officer's behavior from the initial contact to the final outcome, ask the officer what he was concerned about during the encounter, what he was thinking about, and what he saw the suspect do or say that concerned him/her (and may have influenced his/her actions or behavior). Explain in detail.

_____

_____

G. **Officer's Assessment of the Stop/Search** (Answer only if a stop occurred, and request information from the officer). Circle the most appropriate response.

39. How did the officer assess the overall cooperation of the suspect(s)? (circle one)
    a. Very Cooperative *62 (33%)*
    b. Cooperative *92 (49%)*
    c. Neutral *19 (10%)*
    d. Uncooperative *10 (5%)*
    e. Very Uncooperative *3 (2%)*

40. How did the officer assess the overall attitude of the suspect(s)? (circle one)
    a. Very Respectful *48 (26%)*
    b. Respectful *93 (50%)*
    c. Neutral *35 (19%)*
    d. Disrespectful *9 (5%)*
    e. Very Disrespectful *1 (1%)*

41. Ask the officer to explain why he or she formed these opinions? (Please explain).

_____

_____

_____

I. **Officer Demographics**

42. Officer's Gender: (circle one)

    a. Male *154 (83%)*
    b. Female *32 (17%)*

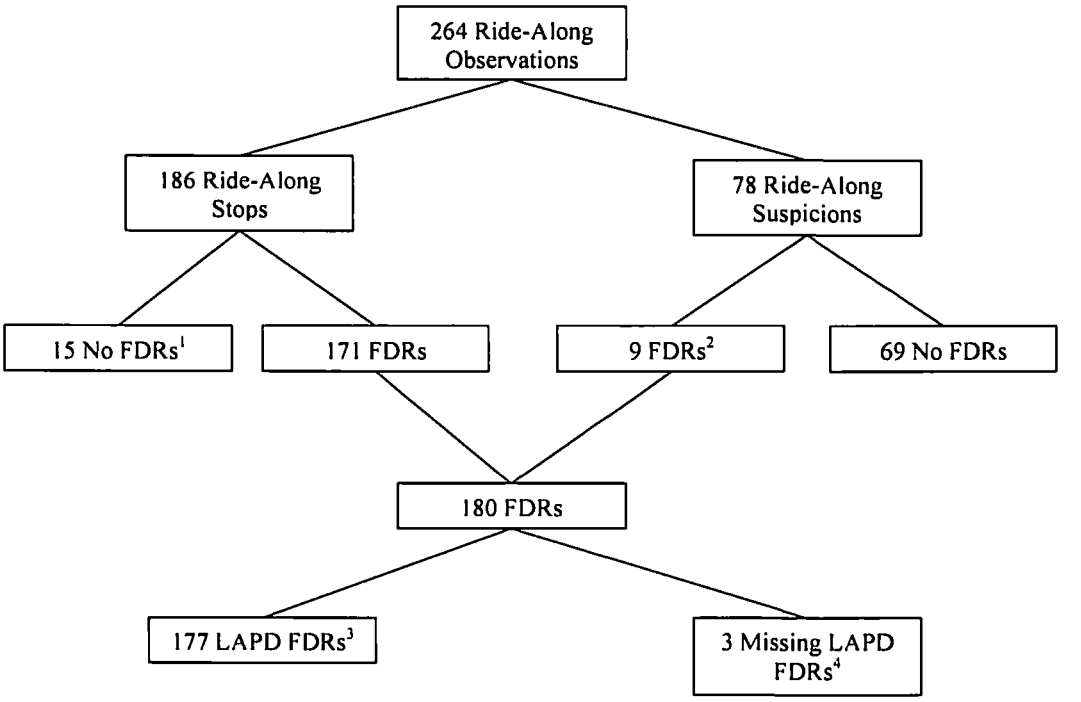
43. Years in the Department: _____ years. ***mean: 7.52; median: 8.00***

44. Officer's highest degree: (circle one)

    a. High School Diploma *40 (22%)*
    b. Associate Degree (2 year degree) *83 (45%)*
    c. Bachelor Degree (4 year degree) *62 (33%)*
    d. Masters Degree or higher *1 (1%)*

45. Officer's descent: (circle one)
    a. White *81 (44%)*
    b. Black *25 (13%)*
    c. Hispanic *65 (35%)*
    d. Asian *9 (5%)*
    e. American Indian *0 (0%)*
    f. None of the above:_____ *6 (3%)*

APPENDIX F: DIAGRAM OF RELATIONSHIP BETWEEN RIDE-ALONG OBSERVATIONS AND FDR DATA



Notes: [1] Not all ride-along stops were defined as stops by the LAPD and therefore FDRs were not completed in these instances.
[2] Some ride-along suspicions were defined as "stops" by the LAPD and therefore FDRs were completed.
[3] The 177 LAPD FDRs included 168 ride-along stops and the 9 FDRs that were counted as ride-along suspicions.
[4] FDR booklets containing the stop forms for the three missing stops could not be found by the LAPD.

APPENDIX G: SEARCH AND CONTRABAND MATRICES

Search Matrix

1-Consent, 2-Incident to Arrest, 3-Impound Authority, 4-Probable Cause, 5-Parole/Probation, 6-Reasonable Suspicion, 7-Other, A-Visible Contraband, B-Odor of Contraband

Person	__1	__2	__3	__4	__5	__6	__7	__A	__B
Vehicle	__1	__2	__3	__4	__5	__6	__7	__A	__B
Container	__1	__2	__3	__4	__5	__6	__7	__A	__B

Contraband Matrix

1-Alcohol, 2-Drugs, 3-Money, 4-Weapons, 5-Vehicle, 6-Other Evidence of Crime, 7-Other Property

Person	__1	__2	__3	__4	__5	__6	__7
Vehicle	__1	__2	__3	__4	__5	__6	__7
Container	__1	__2	__3	__4	__5	__6	__7

APPENDIX H: ADDITIONAL OBSERVATIONS AND COMMENTS ON LAPD DATA COLLECTION PROTOCOL

H.1 FDRs for All Detainees

Currently, the LAPD completes an FDR for all persons who are legally detained. This includes drivers in motor vehicle stops, pedestrians who are stopped based on reasonable suspicion or probable cause, and vehicle passengers when officers have independent grounds for detaining them. However, the typical motor vehicle stop in the City of Los Angeles does not involve the detention of passengers. From July through December 2003, the LAPD detained only 13,277 passengers, which compares to more than 250,000 drivers who were detained. This represents a driver to passenger detention ratio of 19:1.

H.1.1 Motor Vehicle Stops

First-generation data collection protocols typically captured demographic, search, and arrest information only for the driver of the vehicle that was stopped. As racial profiling research and analysis evolved, researchers began recognizing that gathering data on the *primary focus or target* of the stop provided a better analytic approach. For most motor vehicle stops, the driver is the primary target of the stop, usually because he or she committed a moving traffic violation or because the driver is held responsible for the proper maintenance, registration, and licensing requirements for the vehicle. On occasion, however, a passenger may be the focus of the stop. A passenger may not be wearing a seatbelt, for example, or may be engaged in suspected criminal behavior visible to an officer on patrol. In that case, the passenger, rather than the driver, would be the subject of racial profiling-related data collection under a protocol that requires capturing information on the person who was the primary focus of the stop.

Limiting data collection to the primary focus of a motor vehicle stop may make sense for the LAPD. First, this approach comports with the current thinking on racial profiling data collection and mirrors other data collection protocols currently in use. For example, the Spokane Police Department (Washington), which was a recent recipient of COPS office funding to develop a comprehensive racially biased policing data collection strategy, gathers information only on the primary focus of a stop. Second, such an approach properly channels data collection efforts onto the party that first drew the attention of the police and who was the subject of a discretionary decision to initiate a stop. At the same time, this approach eliminates unnecessary data collection that adds only slightly to the number

of cases available for analysis – passengers comprised just 5 percent of the total FDRs completed by the LAPD on motor vehicle stops during the latter half of 2003. As with calls for service, requiring data collection for all motor vehicle stop detainees may be overly burdensome given the marginal advantages that such an approach affords.

H.1.2 Pedestrians

As with motor vehicle stops, the current data collection protocol mandates that an FDR be completed for each pedestrian detained by the LAPD, with a few exceptions. Among the racially biased policing data collection efforts with which Analysis Group is familiar, the LAPD approach to pedestrians is quite broad. Many law enforcement agencies that collect racial profiling data do not even mandate data collection for pedestrians. In group-stop situations, some agencies, like the Spokane Police Department, limit the requirement for completion of a pedestrian stop form to the *primary focus or target* of the stop. It is not unusual for the police to stop groups of people who may be in the same vicinity, particularly in cities that have active street gangs. Requiring police to complete FDRs for all persons present in such situations is quite burdensome and may not be worth the effort in terms of data or the substantive questions that can be addressed with them.

Furthermore, collecting data on all persons detained in group settings may create a data set that is more reflective of differing social habits among certain groups than of actual police stop practices. If, for example, some populations are more likely to congregate in groups (as opposed to singly or in pairs) than others, then requiring police to complete FDRs for all persons in a group who were stopped may provide a misleading picture of police stop activity for pedestrians. Although police may make a similar number of *stops* involving persons of different racial groups, the overall number of *persons* stopped may be greater for some racial populations than for others because those populations may tend to gather in larger groups and in locations where they are more likely to come in contact with the police. The same also may be true for the number of persons stopped per automobile. Subsequent analysis may shed further light on this issue and may allow us to make more definitive recommendations on the completion of FDRs for pedestrians detained in group settings.

APPENDIX I: BIOGRAPHIES OF ANALYSIS GROUP PROJECT TEAM MEMBERS

(see the following pages)

Geoffrey P. Alpert, Ph.D.
Academic Affiliate, Analysis Group, Inc.
Professor, Department of Criminology & Criminal Justice, University of South Carolina
Ph.D. Sociology, Washington State University; M.A., B.A., University of Oregon

Dr. Alpert is a nationally recognized expert on police violence, pursuit driving, and training. He is a professor of Criminal Justice and the Department Chair for the Department of Criminology and Criminal Justice at the University of South Carolina. He teaches courses in research methods and policing.

For the past 20 years, Dr. Alpert has concentrated his research and training on the evaluation of high-risk police activities, including the use of force, deadly force, pursuit driving, and accountability systems. Dr. Alpert is currently researching police use of force to control suspects and is evaluating criminal domestic violence courts. Both endeavors are funded by the National Institute of Justice. He is also directing a study of racial profiling in Miami-Dade County, Florida. He has recently completed a national study on pursuit driving, also funded by the National Institute of Justice. Dr. Alpert also assists police departments by writing and evaluating policies, training, and accountability systems.

Elizabeth Becker, Ph.D.

Managing Principal, Analysis Group, Inc.

Ph.D., M.A., Applied Economics, Clemson University; B.A. Economics and Political Science, University of Wisconsin-Madison

Dr. Becker's main area of expertise is employment-related litigation support and consulting. She has prepared economic and statistical analyses in numerous class action matters involving allegations of age, sex, race, and national origin discrimination in a wide variety of employment practices. Dr. Becker also assists clients with the preparation of pay equity studies in response to OFCCP glass ceiling audits, with quantitative assessments of FLSA compliance, and with adverse impact analyses of workforce reductions.

Dr. Becker has also applied sophisticated statistical techniques to questions of fair lending and police race profiling. Prior to joining Analysis Group, Dr. Becker was Principal and Director of the Employment Economics practice at PricewaterhouseCoopers. While at PricewaterhouseCoopers, she coordinated a review and critique of the New York State Office of Attorney General's study of the stop-and-frisk practices of the New York City Police Department.

Her research on labor economics, public finance, and gender differences in compensation has been presented at regional, national, and international professional conferences, and has been published in several peer-reviewed journals.

Alan P. Meister, Ph.D.

Manager, Analysis Group, Inc.

Ph.D., M.A., B.A., Economics, University of California, Irvine

Dr. Meister is an economist specializing in the application of economics to complex business issues and commercial litigation. His areas of expertise include economic impact analyses, economic planning and policy, antitrust, regulation, statistics, and the calculation of economic damages in commercial litigation.

With regard to his statistics work, Dr. Meister has conducted sophisticated regression analysis, statistical testing, and survey analysis. He has served as an expert regarding the use of statistics in forensic analysis and skill-versus-chance assessments of amusement and casino games. Dr. Meister also has designed and implemented surveys. Prior to joining Analysis Group, Dr. Meister worked for a market research firm that implemented surveys for the motion picture industry. In addition, he was a teaching assistant for five years at the University of California, Irvine, where he taught courses on statistics, probability, econometrics, and survey design.

Dr. Meister has extensive experience conducting economic impact studies. He combines his expertise with impact analysis, planning, market analysis, statistics, and survey analysis to identify and measure the effects of proposed, existing, and ceasing economic activity. His work has involved casinos, hotels, resorts, sporting and entertainment events, retail establishments, medical research, publicly-funded projects, and ballot initiatives. Most notable has been his authoritative research on Indian gaming. He has received national recognition for his annual studies on the economic impact of Indian gaming in the United States. His work is regularly cited by the press and relied upon by the gaming industry, governments, and the investment community. He also has written extensively on the subject and presented his work at various academic, professional, and industry conferences. In addition, he has testified before the California State Senate regarding Indian gaming issues.

Michael R. Smith, Ph.D., J.D.
Academic Affiliate, Analysis Group, Inc.
Associate Professor and Graduate Program Director, Department of Criminology & Criminal Justice, University of South Carolina
Ph.D. School of Justice Studies, Arizona State University; J.D. University of South Carolina School of Law; B.S. Administration of Justice, Virginia Commonwealth University

Dr. Smith is an Associate Professor in the Department of Criminology and Criminal Justice at the University of South Carolina, where he serves as the Graduate Program director. He teaches courses on policing, criminal law and procedure, and civil liberties. Dr. Smith is also a former police officer.

Dr. Smith's primary areas of expertise include racial profiling, police use of force, pursuits, and civil rights. He has participated in a variety of police-related research and evaluation projects, including racial profiling studies for the Miami-Dade Police Department (Florida), the Washington State Patrol (Washington), the Spokane Police Department (Washington), and the Richmond Police Department (Virginia). In addition, Dr. Smith serves as a consultant to the United States Justice Department on racial profiling-related matters and has provided racial profiling methodology training to law enforcement executives from across the nation. His recent publications have appeared in Police Quarterly, Journal of Criminal Justice, and Justice Quarterly.

Bruce A. Strombom, Ph.D.

Managing Principal, Analysis Group, Inc.

Ph.D. Economics, University of California, Irvine; B.A. Economics, San Jose State University, San Jose

Bruce Strombom is an expert in applied microeconomics and statistics. He specializes in the application of economics and econometrics to a range of legal and public policy issues. He provides assistance to attorneys in all phases of pretrial practice, prepares economic models, assesses questions of liability, estimates damages, provides expert testimony and critiques the analyses of opposing experts. Dr. Strombom has conducted analyses in cases involving antitrust, intellectual property, fraud, securities valuation, and contract issues. He has valued privately held companies and ownership interests in firms in a range of industries for both litigation and mergers and acquisitions. Within the health care sector, Dr. Strombom has broad experience in litigation support and policy analysis. He has examined the competitive impact of mergers in markets for hospital and medical testing laboratory services, analyzed the impact of managed care on markets for medical services, and evaluated the medical billing and claims payment practices of health care providers and insurers.

Prior to joining Analysis Group, Dr. Strombom was Executive Vice President of a middle-market merger and acquisition firm. Previously, he was Consulting Manager at Price Waterhouse, where he provided litigation support and value enhancement consulting services, and Senior Financial Analyst at the Tribune Company, where he evaluated capital projects and acquisition candidates. Dr. Strombom holds a Ph.D. in economics from the University of California, Irvine, and a B.A. degree from San Jose State University.