Police Pursuits In An Age Of Innovation And Reform

The IACP Police Pursuit Database

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Table of Contents

Tables

Figures

1 Introduction

The IACP Police Pursuit Database

Since the 1980s, the International Association of Chiefs of Police (IACP) has been at the forefront of policy reform in the area of police vehicular pursuits. Notably, Geoffrey Alpert, one of the leading researchers of police pursuits, described the IACP's creation of its *Vehicular Pursuit Model Policy*[1] as a "significant reform" in this area of police managerial policy (see Alpert et al., 1996: I-4). At the same time, Alpert emphasized that more efforts were needed, highlighting the lack of nation-wide, multijurisdictional data and information collection systems about vehicular pursuits to better inform pursuit policies. Following that report, the National Institute of Justice's Office of Science and Technology formed the Pursuit Management Task Force (PMTF) to further examine police pursuits. Among the PMTF's many recommendations,[2] it suggested that law enforcement agencies needed "a national model for collection of pursuit statistics…perhaps through the IACP or similar professional law enforcement organization, for the purpose of encouraging and facilitating research and to expand the body of knowledge relating to pursuits" (Bayless and Osborne, 1998: 63).

In response to this need, the IACP, under its *Cutting Edge of Technology Project*,[3] began the Police Pursuit Database Project in 2000. The goal of this project was to create an internet-based, interactive computerized reporting system by which police agencies could submit and manage reports of vehicular pursuits and in turn, access the full database for statistical reports compiled from all pursuits recorded in the database. Such a system could not only facilitate an individual agency's standardized recording of pursuits, but also a shared understanding among agencies of pursuit trends. In total, both of these benefits could help guide an agency's future managerial decisions, assessments, policy reforms, and training needs.

To build such a database, the IACP initiated an ad hoc advisory panel consisting of researchers, practitioners, and other experts of police pursuit policy. This panel considered pursuit definitions, collection standards, and a wide variety of fields and data elements that should be collected related to police pursuits. With their assistance, the IACP staff then created a prototype database and guidebook, and then sought participation by a wide variety of police agencies and jurisdictions to test the database. In 2004, the IACP released an interim report (see Nichols, 2004) describing the project's progress, and also an analysis of the contents of the 2,239 police pursuits that had been submitted to the database.

Since then, the IACP Police Pursuit Database Project has been finalized, culminating in the submission of thousands of additional pursuits and the completion of the testing of the database

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[1] See http://www.theiacp.org/documents/pdfs/Publications/VehicularPursuitPolicy.pdf . This document is also included in this report as Appendix A.

[2] The full report by Bayless and Osborne (1998) can be downloaded from the National Law Enforcement and Corrections Technology Center (http://www.nlectc.org/pdffiles/pmtf.pdf). Additionally, a Research Review Brief has been published about the report by the National Institute of Justice (see http://www.ncjrs.gov/pdffiles/fs000225.pdf).

[3] See http://www.theiacp.org/research/RCDTechCuttingEdge.html .

with 56 agencies. In 2007, the IACP contacted the George Mason University Administration of Justice Department, to commission the authors to write this final report. We describe the content of the now 7,737 police pursuits that have been submitted to this database, comment on the lessons learned from the development of the project, and present recommendations for its continued use.

Pursuit Policy in an Age of Innovation and Reform

The IACP Police Pursuit Database Project is particularly timely, as pursuit policy today is influenced by additional forces than those police faced in the 1970s, 1980s, or even the early 1990s. Factors which traditionally motivated reform in this area drew attention to two often-competing values: apprehending and deterring those who break the law, and ensuring the safety of all parties that potentially could be involved (Alpert et al., 2000). This balance of crime control with safety and liability is a recurrent theme not only in police pursuits but many other activities of which a democratic and modern police agency is engaged. Such a balance, as Professor Alpert has most recently pointed out,[4] can be detected in the evolution of the many legal decisions regarding police pursuits as well as in police pursuit policies.

While thinking about this balance is essential in developing pursuit policy, an additional, compelling factor makes discussions of police pursuits especially timely in today's policing environment. Specifically, there has been an increased demand and use of more proactive deployment and managerial policing innovations since the 1990s. Such innovations include directed (hot spots) patrol, problem-oriented policing, COMPSTAT, crime analysis, information-driven management, zero tolerance, community policing, and evidence-based policing, among others. These innovations change the use and symbolic meaning of police vehicles, in turn significantly altering the nature, frequency, risk, and consequences of high-speed pursuits. It is in both of these contexts – concerns of the balance between deterrence and safety, and the demands of proactive police innovations – that we frame this report.

The Content of This Report

In this final report, we detail IACP's endeavors in developing the Police Pursuit Database in light of these dual concerns. Thus, not only will we analyze the current data collected by the IACP, but we will also provide a review of existing studies of police pursuits, a discussion of contemporary pursuit policies, and present a broader framework for thinking about pursuits in an age of innovation and reform. In Section 2, we begin by offering an argument as to why this topic is especially relevant in *today's* proactive policing environment of COMPSTAT, crime analysis, problem-solving, evidence-based policing, community policing, hot spot patrol and quality of life policing. Placing the discussion of police pursuits in this current context emphasizes and acknowledges that police policy does not occur in a vacuum and must be constantly informed and re-assessed by data, information, and the demands and challenges that police face.

[4] Dr. Alpert discussed this balance when giving the annual Police Foundation *Ideas in American Policing* lecture (February 18, 2008, Washington, D.C.). His lecture was entitled "Police Pursuits after *Scott v. Harris*: Far from Ideal?", and explored the evolution of police pursuit court cases (see also Alpert and Smith, 2008).

Given this new environment, we then examine what evidence does exist regarding police pursuits in Section 3 by reviewing the empirical research in this area. This review provides police managers not only with specific references to existing studies for their reference, but also a general understanding across these studies of what is currently known about the nature, characteristics, and outcomes of reported high-speed vehicular pursuits. This body of research also illustrates how concerns of safety, liability, and police professional management have been the primary force in motivating pursuit research, as opposed to new challenges and demands of proactivity.

We then proceed in Section 4 with a content analysis of a sample of pursuit policies from 77 police agencies in the United States in 2007. Indeed, there have been surveys of pursuit policies conducted in the past (see Alpert et al., 1996; Hicks, 2006; Sharp, 2003), and we offer this analysis to present a recent update. To do this, we selected a group of police agencies who participated in the most recently published Law Enforcement Management and Administrative Statistics Survey (LEMAS) conducted by the Bureau of Justice Statistics using a stratified random sampling approach and requested current written pursuit policies from the heads of those agencies. We then examine and report upon key elements of these policies to highlight the trends of current pursuit practices.

The database, its participants during this testing phase, and the pursuit data itself, are then discussed and analyzed in Section 5. Although the agencies which contributed to the database during this testing phase are not a representative sample of all police agencies in the United States (as participation in submitting pursuits to the IACP database was voluntary), the pursuit records collected offer a glimpse into pursuit trends and patterns, with information related to suspects, the police officers involved, the nature of the pursuits and their outcomes. Although it is clear that the IACP data have limitations, compared to other empirical analyses that we found, it is one of the larger samples of pursuit data collected and covers a comparatively large number of agencies across thirty states.

Ultimately, the analysis of the IACP data is conducted to improve the use of the database as the project moves forward. Thus, in addition to analyzing the data set to unearth its limitations, we also compare characteristics of the participating agencies with recently collected information about U.S. law enforcement agencies more generally, to understand what types of police departments would be most likely to participate in such an endeavor and who the IACP should direct its focus to increase the use of the database. The 56 participating agencies also completed a small survey conducted by the IACP in 2005 about their experiences using the database, the results of which we present in Section 5. Section 6 then provides the lessons learned from the development and use of the database during this testing phase closing with conclusions and recommendations for both the IACP and also for police agencies.

2 The Continuing Importance of Police Pursuit Discourse

On-going Concerns: Crime Control, Safety, and Liability

Perhaps the most compelling, on-going, and logical reason for law enforcement's continued interest in high-speed vehicular pursuits has been its concern in balancing the values of crime control and offender apprehension with ensuring the safety of all parties who potentially might be involved – police officers, suspects, victims, bystanders, and the community (Alpert et al., 1996; Alpert et al., 2000; Alpert and Smith, 2008). Achieving this balance is evident in many police practices and policies in democracies, and is often at the center of debates about the nature, function, and powers of a democratic and modern police service. And, with the advent of improved data collection and accountability systems, it has become easier for both the police and those outside of police organizations to track, monitor, and evaluate whether the police are successful in achieving this balance.

As Alpert has recently re-emphasized (Alpert, 2008; Alpert and Smith, 2008), such a balancing act was articulated by the famous *Tennessee vs. Garner*[5] case, which involved an officer using deadly force to stop a fleeing suspect. Because of *Garner,* as well as even earlier concerns regarding safety and liability, American police have tended to adopt more restrictive pursuit policies, balancing the need to apprehend a fleeing suspect with the possible consequences that might occur to suspects, bystanders, and the police during that process. Restrictive policies are those which allow pursuits to be continued in specific situations or under careful supervision, usually when a more serious crime had been committed or, in the case of the IACP's Model Policy, when a custodial arrest will potentially occur.

Many subsequent court cases since *Garner* have reflected this balance, deliberating whether the police could be held liable for the injuries sustained by fleeing suspects or others when the police engage in a pursuit. While a review of the history and evolution of case law related to police vehicular pursuits is beyond the scope of this report and has been conducted by others (see e.g., Alpert and Smith, 2008; Alpert et al., 2000; Bayless and Osborne, 1998), a number of cases illustrate the difficulty in establishing this balance:

> ***Galas v. McKee* (1986):**[6] The 6th Circuit Court of Appeals of the United States reviewed a Tennessee case, which questioned whether police could pursue traffic violators. In that case, the officer had pursued a 13 year old traffic offender who had been driving over 100 mph. The pursuit ended in a crash, and the 13 year old sustained permanent injuries. The court found in favor of the officer's decision to pursue, concluded that "the minimal intrusion on a traffic offender's Fourth Amendment right occasioned by the officer's participation in a high-speed pursuit does not outweigh a longstanding police practice which we consider essential to a coherent scheme of police powers."

[5] *Tennessee v. Garner,* 471 U.S. 1 (1985).
[6] *Galas v. McKee*, 801 F.2d.200 (6th Cir.1986).

***Brower v. County of Inyo* (1989):**[7] The U.S. Supreme Court found against the police for placing an 18-wheel truck behind a bend on a highway to blind a fleeing driver with its headlights, causing the driver to crash into the 18-wheeler. The Court found that this practice constituted an unlawful seizure, violating the driver's 4th Amendment rights.

***City of Canton, Ohio v. Harris* (1989):**[8] While this case did not directly involve police pursuits, its outcome has had implications for pursuit cases. The U.S. Supreme Court held that "the inadequacy of police training may serve as the basis for 1983 liability[9] only where the failure to train amounts to deliberate indifference to the rights of persons with whom the police come into contact." While this case did not directly involve police pursuits, this meant that police departments could be held accountable for failing to properly train officers in many practices.

***Fagan v. City of Vineland* (1994):**[10] The U.S. Court of Appeals for the Third Circuit reviewed a pursuit which had killed three people. In that case, officers had attempted to stop a vehicle to issue a warning to a passenger for hanging out of the roof of the vehicle. A high-speed chase ensued, with the fleeing vehicle eventually running a red light and colliding with pickup truck. Two people in the pickup truck were killed, along with one of the passengers in the fleeing vehicle. It was later found that the fleeing driver was both drunk and underage. A federal lawsuit was filed against the officers and the Vineland Police Department of New Jersey claiming that the failure to train and supervise officers in the conduct of police pursuits violated the 14th Amendment. The court found in favor of the police, stating that the conduct of the police in pursuit did not "shock the conscience" enough to be in violation of due process.

***County of Sacramento v. Lewis* (1998):**[11] In this case, the U.S. Supreme Court deliberated about an incident involving a speeding motorcyclist who had been chased by the police, subsequently crashing and being run over and killed by a patrol cruiser. The plaintiff argued that the officer violated pursuit policy and the motorcyclist's 14th Amendment rights to due process. The Court sided with the police, holding that "the issue in this case is whether a police officer violates the Fourteenth Amendment's guarantee of substantive due process by causing death through deliberate or reckless indifference to life in a high speed automobile chase aimed at apprehending a suspected offender. We answer no, and hold that in such circumstances only a purpose to cause harm unrelated to the legitimate object of arrest will satisfy the element of arbitrary conduct shocking to the conscience, necessary for a due process violation." The U.S. Court of Appeals for the 9th Circuit, in *Bingue v. Prunchak* (2008), applied the standard set by the Supreme Court in this case and also ruled in favor of the officer.

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[7] *Brower v. County of Inyo*, 489 U.S. 593 (1989).
[8] *City of Canton, Ohio v. Harris*, 489 U. S. 378 (1989).
[9] Section 1983 of the Civil Rights Act of 1871 allows citizens to sue persons who deprive them of their constitutional rights. Section 1983 actions can be brought against state officials in their personal capacity, but not in their official capacity. City, county, and other local officials can be sued in their official capacity, which allows damages to be obtained from the governmental entity, and in their personal capacity.
[10] *Fagan v. City of Vineland*, 22 F.3d 1283 (1994).
[11] *County of Sacramento v. Lewis*, 523 U.S. 833 (1998).

***Scott v. Harris* (2007):**[12] In order to stop a fleeing vehicle, the officer in this case rammed the rear of the vehicle, causing it to crash off-road. The driver of the fleeing vehicle was paralyzed and sued on 4th Amendment grounds, claiming the excessive use of force was an unlawful seizure. The U.S. Supreme Court, found in favor of the officer, ruling that the risk to pedestrians and other drivers on the road posed by the speeding vehicle was enough to justify the officer's actions. Further, the Court rejected the notion that police should adopt a policy of non-pursuit, noting the possible incentive to flee any time police attempted a traffic stop.

While *Scott v. Harris* (2007) may have ended claims for excessive force under the Fourth Amendment, Alpert suggested in his recent lecture that police agencies may continue to retain more restrictive policies, which some had even before *Garner*. His point is compelling, as it highlights how local community concerns can trump court rulings, a phenomenon which does not always characterize the relationship between court rulings and police practices. One only needs to examine media headlines about police pursuits, to gain a sense of this influence of the public's concern:

"Officer is indicted in deadly pileup on Beltway." *(The Washington Post, Washington D.C.)* A Prince George's County (Maryland) police officer was indicted for vehicular manslaughter for pursuing a speeding motorcyclist on the D.C. Capital Beltway which led to a fatal seven-car pileup (Greenwell, 2008).

"High-speed chases questioned." *(ABC11.com, North Carolina)* A police cruiser in North Carolina crosses the center line and crashes head-on to another vehicle. The police cruiser was not in pursuit, but was on a call (Gibbs, 2008).

"Pittsburgh sued over fatal police chase." *(The Pittsburgh Channel.com, Pennsylvania)* A police chase from 2005 is the subject of a recent lawsuit against the police. The fleeing suspect killed two and injured six, including children, in the crash (The Pittsburgh Channel, 2008).

"Crash cuts promising lives short." *(News-Record.com, North Carolina)* Eighteen and nine year old sisters were killed by a man fleeing the Franklington police. The man had a criminal record spanning 20 years with a half dozen DWI's (Elmquist, 2007).

"Newark officer is killed in crash while chasing suspect." *(The New York Times, New York)* A Newark Sergeant, Tommaso Popolizio, was killed in a collision with a fleeing suspect when his cruiser overturned (Holl and Fernandez, 2007).

"Cops forget the innocent in high speed chases." (*North County Times, California)* In Chicago, a 15 year old joy-rider was chased by police and collides with a van, killing 15 year old honor student, Kristi Priano. (Riehl, 2005).

"High speed pursuits banned." *(BBC News)* Police in East Yorkshire and Lincolnshire will no longer engage in high speed pursuits. Instead, alternative methods will be used to

[12] *Scott v. Harris*, 127 U.S. 1769 (2007).

stop fleeing vehicles such as the Stinger device (BBC News, 2003).

"Fatal Police Chase Ignites Rampage in Michigan Town." *(The New York Times, New York)* A motorcyclist is killed in a high-speed police chase, angering local residents. (Wilgoren, 2003).

In addition to legal liabilities and public concerns about citizen safety, police managers are also focused on ensuring the safety of their officers. The era of professional policing has led to a dramatic increase in the use of vehicles to facilitate the police function. No doubt a positive and modern development in policing, the increased use of vehicles has also had negative outcomes (for example, Moore (1992) discusses how patrol cars have isolated police from citizens). With regard to pursuits, one of these negative outcomes has been vehicular-related officer injury and death. Contrary to colloquial beliefs, officers in the U.S. are most likely to be injured or killed in the line of duty not from felonious actions by a criminal entity, but from vehicular accidents while carrying out daily routines.

This is clear from Table 1, compiled from cumulative data from the 1996 and 2006 *Law Enforcement Officers Killed and Assaulted Report* (see U.S. Department of Justice, Federal Bureau of Investigation, 1996; 2006). By far, vehicle-related incidents are the most likely cause of on-duty police deaths, the largest proportion of which are accidents. Although the way the FBI reports this data renders uncertain how many of these incidents within each category involve a high speed pursuit, the numbers are still compelling and therefore a primary managerial concern.

Table 1. Circumstances of Law Enforcement Officer Deaths (1987-2006)*

	N	%
Automobile, motorcycle, aircraft accidents	968	36.9%
Arrest situations	391	14.9%
Accidentally struck by vehicles	233	8.9%
Ambush situations	178	6.8%
Felony and non-felony traffic stops	190	7.2%
Disturbance calls	210	8.0%
Investigative activities	195	7.4%
Accidental drownings, falls, and other	108	4.1%
Accidental shootings	68	2.6%
Handling, transporting, custody of individuals	61	2.3%
Tactical situations	21	0.8%
Total	2,623	100.0%

*Source of data: Federal Bureau of Investigation, *Uniform Crime Reports* (see www.fbi.gov/ucr/ucr.htm#leoka). This information does not include officers killed during the September 11, 2001 terror attacks in the United States.

New Concerns: Police Pursuits in an Age of Innovation

The balance between crime control and safety/liability is a central framework in the discourse on police pursuits and is reflected in police policies, research and practice. However, in addition to these on-going concerns, two equally important and contemporary contexts should also motivate pursuit policy reform and data collection. These contexts include the advent of a new era of policing that emphasizes proactivity, prevention, and problem-solving, accompanied by an increasing use and demand for information and analysis to support those innovations and hold officers and agencies accountable for the resulting outcomes.

These two trends are dependent and related to one another. Since the 1990s, there have been fundamental shifts and changes in the demands, perceptions, practices, management strategies, and rhetoric of many American policing agencies towards greater proactivity. This proactivity is reflected in innovations such as community policing, problem-oriented policing, hot spots patrol, evidence-based policing, crime analysis, zero tolerance, and quality-of-life policing, which have become common buzzwords in policing discourse, if not practice (see Weisburd and Braga, 2006). While the extent of the adoption of each of these innovations has varied (see Weisburd and Lum, 2005; Weisburd et al., 2003), and while debates continue over their effectiveness, legitimacy, and feasibility (see Sherman et al., 2002; National Research Council, 2004; Weisburd and Braga, 2006), these innovations undoubtedly point to an emerging proactive paradigm. Each represents a move away from the traditional, case-by-case, 911-driven, rapid response, and reactive arrest tactics that characterized the professional era of policing towards a policing style that is proactive, preventative, and anticipatory.

The second trend is necessitated by the first, as the move towards a more proactive and preventative orientation requires the ability to predict, through accurate analysis of information and data, patterns and clues about crimes which have yet to occur. Thus, connected to this changing paradigm towards proactivity has been an increase in the development, use, and awareness of data collection, analysis, and related information technologies or systems to facilitate these predictions, to evaluate interventions, and to plan prevention activities. Both of these changing environments are important to the study of police pursuits.

A Changing Environment: Increased demands for more proactive uses of patrol vehicles

During the "professional era" of policing, reform was marked by policies, practices, and technologies that emphasized quick, efficient, fair, and standardized responses to calls for service (see Carlan, 2006; Kelling and Moore, 1988; Moore, 1992; Reiss, 1992). The main police function evolved into one where a patrol officer's primary mandate was to promptly and professionally answer 911 calls as assigned from computer aided dispatch (CAD) systems in accordance with standard operating rules and procedures. Patrol cars directly facilitated this mandate by providing the mechanism by which quick responses could be achieved.

While efficiency, fairness, and standardization were important goals for the police to aspire to, these ideals of the professional era created and solidified a deployment style and culture that was profoundly reactive to crime. This style continues to permeate almost all aspects of American law enforcement to this day, despite evidence that reactive approaches have been shown to be

largely ineffective in preventing or reducing crime (Sherman et al., 1997; Sherman et al., 2002; National Research Council, 2004). Reactivity is evident in patrol officers' response to 911 calls, the case-by-case approach by which detectives handle investigations, as well as in other administrative matters such as officer discipline and supervision (Moore, 1992). Subsequently, the evaluation of patrol officers has been mostly limited to how quickly officers respond to calls for service, the numbers of reactive arrests or clearances an officer or detective achieves, and whether officers adhere to standard operating procedures. With regard to vehicular use, measures such as miles driven per shift, proper maintenance and upkeep of a vehicle, and the number of accidents an officer incurs may be employed to gauge performance and ensure accountability.

However, many police agencies are being confronted by, and a few have actively sought, a change in their function, organization, and mandate to better address crime, increase their legitimacy, and improve their accountability structures through proactive policing. In particular, law enforcement agencies, more than ever before, are being held responsible for not just responding to crimes on a case-by-case, reactive basis, but also engaging in more anticipatory actions that have been shown to be more effective. As shown in Sherman et al.'s 1997 report to Congress, proactive activities show more promise in reducing crime, and include interventions such as directed patrol upon crime "hot spots" (see Sherman and Weisburd, 1995; Sherman et al., 1989), foot patrol, field interviewing of suspicious individuals, problem-solving projects, traffic stops to find guns and drugs, the use of crime analysis and computerized mapping, and other street-level interventions. Indeed, as the recent National Academy of Sciences report on fair and effective policing asserts, proactive hot spots patrol is the most evidence-based deployment tactic that can be employed to deter crime (National Research Council, 2004). The bottom line: There is an increased demand for police to be more proactive in this new era in order to be more effective and accountable.

This move towards a more proactive orientation is directly relevant to police pursuits, as they have changed the meaning, use, and performance measures of vehicular use in ways that could potentially affect the frequency and outcomes of pursuits. In this environment, there is a greater demand for officers to use their vehicles in more proactive situations that are not initiated by a 911 call, which in turn could have a number of effects and consequences. A move towards more proactive schemes could increase the frequency of pursuits, change the reason and nature of pursuits, change the location or type of place that pursuits occur in, increase the potential for racial profiling, or place officers at greater risk of injury and accident. For example, police officers who engage in hot spot patrols will place themselves in areas where the probability of having to chase individuals either on foot or in their vehicles may be higher. Further, the choice of whether to stop an individual must be done based on predictions and other forms of information that may not be 911-generated. Depending upon the source and type of that information, police officers place themselves at higher risk of racial profiling, for example.

Or, such shifts in policing can also increase the level of uncertainty an officer may encounter in a situation that may lead to a vehicular pursuit. Before, officers were given some information through a 911 call about the offender and the situation, and pursuits may result with the understanding that the individual will be arrested for the report of crime of which the officer was assigned. However, in more proactive schemes, officers initiate contact with individuals and

vehicles, thus reducing the amount of preliminary information the office has of both the situation and the suspect. For example, a proactive activity that has recently become popular in crime hot spots is the use of "pre-text" traffic stops. Pre-textual stops are traffic stops initiated by an officer for an "ordinary" traffic violation (e.g., a broken taillight, speeding, changing lanes without signaling). This provides officers with initial cause to stop a vehicle and an opportunity for the officer to either see in plain view suspicious activity or to ask the driver for consent to search their vehicle for contraband.

Although very much a debated issue among practitioners and researchers, pre-text stops have been deemed constitutional by the U.S. Supreme Court, which has legitimized and increasing their use.[13] The use of traffic enforcement to reduce crime has also been examined as a promising crime prevention strategy (Koper and Mayo-Wilson, 2006; McGarrell et al., 2002; McGarrell et al., 2001; Sherman et al., 1995). This type of intervention is relevant to pursuits as the increase use of these strategies could result in police officers following, stopping, and chasing individuals in cars at much higher frequencies than in a reactive 911-driven deployment model. This places officers more often in situations where they may have to proactively use their vehicles, where potentially more individuals may flee, and in situations of which less information about the suspect or situation is known. And, if the stop was part of a proactive, hot spot initiative to reduce gun violence, this further changes the reason for the stop, the level of risk, and the officer's perception and guess about why an individual flees. An officer conducting traffic stops in a hot spot of prostitution crimes may come to a very different conclusion about why a person would flee as compared to an officer conducting traffic stops along a street with a high probability of gun crimes. Even if suspects in both scenarios flee for the same reason (e.g., the car he or she was driving was stolen), officers' perceptions based on their assigned tasks or understanding of a particular area may in turn lead to very different outcomes or choice of actions.

Take for example a program conducted by Prince George's County Police Department (Maryland) in the late 1990s. The program, called *Take Away Guns* (*TAG),* was a locally-initiated National Institute of Justice partnership (see McEwen, 2003) between the police department and the University of Maryland.[14] The intervention consisted of a directed patrol scheme using pre-textual traffic stops on major streets that had high probabilities of gun crimes. In this type of intervention, while the initial reason for an ensuing pursuit may be a traffic violation, the actual reason is connected to a proactive intervention targeting gun carrying in vehicles. Thus, such a program could not only increase the frequency by which individuals may flee the police, but also changes the reason, environment, and context by which the pursuit was initiated. This may in turn, affect not only the outcomes of pursuits in terms of accidents and use of force, but also the nature of the final charge of arrested individuals.

In addition to the use of traffic stops and enforcement to reduce crime, another proactive activity that has implications for vehicular use has been an increased interest and use of field interviewing to detect criminal activity. Field interviewing involves officers engaging individuals in one-to-one conversations, usually outside of a patrol vehicle. Although this may

[13] *Whren et al. v. United States*, 517 U.S. 806 (1996). See also Greenhouse (1996).
[14] The project was led by Dr. Lawrence Sherman, and the first author of this report was a member of the research team.

seem unrelated to police pursuits, proactive field interviewing often involves an active interaction between an officer's use of his or her vehicle and engaging individuals outside of a vehicle. Even in populated and building-dense cities, police use their vehicles to quickly move from corner to corner or from place to place in which they will conduct field interviews. This often involves officers quickly "jumping out" of their vehicles to engage individuals in conversations before they have a chance to attempt to leave the area. All of these activities have the potential for increasing the frequency of pursuits and also accidents that might result.

Finally, changes in vehicle-related technology to facilitate these proactive interventions, such as mobile computer units, as well as the frequency and purpose for their use, can also affect and change the nature and outcome of police pursuits. Computers in vehicles can both facilitate information gathering on individuals which may initiate proactive activities and pursuits, but could also create distractions (for example, officers running license plates while following vehicles) which can further lead to accidents.

This trend towards proactivity has transformed the use and meaning of the patrol vehicle from a quick, yet a more controlled and reactive response to a 911 call, to one of proactive action in more uncertain situations. In turn, such a transformation could change the outcomes of police pursuits as well as the officer's perceptions about why individuals flee. In other words, officer, civilian and suspect safety, legal concerns, and fleet management are not the only concerns of police agencies with regards to high speed pursuits. Understanding, recording, evaluating, and assessing police pursuits also become imperative in this age of innovation and proactivity. Indeed, as Alpert suggests,[15] because the risk to the public remains, these changes emphasize the importance of police training, supervision, and accountability mechanisms that more generally control the actions of officers no matter the environment.

A Changing Environment: Increased use of information, analysis, and related technologies

Directly connected with these proactive innovations is the increased use of information, analysis, and related information technologies, all under the broader context of "evidence-based policing" (Alpert, 1988; Sherman, 1998), information-driven management, and "intelligence led policing" (Ratcliffe, 2008) to guide proactive police practices. As Lawrence Sherman has remarked: "Evidence based policing is the use of the best available research on the outcomes of police work to implement guidelines and evaluate agencies, units, and officers (Sherman, 1998:3)." Sherman was not only promoting the use of knowledge from methodologically rigorous evaluations to guide police decisions, he was also suggesting that police work should regularly use information for ongoing development, evaluation, and assessment of everyday activities, tactics, and strategies. Alpert (1988) made this evidence-based argument for pursuits more specifically, emphasizing the importance of data in decision making and policy development.

Many of the proactive activities discussed above rely on and are created by data collection and analysis to predict their targets and evaluate them for crime prevention and control (Lum, 2006). This emerging trend of the increased use of information and analysis, therefore, cannot be separated from the movement towards using more proactive police innovations and may be

[15] Personal communication to the author, March 11, 2008.

linked to improving the function and effectiveness of police activity. While there has not been a direct test of the link between increased use of information, analysis, and information technologies on police crime control effectiveness, evaluation research has supported this proposition indirectly. A central component of the evaluations of hot spot policing interventions, for example, has been the creation of hot spots using computerized crime mapping or geographic cluster analysis (for a review, see Braga, 2001; see more specifically Sherman and Weisburd, 1995, or Weisburd and Green, 1995). Weisburd and Lum (2005) also found that the diffusion of computerized crime mapping into American policing was one important factor in facilitating the use of hot spots policing.

In addition to the research on hot spots, studies of problem-oriented policing, evidence-based policing, and crime analysis lend further support to the effectiveness of data collection, database building and analysis. Herman Goldstein (1979, 1990), in his development of problem-oriented policing, hypothesized that police could be more effective when structuring deployment around problems, not individual crimes. Such problems could be derived through the collection, organization, aggregation and analysis of individual pieces of crime-related data into patterns and trends. The few empirical tests of problem-oriented policing show that the use of information in this way can have promising effects on crime reduction (see e.g., Braga et al., 1999; Eck and Spelman, 1987; Sherman et al., 1995). Of course, such problem-solving requires an increase in larger-quantity data collection, analysis, and the database systems which will allow efficiency in these efforts.

Furthermore, recent information technologies and their associated managerial innovations that facilitate data collection and sharing also indicate that this changing environment is connected to trends toward proactivity. COMPSTAT, the well-known managerial strategy developed by the New York Police Department (see Bratton, 1998; Henry, 2002), employs information management and data collection systems to proactively facilitate accountability as well as implement targeted tactical deployment. Weisburd et al. (2003) detail how information systems play a central role in COMPSTAT in terms of developing crime reduction strategies as well as keeping personnel accountable. Information technology can be used as a tactical tool for identifying and apprehending criminals, and can enhance community policing efforts (Nunn, 2003). Pierce and Griffith (2005) and Seaskate, Inc. (1998) argue that the use of information technologies in law enforcement agencies can improve the efficiency and effectiveness of processing information and performing law enforcement operations.

A national pursuit information system like IACP's may also serve as a foundation for strategic analysis and information sharing across jurisdictions (Faggiani and McLaughlin, 1999), just as information systems in COMPSTAT help precincts and boroughs share knowledge with each other. Many policing concerns are multi-jurisdictional; agencies have had to adapt to this changing environment by finding ways to connect, communicate, and share knowledge with one another (Buslik and Maltz, 1997; Department of Justice, 2002; Geddes et al., 1998; International Association of Chiefs of Police, 2000; James and Russo, 2002; Taxman and McEwen, 1997). The use of multi-jurisdictional information collection and sharing technologies can help facilitate these endeavors (for evaluations of multi-jurisdictional information sharing strategies, see Taxman and McEwen, 1997; Taxman et al., 2002), if agencies can overcome often unwarranted cultures of secrecy or fear of information (Ashley, 2003; Manning, 1992a, 1992b; Pierce and

Griffith, 2001). In total, there is evidence that suggests that information and analysis, as well as the managerial and technical innovations that surround analysis, can facilitate both proactivity and police effectiveness.

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In summary, these changing environments – a move towards more proactive policing as well as the increased use of information, analysis, and information technologies – provide a contemporary context for police pursuits. Not only does a shift toward proactivity have the potential to alter the reason, situation, and perceptions of pursuits, but the advent of increased use of information technologies and data in police agencies improves the ability of the police to monitor, analyze, and assess pursuit practices.

3 Police Pursuit Research

Empirical Studies of Police Pursuits

Given the important concerns of safety, liability, criminal apprehension, and because of contemporary policing trends toward proactivity and information-driven policing, high speed police vehicular pursuits continue to be a managerial priority. At the same time, as Alpert et al. (2000) point out, while some knowledge is available to guide police efforts, agencies are just beginning to use such knowledge to become informed and to make changes to their policies based on that information. Yet, as already discussed, the trend towards evidence-based policing and information-driven management has already increased demands on the police to more accurately record and collect information on many activities, as well as to use that data to evaluate their effectiveness.

What do we know about police pursuits? A number of analyses have been conducted with regard to police pursuits that are currently available to guide agency decision making. Indeed, one of the earliest examinations of police pursuits dates back to 1968, conducted by the Physicians for Automotive Safety (1968). This study was based primarily on anecdotal information and not considered reliable (Alpert and Smith, 2008). However, it was followed by a broader analysis of pursuit policies and a collection of pursuit records in four jurisdictions (Fennessy et al., 1970) and then the California Highway Patrol study on police pursuits data (California Highway Patrol, 1983). Although the Fennessy et al. and California Highway Patrol studies had many methodological limitations, they represented important steps forward in data collection and analysis, emphasizing the importance for the empirical analysis of police pursuits, as well as pointing out the lack of data available to be analyzed.

Since these early studies, development of research in this area has been primarily spearheaded by Geoffrey Alpert and his colleagues. In this section, we present only a brief review of the studies we could locate that conduct empirical analysis of police pursuit data, to provide a general sense about the nature, characteristics, and outcomes of existing analyses for police managers reading this report. In total, we located 33 studies which report analysis of collected data on police pursuits, each summarized in Table 2 across common study dimensions. While the studies that we list represent only those we could find in available literary and research databases (some which did include government reports and non-published material), we also consulted with experts in the area of pursuits to ensure that the major studies were included. We suspect that there may be a number of informal or in-house studies conducted by individual agencies, other countries, or for small research projects that did not surface in our search. However, we are confident that this list is a good representation of the available research in this area.

The studies vary in scope and focus and span a variety of jurisdictions in the United States, including Florida, California, Maryland, New York, Kentucky, Michigan, Illinois, South Carolina, Nebraska, Arizona, Texas, and Minnesota. We also found a number of studies conducted in the United Kingdom and Australia. In some cases as many as 86 police agencies were solicited for information (see e.g., Auten, 1991), while in other cases, a single agency's data were examined. The most pursuits collected for study was from Bayless and Osborne

(1998), who analyzed 20,738 pursuits across numerous California jurisdictions. Time periods in which pursuits were analyzed included records dating back to approximately 1970 and those as recent as 2003.

Our overall goal in providing this information is to highlight two points. First, there are a number of similarities across findings, as already pointed out by Alpert and Fridell (1992) and Alpert et al. (2000). This suggests that while limited, there is generalizable information and analysis which police managers can use to inform their understanding of the nature, characteristics, and outcomes of police pursuits when reforming their practices. Secondly, at the same time, many of the studies are conducted within single jurisdictions or use the same data for different analyses, pointing to the lack of available data both within agencies and across jurisdictions in which to analyze. This finding stresses the need for a detailed and readily available data collection system which can not only facilitate standardized data collection across jurisdictions for more scientific comparisons and policy development, but by doing so, can lead to an agency's own improvement in information collection and management.

What is not included in Table 2 or this section are studies that do not analyze police pursuit report data. For example, studies that examine the content of pursuit policies or which survey agencies or police managers regarding their practices or attitudes related to police pursuits (i.e., Alpert et al., 1996; Bayless and Osborne, 1998) are reserved for discussion in Section 4 (on pursuit policies) and elsewhere throughout this report. Additionally, we caution readers about the general nature of this table and provide the complete citation for each report for agencies to more closely examine the specific statistics of each report.

TABLE 2 BEGINS ON NEXT PAGE

Table 2. Empirical Studies of Police Pursuit Data

	Location or jurisdiction examined	Number of locations studied	Data years	Sample size	Unit of analysis	Brief Study Summary	Some Key Findings
Alpert, G.P. (1987). Questioning police pursuits in urban areas. *Journal of Police Science and Administration, 15(4)*, 298.	Metro-Dade (FL) Police Department	1	Aug 1985-July 1986	398	pursuits	Analysis of the characteristics and outcomes of police pursuits in the context of Metro-Dade Police Department's pursuit policy; comparison with data from the California Highway Patrol.	61% of pursuits were initiated due to minor infractions, however final charges were often felonies not initially sought (57%). 85% of pursuits did not result in injury or accident, although certain types of pursuits more likely to have negative outcomes
Alpert, G.P. & Dunham, R.G. (1988). Research on police pursuits: Applications for law enforcement. *American Journal of Police, 7(2),* 123-133. See also Alpert and Dunham (1990).	Metro-Dade (FL) Police Department, Miami Police Department	2	1985-1987	952	pursuits	Analysis of accidents, injuries, reasons, and outcomes of pursuits. Bivariate analysis of pursuit characteristics and outcomes. See also Alpert and Dunham (1990).	33% ended in an accident; 17% ended with injury; over half initiated due to traffic violations, and many resulted in more serious charges; 68% of suspects were apprehended. Accidents more likely to occur when police proactively were "on the lookout".
Alpert, G.P. (1989). Policing hot pursuits: The discovery of aleatory elements. *Journal of Criminal Law and Criminology, 80(2),* 521-539.	Metro-Dade (FL) Police Department	1	1987	323	pursuits	Examined the outcomes of pursuits, in particular whether they resulted in injury, damage, or arrest; Also examined characteristics of officers involved in pursuits.	55% of pursuits did not result in serious injury, and pursuit-related injuries were only a small proportion of vehicular accidents. 75% of pursuits resulted in arrest. Younger officers more likely to have negative outcomes.
Alpert. G.P., Kenney, D.J., Dunham, R.G., Smith, W., & Cosgrove, M. (1996). *Police pursuit and the use of force.* Unpublished final report to the National Institute of Justice. Washington, DC.	Omaha (NE) Police Department, Metro-Dade (FL) Police Department, Aiken County (SC) Sheriff's Office	3	1990-1994	1,295	pursuits	Descriptive and multi-variate statistical analysis of police pursuits; surveys law enforcement agencies about content of pursuit policies and effects of changes in policy on pursuit behavior.	Changes in police pursuit policies led to either an increase in pursuits (when agencies changed from more restrictive to judgmental policies) or a decrease in pursuits (when agencies moved toward more restrictive policies). Numerous findings about characteristics and outcomes of pursuits, see final report (we also specify some findings in separate literature here).

Alpert, G.P., Kenney, D.J., & Dunham, R.G. (1997). Police pursuits and the use of force: Recognizing and managing 'the pucker factor' -- a research note. *Justice Quarterly, 14(2),* 371-385.	Florida, Arizona, Nebraska, and South Carolina	4	1990-1994	900 officers, 121 inmates	officers and inmates	Examined the use of force by officers after a high-speed vehicular pursuit.	Discrepancy between officer, supervisor and suspect reporting of the use of excessive force (13%, 11% and 24%, respectively), although for all of the cases, no official agency reports of excessive use of force were indicated.
Alpert, G.P. (1998). Helicopters in pursuit operations. Washington, DC: National Institute of Justice.	Baltimore City (MD) Police Department and Metro-Dade (FL) Police Department	2	Baltimore (1995 - 1996); Miami Dade (1996)	132	pursuits	Examines the use and outcomes of helicopters in police pursuits.	Pursuits utilizing helicopters resulted in high arrest rates in Miami (91%) and Baltimore (83%).
Alpert, G.P. Kenney, D.J., Dunham, R.G., & Smith, W.C. (2000). *Police pursuits: What we know.* Washington, DC: Police Executive Research Forum.	Omaha (NE) PD, Metro-Dade (FL) PD, Aiken County (SC) Sheriff's Office	3	1990-1994	1,295	pursuits	Analyzed data on the nature, characteristics and outcomes of police pursuits; This book also presents literature and legal updates and discussions from the original NIJ report.	Update to the NIJ Final Report, referenced above as Alpert et al. (1996).
American Civil Liberties Union Foundation of Southern California. (1996). *Not just isolated incidents: The epidemic of police pursuits in southern California.* Los Angeles, CA: American Civil Liberties Foundation of Southern California.	California Highway Patrol	12	1993-1995	5,766	pursuits	Analysis of accident, injury, and reason for pursuits.	While 35-40% of pursuits resulted in an accident or injury, only small proportion of the pursuits (between 5 and 12%) involved an individual suspected of a serious violent crime (most suspected of traffic and minor offenses).
Auten, J. (1991). *Police pursuit driving operations in Illinois: 1990.* Champaign, IL: Police Training Institute, University of Illinois.	Illinois	86	1990	286	pursuits	Analysis of accidents, injuries, reasons, and outcomes of pursuits.	Most pursuits did not lead to injury or accident and were not initiated for suspected felonies (most were initiated from traffic violations). The majority of suspects were apprehended.

Bayless, K. and Osborne, R. (1998). *Pursuit Management Task Force Report.* Report supported by the National Law Enforcement and Corrections Technology Center for the National Institute of Justice.	California	Multiple (unspecified number) agencies in California	1994-1996	20,378	pursuits	Analysis of pursuit data was not the emphasis of this report, which primarily consisted of an analysis of 419 surveys of chief executive officers of law enforcement agencies regarding police pursuit policies and concerns. Only pursuit duration and collisions were examined with regards to police pursuits data.	26% of pursuits resulted in collisions. Of the pursuits that resulted in collision, over 50% occurred within 2 minutes of the pursuit and over 80% of collisions occurred within 6 minutes of the pursuit.
Best, D. & Eves, K. (2004). Police pursuits in Wales: *The results from a one-year monitoring exercise in the four Welsh police forces, 2002-2003*. Wales, UK: Police Complaints Authority.	Wales, United Kingdom	4	Sept 2002-Aug 2003	344	pursuits	Examined characteristics of officers involved (in particular their training) in relation to outcomes of pursuits; Also examined characteristics and outcomes of pursuits.	Only descriptive statistics provided - 23% of incidents resulted in accidents, 40% resulted in arrest.
Best, D. & Eves, K. (2005). *Why are there no lessons learned from road traffic incidents involving the police?* Wales, UK: Police Complaints Authority.	England and Wales, United Kingdom		1998-2001	64	pursuits	Examined selected reports of police pursuits for disciplinary responses by agency and supervisors.	Found that for three-quarters of the cases, no disciplinary action or policy recommendation was made.
Brewer, N. & McGrath, G. (1991). Characteristics of offenders in high-speed pursuits. *American Journal of Police, 10(3),* 63-68. See also www.acpr.gov.au/pdf/ ACPR89.pdf	Adelaide, Australia	1	April 1987-February 1988	143	pursuits	Analyzed pursuits and then interviewed a random selection (n=38) of offenders involved in the pursuits to determine demographic and criminal history characteristics of individuals involved in pursuits.	Those at high risk for engaging in police pursuits are similar to those considered high risk drivers generally (young, male, unlicensed, high blood-alcohol content). High proportion of pursuits start with a traffic violation.
California Highway Patrol. (1983). *California Highway Patrol Pursuit Study.* Sacramento, CA: California Highway Patrol.	California Highway Patrol	1	1982	683	Pursuits	Examines characteristics and outcomes of police pursuits.	30% end in accidents, 11% in injuries, 77% arrest rate. Felony pursuits tend to result in more accidents than non-felony pursuits. Reviewed by Alpert and Anderson (1986).

Charles, M.T., Falcone, D.N., & Wells, E. (1992). *Police pursuit in pursuit of policy: The pursuit issue, legal and literature review, and an empirical study*. Washington, D.C.: AAA Foundation for Traffic Safety.	Illinois	18	1991	149 pursuits, 784 officers,	pursuits, officer perceptions	Examines police pursuits and officer perceptions of pursuits.	Vehicle pursuits are short (median is 5 minutes and about 3.2 miles). 14% were initiated for felonies. Only 3% were initiated by calls for service. 26% resulted in accidents. 9% resulted in injuries. Urban departments reported lower "top speeds."
Crew, R. (1992). An effective strategy for hot pursuit: some evidence from Houston. *American Journal of Police, 11(3),* 89-95.	Houston (TX) Police Department	1	Feb 1987-March 1988	1,584	pursuits	Evaluates the effects of pursuit policy on outcomes.	After the policy went into affect, the reporting of police pursuits dropped 40%.
Crew, R. & Hart Jr., R. A. (1999). Assessing the value of police pursuit. *Policing: An International Journal of Police Strategies and Management, 22(1),* 58-73.	Minnesota Department of Public Safety	1	1989-1996	6,773	pursuits	Conducts a cost-benefit analysis of police pursuits by comparing negative (accidents, injuries, damage) to positive (arrest, deterrence) outcomes of pursuits.	Find a 60 to 1 benefit to cost ratio for police pursuits, although also note that the odds of a negative outcome of a pursuit are fairly high (30%).
Criminal Justice Commission. (1998). *Police pursuits in Queensland resulting in death or injury.* Criminal Justice Commission, Brisbane.	Queensland Police Department, Australia	1	1992-1993; 1996-1997	63	pursuits	Descriptive statistics on the nature, character and outcome of pursuits which had ended in injury or death.	A number of descriptive statistics are provided about these pursuits. Some highlighted findings were that pursued drivers tended to be male, often were unlicensed or influenced by alcohol.
Docking, M. Bucke, T., Grace, K., & Dady, H. (2007). *Police road traffic incidents: A study of cases involving serious and fatal injuries*. London, U.K.: Independent Police Complaints Commission.	London	45	April 2004 – September 2006	102	pursuits	Descriptive statistics of RTIs (Road traffic incidents), including police pursuits - reasons, outcomes, and officer and suspect characteristics	Pursuit drivers tend to be young, male, uninsured, and disqualified from driving; 25% of fleeing drivers were fatally injured; 50% of fleeing drivers were seriously injured; 60% of fleeing drivers were over the legal limit for alcohol consumption; incident reports were not completely consistently.

Dunham, R. G., & Alpert, G. P. (1991). Understanding the dynamics of officer age and gender in police pursuits. *American Journal of Police, 10(3),* 51-62.	Metro-Dade (FL) Police Department	1	1987	323	pursuits	Examines the correlation between officer age and gender and police pursuits.	There were gender and age differences in pursuits - females were more cautious but were just as likely to apprehend suspects with less negative outcomes. Younger officers tended to have more negative outcomes.
Dunham, R.G., Alpert, G.P., Kenney, D.J., & Cromwell, P. (1998). High-speed pursuits: The offenders' perspective. *Criminal Justice and Behavior, 25,* 30-45.	Miami (FL), Omaha (NE) and Lexington and Richland counties (SC)	4	1994	146	inmates	Interviewed jail inmates recently involved in pursuits to discover what factors might contribute to a suspect having a higher risk of engaging the police in a vehicular pursuit.	Previous chase experience, thoughts of punishment, safety, and driving under the influence increased the odds of engaging the police in a pursuit. However, these factors did not affect the final outcome of the pursuit.
Fennessy, E.F., Hamilton, T., Joscelyn, K.B. & Merrit, J.S. (1970). *A study of the problem of hot pursuit*. Washington, D.C.: U.S. Department of Transportation. See also Fennessy and Joscelyn (1972).	North Carolina Highway Patrol, Fairfax County (VA) PD, Bloomington and South Bend (IN), PDs	4	Unclear, but for 1 month around 1970	46	pursuits	Broad study of the police pursuit law and policies, including descriptions of the number of police pursuits and their consequences/risks.	Most injuries are incurred by individuals other than the police. Over 90% of pursuits are initiated from traffic-related offenses. Some risk factors found were alcohol, drivers license status (15% of fleeing suspects did not have on), and youth.
Hannigan, M. J., Commissioner. (1995). *The evaluation of risk: Initial cause vs. final outcome in police pursuits.* California Highway Patrol.	California Highway Patrol and multiple California agencies	Exact number is unclear from report.	1993-first quarter of 1995	unclear, over 5,000 pursuits	pursuits and agencies	Examines the reason and the outcome of pursuits. Because the report could not be located, it is unclear exactly how many pursuits were studied.	Summaries indicate that while about half of the pursuits began as minor traffic violations, if apprehended, 73% resulted in felony arrest. As already mentioned, no more information on this report could be located.
Hoffman, G. (2003). *Police pursuits: A law enforcement and public safety issue for Queensland.* Queensland Crime and Misconduct Commission, Brisbane.	Queensland, Australia	1	July 2000-June 2002	1,259	pursuits	Three databases used. Examines the reason why pursuits were initiated and the outcome of pursuits in terms of injuries, arrests and charges. Also looks at characteristics of the pursued driver.	The most common reason for pursuits were traffic offenses. 29% of pursuits resulted in injury.

Homel, R. (1990). *High speed police pursuits in Perth: A report to the Police Department of Western Australia.* Department of Western Australia, Perth.	Perth, Australia	1	1990	346	pursuits	Describes the outcomes of these pursuits.	Most apprehended individuals were charged with car theft (70%) while the rest with other traffic offenses. 34% of pursuits resulted in crashes and almost 7% resulted in death.
Lucadamo, T. (1994). *Identifying the dimension of police pursuit.* Master's Thesis, University of Maryland.	Baltimore County (MD) Police Department	1	1987-1993	1,064	pursuits	Examines the correlates of pursuits that did not result in a crash or collision.	Found that years of service, weather, number of police vehicles, and entering another jurisdiction could accurately predict 92% of the pursuits that did not result in accidents and 65% of all pursuit outcomes.
Nugent, H. (1990). *Restrictive policies for high-speed police pursuits.* Washington, D.C.: U.S. Department of Justice, National Institute of Justice.	Nassau County (NY), St. Petersburg (FL), Mesa (AZ) and Phoenix (AZ)	4	1985-1987	435	pursuits	Policies and data from four agencies with restrictive pursuit policies were examined.	The majority of pursuits were for traffic offenses and involved male and younger drivers.
Oechsli, S. (1992). *Kentucky State Police Pursuit Study: 1989-1992.* Kentucky State Police, Frankfort, KY.	Kentucky State Police	1	May 1989-March 1992		pursuits	Analyzed nature, characteristics and outcomes of police pursuits, including accidents.	40.6% of the pursuits were initiated by traffic violations, 53.9% were caused due to an alcohol or drug violation. 24.7% of the individuals pursued had an invalid license and 2.8% of these drivers were using a stolen vehicle. 22.2% of pursuits ended in accidents; 5.1% ended in injuries.
O'Keefe, J. J. (1989). *An empirical analysis of high speed police pursuits: the Houston Police Department experience.* Ann Arbor, MI: University of Michigan.	Houston Police Department	1	April 1, 1988-Nov 30-1988	316	pursuits	Examined descriptive data such as day of week, suspect information, and road or surface conditions and operational data such as the mean age and patrol experience of the involved officer, events ending in pursuit, and injuries sustained.	The mean age of officers involved in pursuits was 29 with 6 years of experience. Pursuit distances averaged 5 miles with a mean maximum speed of 66 mph. 79.7% of suspects who fled from police were arrested. 63% of pursuits originated from class c traffic stops or violations (typical offenses). There were no officer injuries or deaths.

Payne, D. M., & Fenske, J.C. (1997). An analysis of the rates of accidents, injuries and fatalities under different light conditions: A Michigan emergency response study of state police pursuits. *Policing: An International Journal of Police Strategies and Management, 20(2),* 357-373.	Michigan State Police	1	June 1991-May 1992	197	pursuits	Examined lighting conditions under which pursuits occurred and compares police accidents that resulted from pursuits and those resulting from incidents other than pursuits in different light conditions.	Pursuit accidents and fatality rate is significantly higher during darkness than non-pursuit accidents/fatalities, although other injury accidents were more likely to occur during either daylight or darkness, rather than dusk and dawn conditions.
Rivara, F. P., & Mack, C. D. (2004). Motor vehicle crash deaths related to police pursuits in the United States. *Injury Prevention, 10(2),* 93-95.	United States	Records span entire U.S.	1994-2002	2,654	pursuits	Analyzed information from the Fatality Analysis Reporting and the Crashworthiness Data Systems of the National Highway Traffic Safety Administration regarding police motor vehicle crashes that resulted in fatalities.	2654 fatal crashes involving 3965 vehicles and 3146 fatalities were recorded, of which 1088 were individuals not in the fleeing vehicle. Crashes occurred during the night, on local roads, and at high speeds. Most pursued drivers had prior motor vehicle convictions.
Senese, J. D., & Lucadamo, T. (1996). To pursue or not to pursue? That is the question: Modeling police vehicular pursuits. *American Journal of Police, 15(4),* 55-77.	Department unidentified	1	Sept 1985-Jan 1992	1,064	pursuits	Examined the nature, characteristics and outcome of police pursuits, and also looked at correlates of police pursuits that resulted in accidents.	About 1/3 of all pursuits ended in an accident. Less experienced officers had nearly the same proportion of pursuits ending in accidents as the more experienced officers. Influential variables differentiating pursuits that ended in accidents were: weather, number of police units involved; reason for pursuit, time of day, lighting, road conditions, and type of roadway.
Wells. E., & Falcone, D. N. (1997). Research on police pursuits: advantages of multiple data collection strategies. *Policing: An International Journal of Police Strategies and Management, 20(4),* 729-748.	Illinois	Multiple agencies in Illinois	1993-1995	197	pursuits	Compare ISPERN pursuit data set to previously reported data sets.	Fairly high convergence among various studies and data sources for typical characteristics of police pursuits despite variations in when, where, how, and from whom the data are collected

Themes in the Literature

Three main points emerged from examining these studies that may be relevant for police practitioners:

1. Although more research is needed, there currently exists empirical studies and analysis on police pursuit data to aid agencies in their decision making.

While this first point may seem obvious, we purposely highlight it to again emphasize to agencies reading this report that information, evidence, and research is currently available to inform their policy deliberations regarding police pursuits. Many micro and macro law enforcement decisions continue to be guided not by information, analysis and research, but by anecdotes, vague notions of "common sense", crises, organizational culture, organizational history, or "best guesses". Yet, evidence and information is essential in supporting law enforcement decision making, especially for a police activity like high-speed pursuits that can have serious consequences (Alpert, 1988).

These 33 studies provide descriptive statistics and sometimes correlational and predictive analyses of many aspects of police pursuits, illustrating the wide variety of information that can potentially be collected. Such aspects include reasons why pursuits are initiated (traffic violation, felony warrant, etc.), characteristics of the pursuit situation (time of day, weather, road conditions, speeds of vehicles, length of time of the pursuit, number of individuals involved) and the outcomes of pursuits (use of force, arrests and charges, injuries and damages sustained, information on fatalities). Information collected about the drivers themselves (age, gender, employment status, officer time-in-service, arrest record of the suspect, blood alcohol content of the fleeing suspect) have also been examined (see e.g., Alpert and Dunham, 1990; Brewer and McGrath, 1991; Dunham and Alpert, 1991; Dunham et al., 1998; Hoffman, 2003), although this information is less often collected and often only estimations (especially regarding fleeing suspect characteristics). Although we did not regularly find discussions about the race and ethnicity of officers and suspects involved in pursuits, there were some exceptions (see Alpert and Dunham, 1990, Dunham et al., 1998).[16]

We encourage agencies to use this information (and similarly collect their own data) to make their pursuit policies more evidence-based. Indeed, in the case of pursuits, legal cases and precedents may be an inadequate guide in a police manager's goal to develop pursuit policy. As aforementioned, although the Supreme Court in *Scott v. Harris* ended possible Fourth Amendment claims of excessive force, police are still faced with realities that influence their actions, including safety, liability, state laws and local requirements, as well as demands for proactivity. Local police agencies are concerned about reducing the costs and injuries associated with pursuits and at the same time improving their legitimacy within their communities. All of these goals may lead the police to use more restrictive pursuit policies, and be more motivated to understand what factors may increase the risk of negative outcomes when their officers engage in pursuits. These decisions require information, analysis, and research about pursuit data.

[16]The IACP pursuit database does provide the opportunity for agencies to submit this information to the database.

2. Studies which included analyses of pursuit outcomes (injuries, fatalities, damages) focused on the costs and benefits of pursuits. However, more assessment and outcome evaluations about changes in pursuit policies are needed.

The balance between criminal apprehension and safety/liability has been reflected in calculations of the costs and benefits of engaging in high-speed pursuits. For the most part, police agencies have leaned towards more restrictive policies, believing that the costs (injury, damage, death, liability suits, loss of legitimacy with the community, financial costs of fleet repair, etc.) far outweigh the benefits (arrest of the subject, deterrence, crime control).

For empirical analysis, there are two difficult research questions that the literature touches upon regarding this balance, although much more knowledge is needed to address each. First, there is the difficulty of accurately calculating the cost and benefit of engaging in a pursuit. In many studies, an implied benefit of a pursuit is often the arrest of the individual being chased, or the solving of a crime that occurred from that apprehension. A number of studies have found, for example, that a high rate of pursuits do not result in injury or damage, yet at the same time, many result in arrest (Alpert, 1989; Alpert et al., 1986; Alpert and Dunham, 1988; Alpert and Dunham, 1990; Best and Eves, 2004; Crew and Hart, 1999; Hannigan, 1995; Homel, 1990; Senese and Lucadamo, 1996). Costs might be calculated in monetary terms related to damages, injuries, or law suits that result from chases, or in terms of the rates of accidents that occur.

There are of course, a number of substantive caveats to these calculations. First, different agencies and the communities they serve may view seemingly low rates of injury (say 5%) as not tolerable. While Crew and Hart (1999) interpreted findings of low rates of accidents/injuries to high rates of arrest as a high benefit-to-cost ratio of 60 to 1, they also note that the odds of a negative outcome are still 30%. Further, there may be other negative outcomes besides physical injury or property damage, including the reduction of legitimacy of the police force if pursuits are perceived as dangerous, unfair, or leading to other uses of force (see Alpert et al., 1996, for a discussion of use of force and pursuits). And, reactive arrests have not been shown to necessarily reduce crime, nor are high arrest rates associated with crime reductions at the city-wide level, thus questioning the overall benefits related to the arrests of suspects.

The second difficult research question is related to the first: *If* calculations of costs and benefits *could* be estimated, we then need to determine whether changes in policies can significantly affect cost-benefit ratios. If the goal of a police agency is to reduce the cost-benefit ratio of pursuits by implementing a more restrictive policy, then, will such a change indeed accomplish this? The question of policy then becomes what would be considered a tolerable level of negative outcomes given the benefits involved, public concerns, and legal considerations. As Alpert and Smith (2008) point out, even within a more lenient legal environment, agencies may not change their pursuit policies to be less restrictive. They may still feel that the injuries, liabilities, and reduced support from the community are serious enough costs to justify strict pursuit policies. This is an area of research that still needs to be developed, not just in terms of understanding how to measure costs and benefits, but also to conduct outcome evaluations to determine whether changes in policies affect these ratios.

3. A more specific and interesting finding: Some studies found differences in the initial reason for pursuits and the final charge given to an apprehended individual.

A more specific and interesting commonality between a number of the studies was that while most of the studies discovered that examined pursuits were initiated due to traffic-related or other minor infractions (see e.g., American Civil Liberties Union Foundation of Southern California, 1996; Hoffman, 2003), the final charge given to apprehended pursued individuals was often different and sometimes more severe (see Alpert, 1987; Hannigan, 1995; Lucadamo, 1995; Nugent, 1990). This finding no doubt needs more empirical exploration, as such findings suggest multiple hypotheses or can lead to misleading conclusions. For example, some might view this finding as an indication that fleeing individuals are more likely to have been involved in the commission of more serious crimes than those who do not flee. On the other hand, there are studies which indicate that individuals who flee from the police (on foot or in vehicles), while having numerous past criminal infractions, do not have criminal histories that regularly include serious, violent offenses (see Brewer and McGrath, 1991). Dunham et al., (1998) interviewed offenders who had fled from the police and found that the most common reason given for fleeing in a vehicle was because the car was stolen (32% of the offenders provided this as one of reasons they fled).

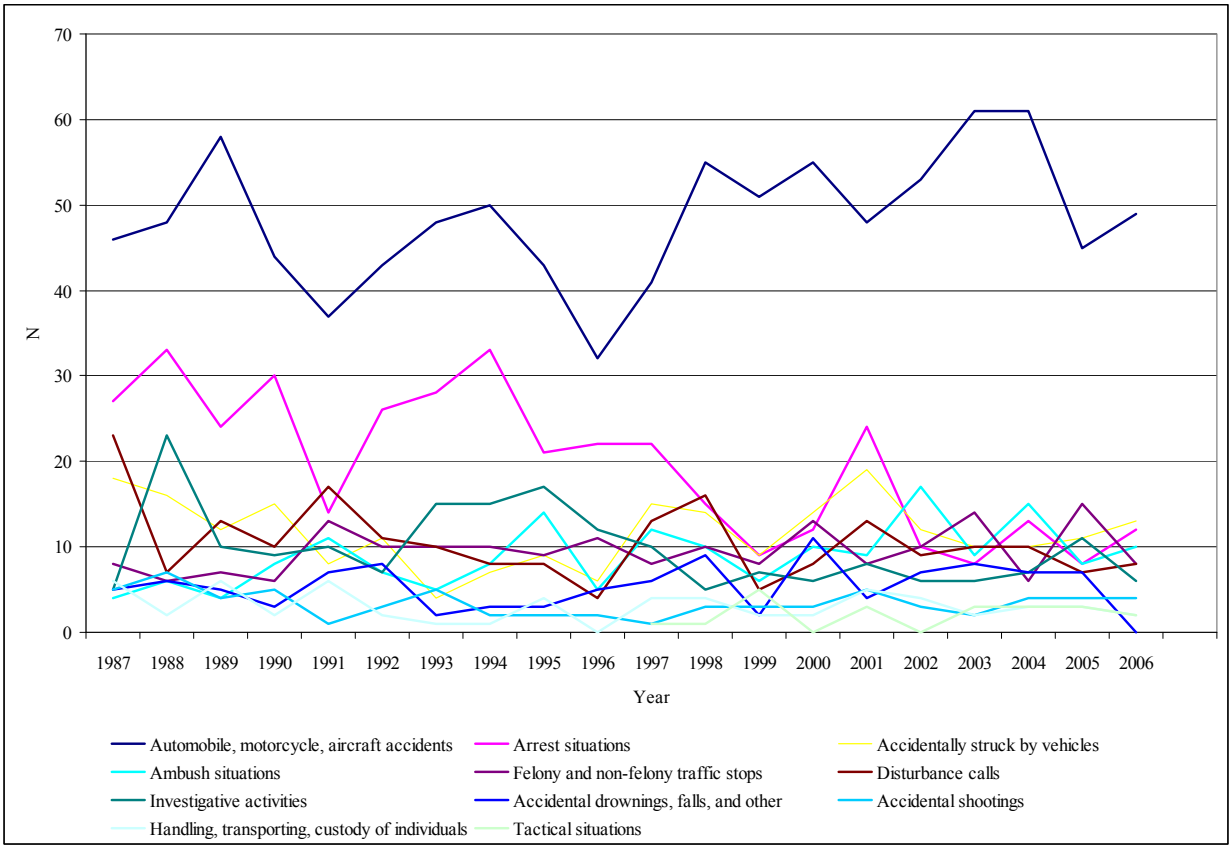
There is also little evidence that more individuals will flee if the police adopt more restrictive pursuit policies (or even no-pursuit policies). What may matter more in determining what makes offenders flee, therefore, is not an offender's prior felony history or the agency's pursuit policies, but rather the seriousness of the current situation in which offenders find themselves. The bottom line is that an evidence-based approach requires examining individuals who flee and who do not flee (including those who escape police pursuits entirely). Making guesses about the difference between those who flee and who do not based on the end charge police may give apprehended individuals could lead to misleading conclusions.

We highlight this particular aspect of existing research to return to a previous discussion in Section 2 regarding the changing environment and demands of American policing. One research question of interest in previous studies has been whether police should pursue individuals who have committed minor infractions or if pursuits should be initiated on traffic violations. Crew and Hart (1999), for example, argue that pursuits initiated for non-serious incidents tend to be the least cost-effective. Indeed, some agencies have adopted policies in which pursuits can only be initiated if the reason for the pursuit involves a serious crime. Yet, as police agencies move toward more proactive interventions, tactics, and strategies, such efforts can affect the reasons why officers initiate a pursuit. In particular, the initial reason may be unknown or more ambiguous in proactive interventions than in reactive response to a 911 call.

A further point on this topic can be made when returning to the data regarding police deaths, first mentioned above in Table 1. In Figure A, we display this same data across a time series of twenty years. Notice the change in relative patterns of the reasons given by agencies for officer deaths – there appears to be a convergence in many of the trend lines, and a slight increasing trend in circumstances related to vehicular accidents. Indeed, because of the ambiguities and problems in this data, there could be *many* reasons for these patterns. But one possibility is that changes in police deployment paradigms may render some of the reasons and definitions

captured by the FBI's reporting system less meaningful, or lead to a change in the distribution of reasons given over this twenty year period. Data collection systems can also be affected by the changing environment of police operations. The more proactive strategies police use involving their vehicles, the less meaningful older data categorizations become.

Figure A. Circumstances of Law Enforcement Officer Deaths: 20-Year Trends



*Source of data: Federal Bureau of Investigation, *Uniform Crime Reports* (see www.fbi.gov/ucr/ucr.htm#leoka). This information does not include officers killed during the September 11, 2001 terror attacks in the United States.

The Need for Evidence-Based Pursuit Policies

The availability, relevance, quality, and content of empirical studies of police pursuits depends on the accurate, timely, and comprehensive collection of data. If police practices are to become more evidence-, as opposed to anecdotally-based, decisions about police pursuit policies must be made using reliable information (Alpert, 1988). And, evidence-based policing demands that such information comes from both existing knowledge and from data generated by agencies themselves (Sherman, 1998).

It is clear that more data and systems to collect those data are needed to achieve this goal. One of the earliest studies we found on police pursuits, conducted by Fennessy et al., (1970; see also Fennessy and Joscelyn, 1972) recommended that the first component of a police agency's pursuit program should be "*The development of a hot pursuit data base*":

> *"Without knowledge of the nature of the hot pursuit problem within a jurisdiction it will be impossible to formulate a rational policy or to avoid the misallocation of resources. … we strongly recommend the collection and analysis of a large seasonal sample of data on the incidence, characteristics, and consequences of hot pursuit and the collection and analysis of a representative sample of data on fleeing offenders' characteristics. Careful investigation should also be made of the reasons that underlie the decision to evade arrest and the police officer pursuit motivation."* (Fennessy and Joscelyn, 1972: 400)

Their recommendation is still meaningful (and still unfulfilled) forty years later. This lack of an evidentiary base for policy has also been more recently noted by police executives. As Seattle Police Department's chief, Gil Kerlikowske stated in Alpert et al.'s (2000) volume on "What We Know" about police pursuits:

> *"Thus far, many police leaders, officers, policy makers, and the public have been trying to answer [police pursuit policy] questions without the benefit of comprehensive research. Policies have been made stricter or more lenient based on isolated pursuit incidents, or on assumptions about how law violators decide whether or not to flee from police." (Chief Gil Kerlikowske, in Alpert et al., 2000:vii)*

And, even if police agencies are collecting data on pursuits, more importantly, as Alpert and his colleagues reinforce, policies are still not being regularly informed by that data or research (Alpert et al., 2000:15). Only improved and increased data collection, analysis, and management, combined with motivated and capable leadership, can improve this current situation. While the IACP's model pursuit policy (see Appendix A) was an important step in developing a national standard for police pursuits, both in-house as well as regional or national incident reporting systems can also provide an evidentiary base for agencies to tailor such policies to fit their specific needs.

To accomplish this, we need greater range and depth of data collection. In terms of range, this involves encouraging or mandating the vast majority of agencies in the U.S. to collect information on police pursuits. In terms of depth, this means collecting and computerizing more information about each individual pursuit within these data bases, and doing so with great accuracy. Commonly collected data on pursuits have included the time of day, reason for pursuit, traffic, road, and environmental conditions, numbers of individuals, vehicles, police cars involved, and the outcomes of pursuits (injuries, accidents, property damage, criminal charges). However, other types of information which may prove useful in not only predicting situations, places, and individuals who are at high risk for creating a negative outcome (injury, accident, damage, liability) but also in evaluating the effects of pursuit policies and changes in policies may include information about:

- the police officers involved (age, gender, race, time in service, pursuit histories, training);
- fleeing suspects (age, gender, race, socio-economic status, blood-alcohol levels of suspects, prior criminal histories, driver license histories, drug abuse, etc.);

- vehicles (types, year, make and model);
- places where pursuits occur (e.g., population density, traffic patterns, street layouts, speeding limits, pedestrian information); and
- administrative responses to pursuits (see Alpert et al., 1997; Best and Eves, 2005).

A national or regional information system like the IACP Pursuit Database can help increase the range and depth of pursuit data in two ways. The first would be a standard system to gain both single and multi-jurisdictional understanding of the nature, characteristics, and outcomes of police pursuits. This could facilitate both in-house and comparative analysis and explore research questions such as:

- Do pursuits that take place in more urban, population-dense areas tend to result in more bystander injuries than those which do not?
- Do officers who operate on open highways and routes tend to initiate pursuits as a result of routine traffic violations as opposed to those who work within rural areas or inside of cities with lower speed limits?
- Are there relationships between organizational characteristics of police agencies and particular pursuit outcomes?
- What are the characteristics of suspects, officers, or communities that increase or decrease the risk of pursuits and/or negative outcomes?
- What characteristics of pursuits themselves tend to lead to more negative outcomes?

Data that sheds light upon these and other questions can help agencies make better choices about the types of policies they adopt and when they should pursue fleeing vehicles. Thus, the second advantage of a pursuit registry is that agencies can better understand what consequences may ensue if they change their policies. As the breadth of research has indicated, pursuit policies are much less studied than pursuit data. What is needed is more outcome evaluations that examine how changes in pursuit policies can affect pursuit outcomes. Interesting inquiries which require information from multiple agencies might include:

- Does a change in the type of pursuit policy (for example, from a more judgmental to a more restrictive policy) lead to a reduction of negative outcomes, liability suits, or damage costs?
- Do changes in pursuit policies affect an agency's ability to prevent crime? Alternatively, can changes in the police mandate or deployment style, affect pursuit outcomes?

- Can costs and benefits of pursuits be calculated and do communities have certain thresholds of the cost-benefit ratios (irrespective of legal precedents)?

The importance of these questions point to the appropriateness of IACP's endeavor to create a nationwide information registry and database of police pursuits. Although currently voluntary, a more frequently used, mandatory system could not only help standardize information collected about pursuits across jurisdictions, but also allow agencies to compare outcomes of their pursuits with agencies of similar characteristics to improve information sharing and the evidence-base of policy decisions. Information sharing is important especially as police pursuits often cross jurisdictional boundaries. Additionally, the ability to obtain longitudinal pursuit data across multiple jurisdictions will help police leaders and researchers identify trends of pursuits and reasons for those trends, specifically as they relate to legislation, court decisions, policy changes, and even organizational change within police agencies.

4 Police Pursuit Policies

The Content of Pursuit Policies

In this section, we provide an analysis of the content of pursuit policies from a sample of randomly selected U.S. law enforcement agencies. In addition to the literature review, such an analysis provides a policy orientation and dimension to the IACP Pursuit Database in two ways. First, examining current pursuit policies offers a benchmark by which progress can be compared or evaluations of changes in policy can be measured. Secondly, information within these policies themselves draws attention to the types of information that pursuit data collection systems need to collect in order to match the demands, actions, and requirements that are requested in these policies. Both are central to achieving evidence-based policing in this area.

The collection of pursuit policies for analysis dates back to the 1970s, with one of the earliest examinations conducted by Fennessy et al. in 1970 (see also Fennessy and Joscelyn, 1972). In their study, they requested policies from 130 U.S. city agencies and 48 state agencies. The researchers received policies from 52 of the cities and 22 of the states, from which they discovered three types of policies: "Officer Judgment", "Restrictive", and "Pursuits Discouraged". At the time, the "Officer Judgment" model appeared to be the dominant model of those who answered their survey. Fennessy et al. also found from their survey that very few agencies regularly and systematically recorded pursuit data, and they were not able to obtain any archived data on pursuits from any agency.

More recently, Alpert et al.'s (1996) report (see also Alpert et al., 2000) remains one of the few comprehensive studies of police pursuit policies, drawing comparisons across agency size and type. In that study, the authors sent a survey to a nationally representative sample of 436 police agencies in the United States regarding the nature and content of their policies and pursuit data (see also Kenney and Alpert, 1997). Agencies were asked about general characteristics of their organizations, the type of pursuit policy they followed, whether they recorded pursuits, supervisory control and disciplinary procedures of pursuits, the methods that agencies used to stop fleeing vehicles, and litigation experiences.

Alpert and his colleagues found agencies using more restrictive pursuit policies than seem to be indicated at the time of Fennessy et al., and that a large portion of police agencies had recently (in the two years prior to the survey) made changes towards restrictive policies. Additionally, in more recent times, more agencies are keeping systematic information on pursuits (although when Alpert surveyed agencies, the number was still well in the minority (31%). To summarize, findings from Alpert et al.'s 1994-1995 policy analysis included the following (obtained from Chapter 4 of Alpert et al., 1996 and Chapter 2 of Alpert et al., 2000):

- 91% of agencies reported having a written policy governing police pursuits;
- 48% of the agencies had modified their policies within the two years prior to the study;

- 87% of recently modified policies were made more restrictive;
- 48% of the agencies reported allowing pursuits for any offense, while 16% reported pursuits were only allowed for felony offenses;
- 58% of agencies only allowed marked cars to engage in pursuit;
- 11% limited the maximum speed of the pursuing vehicle;
- 40% of agencies required the pursuit to end when the suspect had been identified;
- municipal agencies were more likely to impose supervisory control, limit pursuits to felonies, and limit pursuits to marked vehicles only;
- roadblocks were the most frequently reported alternative method of stopping vehicles (42%); ramming, immobilization, and portable barrier strips were rarely permitted;
- 31% of agencies maintained police pursuit statistics or data systematically; and
- municipal and larger agencies were more likely to collect pursuit data.

Shortly after Alpert's study, the Pursuit Management Task Force Report in 1997 attempted to survey 1,420 agencies about their pursuit policies, of which 419 responded (Bayless and Osborne, 1998). While the PMTF report was more focused on pursuit technologies, this survey did include items on written pursuit policies. Bayless and Osborne discovered (obtained from Bayless and Osborne, 1998: 7-9):

- 99% of responding agencies allowed their officers to pursue, and 97% had written policies;
- 85% of pursuit policies required supervisory control;
- 41% allowed the use of tire deflation devices; these devices were also most often noted as efficient;
- 50% of agencies allowed officers to use one of the following: ramming, boxing-in, or channeling techniques to stop vehicles (35% of policies allowed ramming, 29% allowed the use of boxing-in as a pursuit-ending technique, 25% allowed the use of barricading);
- 3% of agencies allowed for the use of "PIT" Maneuvers;[17] and
- 25% of agencies were aware of pursuit technologies, but chose not to use them for various concerns, including cost, availability, potential liability, and a lack of knowledge on the effectiveness of such technologies.

[17] "PIT" or Pursuit Intervention Technique refers to maneuvers in which the pursuing vehicle makes contact with the backend of the fleeing vehicle, causing it to spin out, or lose control, prompting the fleeing driver to stop.

Other smaller-scale policy studies include Sharp (2003) and Hicks (2006). Sharp (2003) examined the policies of thirty agencies of different specialties and sizes and found that (obtained from Sharp, 2003:70-72):

- 93% of agencies reported that they limited the number of cars involved, usually to two;
- unmarked cars were generally discouraged from pursuit and were required to end pursuits when a marked unit became available;
- 70% of agencies changed their policies within the three years prior to the study;
- in just over half of the cases, respondents reported the supervisor made the decision on whether or not to pursue, with just 32% of respondents leaving it up to the individual officer and 15% leaving it up to the commander; and
- 70% of agencies reported pursuits being allowed for less than felony offenses.

Hicks (2006) examined only U.S. state-level policing agencies (forty-nine state police and highway patrol agencies plus the Honolulu Police Department). Hicks received a total of 47 police pursuit policies from these 50 solicited agencies, in which she divided different aspects of policies into "administrative" or "operational" elements. Administrative elements related to bureaucratic operations such as record keeping, report writing, definitions, and safety, while operational elements emphasized officer conduct such as speed, shooting from the vehicle, "boxing in", off road pursuits, and caravanning[18]. Hicks found that (obtained from Hicks, 2006:116):

- combining all of the policies collected, 63.6% of all administrative elements were included in these policies;
- policy elements most likely to be included in state law enforcement agencies' pursuit policies were: safety (100%); definitions (85.1%); pursuit restrictions (95.7%); seriousness of offense (85.1%); report writing (82.9%); lights and sirens provisions (93.6%); caravanning (93.6%); unmarked car/motorcycle (78.7%); specifics of pursuit conditions (82.9%); and termination (97.8%); and
- other policy elements which were less pronounced across written policies were: authority to pursue (55.3%); intentional collisions (63.8%); shooting from vehicle (61.7%); speed (42.5%); aerial assistance (42.5%); and tire deflation devices (63.8%). Some of the least likely variables to be included were: noncompliance (34%); boxing in (25.3%); training (27.6%); paralleling (25.3%); and off road pursuits (2.1%).

[18] Caravanning typically refers to when three or more police vehicles align themselves in a pursuit. Some policies allow for three vehicles to pursue fleeing suspects but prohibit caravanning.

A Current Analysis of a Sample of Pursuit Policies

To add to and provide an updated analysis of pursuit policies, we conducted a content analysis on a stratified sample of current pursuit policies collected in 2007. Our strategy was to examine policies not from a representative sample of U.S. agencies, but rather, a stratified sample from agencies within different types of pursuit policy categories. The reason for taking this approach was that given the goal of the IACP database being used generally across agencies with varying types of pursuit policies, and given the fact that preference for different types of policies change with current environments, we wanted to collect enough policies within each pursuit policy type to gain a sense of the focus of each.

To accomplish this stratified sample, we used the most recent *Law Enforcement Management and Administration Survey* or "LEMAS" (see U.S. Department of Justice, Bureau of Justice Statistics, 2006). At the time of our survey, only the 2003 LEMAS information was available. Specifically, we used Question 57 of the 2003 LEMAS to guide our selection, which asked, "Which of the following best describes your agency's written policy for pursuit driving?" Choices included *discouragement*, which LEMAS describes as "discouraging all pursuits", *judgmental*, described as "leaves decisions to officer's discretion", and *restrictive* as "restricts decisions of officers to specific criteria such as type of offense, speed, etc."

Of the 2,859 agencies that responded to the 2003 LEMAS, 99.8% answered this question, and the results are provided in Table 3. Overall, agencies tend to describe their policy as restrictive. Large agencies were significantly more likely to describe their agencies as restrictive while smaller agencies were significantly more likely to describe their policy as judgmental or discouragement.[19]

Table 3. Types of Pursuit Policies in the United States According to the 2003 LEMAS[20]

	Discouragement	Judgmental	Restrictive	Other
All agencies	4.7%	22.5%	66.5%	3.3%
Large (≥ 100 sworn)	3.3%	18.7%	72.9%	3.8%
Small (< 100 sworn)	5.3%	24.2%	63.5%	3.0%

While this question only provides a general categorization of agencies' pursuit policies in 2003, it was the best available for our purposes. We randomly selected twenty-five agencies from the police agencies that fell into each of these four categories. Further, we also sampled only from "large" (greater than or equal to 100 sworn officers) state, county, and municipal agencies from the 2003 LEMAS in hopes of obtaining a high response rate in the short period of time that this report was commissioned.

Agency chief executive officers (chiefs, commissioners, superintendants, head sheriffs, etc.) were contacted by phone, email, and fax and asked to provide us with a copy of their pursuit

[19] These differences were statistically significant at the $p<.01$, $p<.01$ and $p<.05$ levels, respectively.

[20] Percentages may add up to less than 100% because of either missing responses or responses that the agency does not have a written policy pertaining to pursuit driving.

policies. In total, 77 of the 100 agencies we contacted, some after multiple follow-ups, agreed to provide us with their written pursuit policies to examine. Within each of our strata, the response rates were fairly even. For those agencies classified in the 2003 LEMAS as "Judgmental", 84% or 21 of the 25 agencies sent us their written pursuit policies. For both the "Restrictive", and "Other" categories, 76% or 19 of the 25 agencies in each group sent us their written pursuit policies. For the "Discouragement" strata, 72% or 18 or the 25 agencies sent us their written pursuit policies.

To examine the content of submitted policies, we examined each policy for the inclusion of twenty-seven components of police pursuit policies which we identified as common elements of police pursuit policies. These components were compiled by examining the content of IACP's model policy, other sample policies,[21] and previous research on police pursuit policies (Alpert et al., 1996; Bayless and Osborne, 1998; Hicks, 2006; Sharp, 2003). Additionally, as our goal was exploratory, we did not restrict ourselves to a set number of components at the outset, but allowed for a flexible approach to add policy components that emerged when examining the submitted policies. When a component was added, previously coded policies were then recoded with the additional component.

The twenty-seven component names and their descriptions that we collected were:

1. **Pursuits Allowed**: Does the policy allow for officers to engage in pursuits?

2. **Effective Date**: What year was the policy put into effect or most recently revised?

3. **Supervisor Authorization**: Does the officer need prior authorization from a supervisor to engage in a pursuit?

4. **Supervisor Termination**: Does the policy have a provision that makes the supervisor responsible for terminating the pursuit at any time?

5. **Communication**: Does the policy include a section on how information is to be communicated from the pursuing officer to other personnel during a pursuit?

6. **Officer Safety**: Does the policy mention anything regarding officer safety?

7. **Suspect Safety**: Does the policy mention anything regarding suspect safety?

8. **Public Safety**: Does the policy mention anything regarding public safety?

9. **Off road**: Are off road pursuits permitted?

10. **Roadblock**: Are roadblocks permitted?

11. **Tire Deflation:** Are tire deflation devices permitted?

[21] Some policies examined were located at PursuitWatch.org's Pursuit Policies Database: http://www.pursuitwatch.org/pursuit_policies/pursuit_policies_database_project.htm .

12. **Intentional Collision**: Are intentional collisions, PIT maneuvers (see footnote 17), or other contact-intervention techniques permitted?

13. **Paralleling**: Are vehicles which are not directly engaged in the pursuit allowed to follow along parallel streets?

14. **Pursuits Recorded**: Does the policy require that pursuits are recorded in a report?

15. **Limits Speed**: Does the policy limit the speed of a pursuing vehicle?

16. **Wrong Way**: Is driving down the wrong way of a road, street, or highway permitted?

17. **Weather**: Does the policy require certain weather conditions to exist in order for pursuits to continue?

18. **Visibility**: Does the policy require certain visibility conditions to exist in order for pursuits to continue?

19. **Traffic**: Does the policy require certain traffic conditions to exist in order for pursuits to continue?

20. **Offense**: Does the policy specify which offenses warrant a pursuit?

21. **Number of vehicles**: How many units can actively pursue the fleeing vehicle? If the number of vehicles was limited except with supervisor authorization, the number indicated without permission was used.

22. **Aviation**: Does policy discuss aerial assistance?

23. **Unmarked Cars**: Can unmarked cars engage in pursuits?

24. **Motorcycles**: Can motorcycles engage in pursuits?

25. **Special Use of Force**: Does policy outline use of force provisions? Most policies indicate that the same use of force applies as for any police work. If the policy strictly forbids contact in any form, then special use of force is marked “no contact”. If the policy describes any contact as deadly force, then special use of force is marked “contact is deadly force.” Some policies mention use of force in other capacities.

26. **Suspect ID**: Does the identification of the suspect end a pursuit?

27. **Formalization**: Where is the agency’s pursuit policy found?

Results of the Content Analysis

Descriptive Statistics

Table 4 shows, for each of the 27 components collected, the percentage of agencies in total and in each strata that answered each choice provided. Note, that of the 77 agencies which provided us with pursuit policies, 95% (n=73) had pursuit policies which allowed officers to pursue vehicles given certain conditions, while four did not allow high-speed pursuits. Thus, in the "Total" Column, we calculate statistics based on a base of 73 agencies, except for the first component.

Further, an important caveat to note at the outset was an interesting finding regarding the sample itself. Roughly 30% of the responding agencies indicated that their pursuit policies either developed, changed, or were updated after 2003 – the year which the LEMAS data was collected, although the extent of these changes are unknown from the policies provided. And, over half of the agencies did not report the dates in which their policies went into effect. Thus, while Table 4 divides responses according to the agency's initial response to the 2003 LEMAS question, the percentages reflect the current policy provided to us in 2007.

What this means is that differences across LEMAS categories, while interesting in their own right, should be considered in light of this caveat. Thus, we encourage agencies reading this report to focus on the "Total" column (shaded) in terms of obtaining broad generalizations about the pursuit policies in 2007 and the LEMAS category columns for interesting, albeit exploratory, insights.

TABLE 4 APPEARS ON NEXT PAGE

Table 4. Descriptive Statistics of the 27 Components in our Sample of Pursuit Policies

	Total (N=73)[22]	Discouragement (n=18)	Judgmental (n=21)	Restrictive (n=19)	Other (n=19)
Pursuits Allowed (N=77)					
No	5.2% (4)	16.7% (3)	0.0% (0)	0.0% (0)	5.3% (1)
Yes	94.8% (73)	83.3% (15)	100.0% (21)	100.0% (19)	94.7% (18)
Prior Supervisor Authorization					
No	98.6% (72)	93.3% (14)	100.0% (21)	100.0% (19)	100.0% (18)
Yes	1.4% (1)	6.7% (1)	0.0% (0)	0.0% (0)	0.0% (0)
Supervisor Termination					
No	45.2% (33)	100.0% (15)	0.0% (0)	0.0% (0)	100.0% (18)
Yes	52.1% (38)	0.0% (0)	95.2% (20)	94.7% (18)	0.0% (0)
No mention	2.7% (2)	0.0% (0)	4.8% (1)	5.3% (1)	0.0% (0)
Communication					
No	15.1% (11)	13.3% (2)	19.0% (4)	21.1% (4)	5.6% (1)
Yes	84.9% (62)	86.7% (13)	81.0% (17)	78.9% (15)	94.4% (17)
Officer Safety					
No	15.1% (11)	13.3% (2)	23.8% (5)	10.5% (2)	11.1% (2)
Yes	84.9% (62)	86.7% (13)	76.2% (16)	89.5% (17)	88.9% (16)
Suspect Safety					
No	65.7% (48)	73.3% (11)	66.7% (14)	73.7% (14)	50.0% (9)
Yes	34.3% (25)	26.7% (4)	33.3% (7)	26.3% (5)	50.0% (9)
Public Safety					
No	4.1% (3)	6.7% (1)	4.8% (1)	5.3% (1)	0.0% (0)
Yes	95.9% (70)	93.3% (14)	95.2% (20)	94.7% (18)	100.0% (18)
Off Road					
No	1.4% (1)	6.7% (1)	0.0% (0)	0.0% (0)	0.0%(0)
Yes	5.5% (4)	0.0% (0)	9.5% (2)	10.5% (2)	0.0% (0)
No mention	93.2% (68)	93.3% (14)	90.5% (19)	89.5% (17)	100% (18)
Roadblocks					
No	17.8% (13)	33.3% (5)	4.8% (1)	21.1% (4)	16.7% (3)
Yes (with approval)	53.4% (39)	40.0% (6)	42.9% (9)	63.2% (12)	66.7% (12)
Yes (no approval mentioned)	8.2% (6)	6.7% (1)	9.5% (2)	5.3% (1)	11.1% (2)
No mention	20.5% (15)	20.0% (3)	42.9% (9)	10.5% (2)	5.6% (1)
Tire Deflation					
No	0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Yes (with approval)	47.9% (35)	46.7% (7)	38.1% (8)	52.6% (10)	55.6% (10)
Yes (no approval mentioned)	13.7% (10)	26.7% (4)	14.3% (3)	5.3% (1)	11.1% (2)
No mention	38.4% (28)	26.7% (4)	47.6% (10)	42.1% (8)	33.3% (6)

[22] Except for this variable "Pursuits Allowed", all statistics are calculated based on the number of policies provided that *allow* for officers to pursue.

	Total (N=73)[22]	Discouragement (n=18)	Judgmental (n=21)	Restrictive (n=19)	Other (n=19)
Intentional Collision					
No	26.0% (19)	26.7% (4)	19.0% (4)	31.6% (6)	27.8% (5)
Yes (with approval)	28.8% (21)	26.7% (4)	38.1% (8)	31.6% (6)	16.7% (3)
Yes (no approval mentioned)	28.8% (21)	20.0% (3)	23.8% (5)	26.3% (5)	44.4% (8)
No mention	16.4% (12)	26.7% (4)	19% (4)	10.5% (2)	11.1% (2)
Paralleling					
No	16.4% (12)	13.3% (2)	23.8% (5)	15.8% (3)	11.1% (2)
Yes	32.9% (24)	46.7% (7)	28.6% (6)	26.3% (5)	33.3% (6)
No mention	50.7% (37)	40% (6)	47.6% (10)	57.9% (11)	55.6% (10)
Pursuits Recorded					
No	11.0% (8)	6.7% (1)	14.3% (3)	15.8% (3)	5.6% (1)
Yes	89.0% (65)	93.3% (14)	85.7% (18)	84.2% (16)	94.4% (17)
Limits Speed					
No	95.9% (70)	100.0% (15)	90.5% (19)	94.7% (18)	100.0% (18)
Yes	4.1% (3)	0.0% (0)	9.5% (2)	5.3% (1)	0.0% (0)
Wrong Way					
No	37.0% (27)	26.7% (4)	23.8% (5)	42.1% (8)	55.6% (10)
Yes	19.2% (14)	40% (6)	23.8% (5)	10.5% (2)	5.6% (1)
No mention	42.5% (31)	33.3% (5)	52.4% (11)	47.4% (9)	38.9% (6)
Weather					
Discretionary	91.8% (67)	93.3% (14)	90.5% (19)	94.7% (18)	88.9% (16)
Mandatory	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
No mention	8.0% (6)	6.7% (1)	9.5% (2)	5.3% (1)	11.1% (2)
Visibility					
Discretionary	57.6% (42)	53.3% (8)	38.1% (8)	73.7% (14)	66.7% (12)
Mandatory	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
No mention	42.4% (31)	46.7% (7)	61.9% (13)	36.3% (5)	33.3% (6)
Traffic					
Discretionary	91.8% (67)	93.3% (14)	90.5% (19)	94.7% (18)	88.9% (16)
Mandatory	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
No mention	8.2% (6)	6.7% (1)	9.5% (2)	5.3% (1)	11.1% (2)
Offense					
Any offense	52.1% (38)	33.3% (5)	66.7% (14)	52.6% (10)	50.0% (9)
Misdemeanors or worse	21.9% (16)	26.7% (4)	19.0% (4)	26.3% (5)	16.7% (3)
Felonies only	12.3% (9)	13.3% (2)	9.5% (2)	15.8% (3)	11.1% (2)
Violent felonies only	13.7% (10)	26.7% (4)	4.8% (1)	5.3% (1)	22.2% (4)

	Total (N=73)[22]	Discouragement (n=18)	Judgmental (n=21)	Restrictive (n=19)	Other (n=19)
Number of Vehicles					
No	12.3% (9)	0.0% (0)	28.6% (6)	15.8% (3)	0.0% (0)
1 unit	2.7% (2)	0.0% (0)	0.0% (0)	5.3% (1)	5.6% (1)
2 units	72.6% (53)	93.3% (14)	57.1% (12)	68.4% (13)	77.8% (14)
3 units	12.3% (9)	6.7% (1)	14.3% (3)	10.5% (2)	16.7% (3)
4 or more units	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Air Assistance					
Ends vehicle pursuit	5.5% (4)	6.7% (1)	4.8% (1)	10.5% (2)	0.0% (0)
Requires vehicle to slow down	6.8% (5)	6.7% (1)	9.5% (2)	0.0% (0)	11.1% (2)
Mentioned (no requirements)	16.4% (12)	6.7% (1)	38.1% (8)	10.5% (2)	5.6% (1)
No mention	71.2% (52)	80.0% (12)	47.6% (10)	78.9% (15)	83.3% (15)
Unmarked Cars					
No	15.1% (11)	20.0% (3)	14.3% (3)	15.8% (3)	11.1% (2)
Yes	1.4% (1)	0.0% (0)	4.8% (1)	0.0% (0)	0.0% (0)
Until marked car available	54.8% (40)	40.0% (6)	52.4% (11)	42.1% (8)	83.3% (15)
No mention	13.7% (10)	13.3% (2)	19.0% (4)	21.1% (4)	0.0% (0)
Felony or danger to life only	15.1% (11)	26.7% (4)	9.5% (2)	21.1% (4)	5.6% (1)
Motorcycles					
No	11.0% (8)	6.7% (1)	9.5% (2)	15.8% (3)	11.1% (2)
Yes	2.7% (2)	0.0% (0)	0.0% (0)	0.0% (0)	11.1% (2)
Until marked car available	38.4% (28)	33.3% (5)	47.6% (10)	31.6% (6)	38.9% (7)
No mention	46.6% (34)	60.0% (9)	42.9% (9)	47.4% (9)	38.9% (7)
Felony or danger to life only	1.4% (1)	0.0% (0)	0.0% (0)	5.3% (1)	0.0% (0)
Special Use of Force					
No contact	15.1% (11)	13.3% (2)	14.3% (3)	26.3% (5)	5.6% (1)
Contact is deadly force	60.3% (44)	66.7% (10)	47.6% (10)	57.9% (11)	72.2% (13)
No mention	21.9% (16)	13.3% (2)	38.1% (8)	10.5% (2)	22.2% (4)
Mentioned other	2.7% (2)	6.7% (1)	0.0% (0)	5.3% (1)	0.0% (0)
Suspect Identification					
Discretionary	64.4% (47)	66.7% (10)	57.1% (12)	63.2% (12)	72.2% (13)
Mandatory	4.1% (3)	13.3% (2)	0.0% (0)	5.3% (1)	0.0% (0)
Minor offenses only	5.5% (4)	0.0% (0)	4.8% (1)	15.8% (3)	0.0% (0)
No mention	15.1% (11)	20% (3)	38.1% (8)	15.8% (3)	27.8% (5)

General findings of "pursuit-allowed" policies (n=73)

To further organize our findings, and for those policies which allowed for pursuits (n=73), we grouped components into common themes in Table 5. Doing so reveals further nuances across policies and helps to suggest recommendations that can be addressed using pursuit data.

Table 5. Grouping Policy Components into Common Themes

1. SUPERVISION, MONITORING, AND ACCOUNTABILITY	
Prior supervisor authorization needed	1.4%
Supervisor is responsible for termination	52.1%
Communication	84.9%
Pursuits recorded	89.0%
2. SAFETY	
Officer safety specifically mentioned	84.9%
Suspect safety specifically mentioned	34.2%
Public safety specifically mentioned	95.9%
3. DRIVING CONDITIONS	
Limits placed on officer speed	4.1%
Off road pursuits permitted	5.5%
Driving the wrong way is permitted	19.2%
Visibility considerations are discretionary	57.5%
Weather considerations are discretionary	91.8%
Traffic considerations are discretionary	91.8%
4. VEHICLES INVOLVED	
More than one vehicle can pursue	84.9%
Any mention of air assistance	28.8%
Unmarked cars cannot be used	15.1%
Unmarked cars can be used until marked car available	54.8%
Motorcycles cannot be used	11.0%
Motorcycles can be used until marked car is available	53.4%
5. SITUATIONAL CONTEXT	
Limits Pursuits by Offense Types	47.9%
Suspect identification must end the pursuit	4.1%
6. DEVICES AND TACTICS	
Roadblocks could be used	61.6%
Tire deflation could be used	61.6%
Intentional collision could be used	57.5%
Paralleling could be used	32.9%
Any contact is considered "deadly force"	60.3%

1. Supervision, Monitoring, and Accountability

While many of the policies we examined had incorporated some form of supervision and record keeping component, these components were often "after-the-fact". This finding is not surprising and reinforces the reactive nature of supervision and accountability in policing. Only one agency required prior supervisory authorization to engage in a pursuit, and approximately half of the policies require a supervisor to take responsibility for terminating a pursuit. However, it may be that in the moment prior to when an officer decides to engage in a pursuit, this may be the most opportune point where a knowledgeable and less-stressed third party or supervisor might be able to exercise the greatest control over a future outcome. Furthermore, regular and consistent training about links between outcomes and pursuit environments and characteristics can also provide officers with a better knowledge base in which to make split-second decisions.

Also reflecting the reactive nature of supervision and accountability is that while many pursuit policies have some reporting system for pursuit data collection, rarely (if at all) did agencies indicate requirements in their policies for regular analysis and use of this data to support evaluating or assessing practices. We suspect, like many other policing recording practices, that what Fennessy and Joscelyn mentioned in 1972 still holds true today, even with better data collection systems:

> *"Records of pursuit are filed primarily for self-defense in the event there is adverse public reaction or civil lawsuit."* (Fennessy and Joscelyn, 1972: 396)

The finding that agencies require pursuits to be recorded in some computerized system, however, can be also be interpreted optimistically. It suggests that police agencies (at least those with 100 or more officers) are likely to have the capacity to not only standardize and record police pursuits, but in turn, have to analyze that data. Those already recording data in a computerized system show the ability to submit information in similar ways to a national database.

2. Safety

In examining pursuit policy wording, we found concerns about the safety of officers and the public most often articulated. However, much less often did policies specifically mention the safety of fleeing suspects. Indeed the term "public" may imply the fleeing suspect, but this was not made explicit in these policies. While it is understandable that police agencies are first and foremost concerned with the safety of law-abiding individuals, given that many lawsuits are generated by injured suspects, agencies may wish to consider mentioning suspects in their written policies in a more balanced way.

3. Driving Conditions

With regard to road and driving conditions, as already mentioned, this is where pursuit data as well as existing knowledge could best inform police policies. Specifically, empirical analysis can shed light upon the types of conditions that present the highest risk for negative outcomes. Our content analysis revealed that while agencies do mention weather and traffic conditions in their policies, decisions are often left to the pursuing officer's discretion. With regard to

visibility, the lower percentage for officer discretion is only explained by the fact that the rest of the policies make no mention of visibility at all. Only 4% of pursuit policies examined attempt to limit the speed of the officer, also leaving speed up to the officer's discretion.

However, given that officer speed, weather, visibility, and traffic conditions are often correlated with negative outcomes (see e.g., Rivara and Mack, 2004), perhaps the assumption of discretion should be further examined. Discretion is an important and regular factor of police work, and indeed, can be both positive and negative. What is key in policing is that officer discretion is structured, and structured in ways that leads to optimal, fair, and desirable outcomes. Given that information exists about the connection between weather, road conditions, visibility, and speed such information could structure pursuit policy, even if generally, and also be built into officer training.

4. Vehicles Involved

Most agencies have guidelines in their policies regarding the use of multiple vehicles or unmarked cars. What is interesting about this theme is the low percentage of policies that discuss air assistance. We imagine that the primary reason for this is due to the lack of availability of air assistance, indeed a costly resource. However, we also note that Alpert (1998) has found that helicopter assistance in pursuits can result in high arrest rates and also less injury.

5. Situational Context

Almost 50% of agencies had conditional statements in their policies that limited pursuits based on the possible offenses of which the fleeing suspect might be involved. However, in an age of proactive policing tactics, sometimes the offense may not be known to the police or the initial offense may not be the ultimate target of the stop. Take for instance, pre-text preventative stops. On the surface, these stops are initiated on the grounds of minor traffic offenses, but the goal is often to address a more serious crime problem in the area. Further, previous research suggests that individuals may flee because they are wanted on an existing open warrant, not because, at the time of pursuit initiation, a major crime had been committed.

The bottom line: When pursuits result from an officer's proactive activity (such as using traffic enforcement to reduce crime), less meaningful are pursuit policies which focus on limiting pursuits based on the offense allegedly committed by the suspect. In proactive stops, a suspect's situation often is unknown by the officer. Police agencies with these restrictions need to reconsider their policies in light of new strategies they are using.

6. Devices and Tactics

Finally, there is regular mention of the four tactics and special devices in police pursuit policies – roadblocks, tire deflation, collisions and paralleling. The regular appearance of these four strategies in written pursuit policies justifies their evaluation, especially roadblocks, tire deflation, and intentional collision, whose use is allowed in the majority of pursuit policies. Given that the majority of these policies examined also consider any contact tactic to be "deadly

force", this in itself warrants careful evaluation of the costs and benefits of these tactics, and funding agencies should focus on the evaluation of these strategies.

Pursuit Policies and the IACP Database

Our analysis of the current content of pursuit policies highlights a number of points that make the IACP Database especially relevant. First, as already emphasized by other studies of police pursuits, written policies often lack an evidentiary base. When examining common components of policies, it appears that policies are often made of a medley of different components, many of which are only mentioned ambiguously, leaving room for much officer discretion. The vagueness of some of these categories is surprising, given what we already know about correlates to negative outcomes of police pursuits from previous research. Again, while discretion is an important and common phenomenon in policing, evidence-based actions are those where discretion is structured (through information, training, specific policies, supervisory control, research, accountability, etc.) and structured towards specific goals of the agency (criminal apprehension, crime prevention, safety, concern for the community, etc.).

Furthermore, policy components such as supervision, accountability, and strategic research are often after-the-fact, reactive, or not included. Yet, these are important components that ensure not only that policies are implemented correctly, but also that they are tested, evaluated, or at least informally assessed for either cost or outcome effectiveness.

It is clear from our study of current pursuit policies in the United States that such policies need to be more evidence-based. What this implies is that:

- agencies must pay attention to and incorporate existing research and knowledge into the writing of these policies;
- agencies must develop reporting practices and use information systems and analysis to tailor and build policies based on sound evidence gathered;
- agencies must incorporate existing knowledge into training in police driving and pursuits; and
- agencies must disseminate, and familiarize patrol with, pursuits research and data.

5 The IACP Police Pursuit Database

Sections 1 through 4 emphasize, from different perspectives, the importance of collecting, analyzing, and applying information on high speed pursuits to managerial and organizational policies and strategies. Pursuit data collection and use are central to these issues, whether police managers are concerned about balancing criminal apprehension with safety and liability, confronting the new demands of proactive innovations, understanding the nature, characteristics, and effects of pursuits, or modifying pursuit policies to be more evidence-based.

The IACP Police Pursuit Database is one endeavor which seeks to address the lack of standard data collection and information use for police pursuits. In this section, we describe the project, the agencies that helped pilot and test the database during its development stage, and the database interface. We also provide analysis of the existing data that have been submitted by the pilot agencies, as well as the results from a short user survey conducted by the IACP in 2005.

Participating Pilot Agencies

The IACP Police Pursuit Database is a voluntary, web-based, and secure system in which agencies can submit reports of individual pursuits. Data provided in reports are organized into a database on a secure server, which then allows agencies to access their own data as well as information on other agencies of similar size (the names of other agencies are not identified) or across larger regional areas, to examine broader trends. Being able to standardize and access both their own data as well as information from other agencies, gives participating police departments the ability to make more informed decisions at both the micro (individual pursuit situations) and macro (pursuit policy) levels. The database also provides a wealth of information of which researchers can study.

The success of the IACP Database, of course, depends on not only the accurate, comprehensive, and complete submissions of reports of pursuits by individual agencies, but also the participation of many agencies, so as to increase the validity and power of comparative analysis. In total, 56 agencies across thirty states voluntarily participated to pilot and test the IACP Pursuit Database. Although not a representative sample of all police agencies in the United States, these agencies were instrumental in testing and modifying the system's functionality, providing feedback on the database's usefulness and efficiency, and also provided one of the largest collections of police pursuits from which to analyze. In total, these agencies submitted 7,737 reports of pursuits over approximately seven years that the database was piloted. Compared to existing studies on police pursuits discussed in our literature review, both the quantity of pursuits collected and the range of jurisdictions represented is unusual.

While we do not name any specific agency that participated due to agreements of confidentiality between the IACP and participating agencies, we do provide general statistics about their characteristics. This information not only gives a sense of the type of agencies that might be willing to participate in such an endeavor, but also tell us about the types of agencies that are underrepresented in the database. Because the IACP Pursuit Database promotes information sharing and comparison across agencies as well as accurate recording of pursuits within

agencies, it is important that the final use of the database secures the participation of either the vast majority of U.S. law enforcement agencies, or in the least, a representative sample large enough to allow for meaningful comparative reports to be generated.

We begin with Table 6, which shows the percentage of IACP agencies by sworn officer size categories, compared with size characteristics of U.S. agencies in general. It is well known that almost all of the agencies in the United States have under 100 sworn officers. As Table 6 indicates, participants in the IACP Database, while most strongly represented in this size category of under 100 sworn personnel (53.6%), tend to more often include larger agencies (the second largest group of agencies falls in the 100-249 size category). These findings are consistent with previous research by Alpert and his colleagues who found that larger agencies were more likely to record police pursuits. Further, as Weisburd and Lum (2005) have found, the diffusion of information-management innovations often occurs more frequently among agencies with more sworn officers or who serve larger populations.

Table 6. Size of Participating IACP Database Agencies Compared to U.S. Agencies

	% U.S. Agencies*	% IACP Agencies**
1 – 99	93.9%	53.6%
100 – 249	4.0%	16.1%
250 – 499	1.2%	7.1%
500 – 999	0.5%	12.5%
1000 or more	0.4%	10.7%

*Obtained from the *2004 Census of State and Local Law Enforcement Agencies* (U.S. Department of Justice, Bureau of Justice Statistics, 2007), which are the percentages calculated from 17,876 agencies.
**We used the 2005 *Uniformed Crime Reports* to obtain the number of sworn personnel of participating IACP agencies as rough estimate of the size of each agency during the pilot period. We could not use LEMAS, which only has information for a sample of agencies under 100 sworn officers, or the Census of State and Local Law Enforcement Agencies which does not provide the data for individual agencies surveyed.

Furthermore, as Table 7 illustrates, the vast majority of agencies who volunteered to participate are from municipal agencies, again reflecting the general type of agency in the United States. Because only 43 agencies of the IACP agencies are represented in the 2003 *LEMAS*, we were unable to discern with more specificity and for all participating agencies more detailed characteristics of each agency. However, what we did find was that the IACP participating agencies included a larger proportion of state agencies overall (than state agency proportions in the U.S.). This is not surprising given that the policing of traffic violations is much more prevalent among state agencies, which have jurisdiction over state highways and freeways. Much less likely to participate in the Pursuit Database were sheriff's organizations, who make up 17.2% of U.S. law enforcement agencies, but only 7.1% of those participating in the IACP database. This is also expected given the different law enforcement roles that Sheriff agencies play (for example, transporting prisoners or serving in a corrections capacity).

Table 7. Types of Participating IACP Database Agencies Compared to U.S. Agencies

	% U.S. Agencies*	% IACP Agencies
Municipal/County/Local	71.4%	78.6%
Sheriff	17.2%	7.1%
State	0.3%	8.9%
Other**	11.2%	5.4%

* Obtained from the *2004 Census of State and Local Law Enforcement Agencies* (U.S. Department of Justice, Bureau of Justice Statistics, 2007), which are the percentages calculated from 17,876 agencies.
** The *Census* records "Special Jurisdictions" (8.3%) and "Constable/marshal" (2.9%) as agency types. In the IACP Database, one agency was a non-U.S. agency, while two agencies represented special jurisdictions.

The IACP Database System and Registry

The 56 participating agencies were asked to submit reports of all police pursuits that occurred, beginning from the day in which they enrolled, through a secure, internet-based system using electronic forms. Agencies could also submit reports of pursuits that occurred prior to the enrollment date. Guidelines were provided to each participating agency as to how to submit pursuit information, as well as describing the types of reports that could be generated. These guidelines are found in the IACP's *Police Pursuit Database User's Manual* (see Appendix B). More about the system in its current state and also obtaining access into the system can be obtained from the International Association of Chiefs of Police.

Figure B shows the sign-in screen of the Police Pursuits Database and Figure C, the home screen with menus once an agency is signed in.

Figure B. Sign-In Screen of the IACP Police Pursuit Database

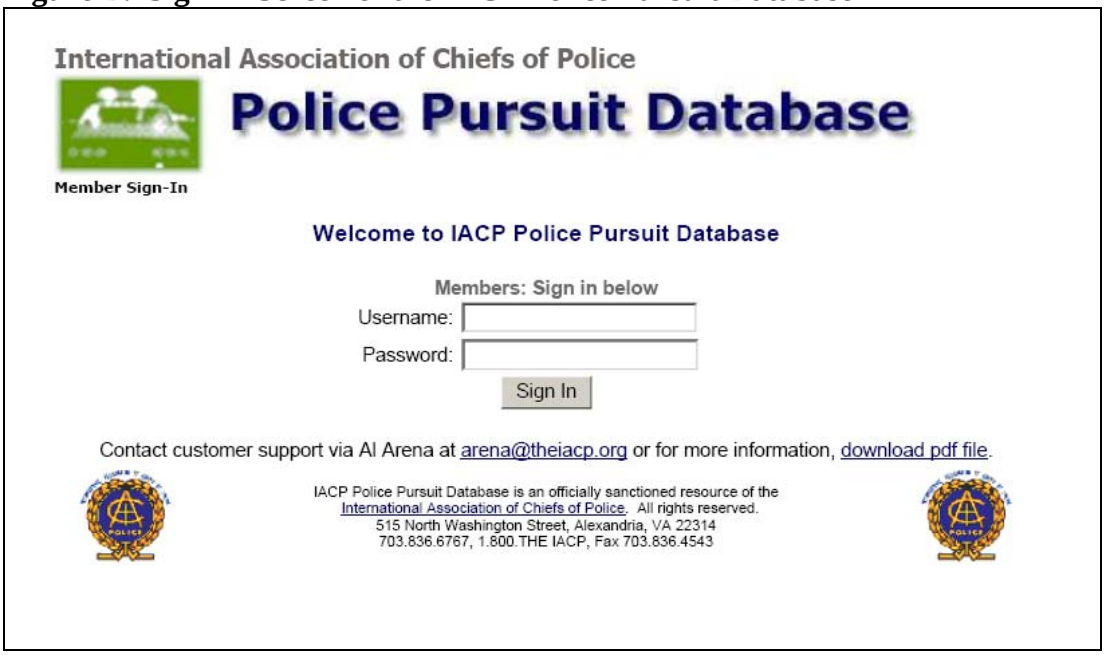


Figure C. Home Screen of the IACP Police Pursuit Database

When submitting a report of a pursuit, the secure system asks agencies to provide information in an easy-to-use, point-and-click data entry interface (shown in Figure D). The following "Field Element Definitions", obtained and adapted from *The User's Manual*, indicate the categories of information collected:

Field Element Definitions

Department Report/Tracing #

Internal number assigned to pursuit used to trace event – department record keeping mechanism.

Supervisor Monitored/ Additional Agencies Involved

Did the initiating officer's supervisor monitor the pursuit? Defaults to "Yes."

How many additional units and agencies were involved in the pursuit? Both fields default to "0".

Starting Termination/ Date and Time

Time of pursuit initiation and termination.

Initial Violation

What was the initial violation – the reason for the pursuit? Violation should be classified as one of the following:

- Traffic Violation: DWI, Speeding, Reckless Driving, Other Routine Traffic
- Misdemeanor: DWI, Assault/Battery, Firearm Related, Other
- Non-violent Felony: Burglary, White Collar, Other
- Violent Felony: Homicide, Robbery, Violent Assault, Rape
- Assisting Other Department

Demographics

What are the jurisdiction demographics? Classified as one of the following:

- Urban
- Rural
- Suburban
- Interstate Highway

Light Conditions

What are the pursuit light conditions? Classified as one of the following:

- Light
- Dusk
- Dark

Approximate Average Speed

What was the approximate average speed of the pursuit? This should be recorded as the number of miles per hour above the highest posted speed limit.

- Low: 0 – 10 miles per hour
- Medium: 11 – 25 miles per hour
- High: 26 or miles per hour

Traffic Conditions

What were the pursuit traffic conditions? Classified as one of the following:

- Light
- Moderate
- Heavy

Road Conditions

What were the pursuit road conditions? Classified as one of the following:

- Dry
- Ice
- Wet
- Snow

Maximum Pursuit Speed

What was the maximum speed reached during the pursuit?

Reason for Termination

Why was the pursuit terminated? Indicate which one of ten possible methods:

- Officer Discontinued
- Collision – Officer
- Collision – Suspect
- Violator Eluded
- Violator Eluded - Foot
- Driver Stop
- Exited Jurisdiction
- Police Intervention (see below)
- Supervisor Discontinued
- Vehicle Disabled

Termination Method

If pursuit ended due to Police Intervention, indicate termination method (defaults to N/A):

- PIT Maneuver
- Tire Deflator
- Roadblock
- Rolling Roadblock
- Remote Engine Disabler (See below)
- Other (See below)

Detail Engine Disabler/Other

If termination method is Remote Engine Disabler or Other (above), describe product (i.e. manufacturer/model); if Other Termination Method indicated above, please describe.

Distance Trailed

What was the distance trailed?

Arrest/Charges

What was the suspect arrested and charged with?

Initiating Officer Information

- Gender of the first officer to begin pursuit.
- Age of the first officer to begin pursuit.
- How long has initiating officer been a police officer in this department?
- ID Number – defaults to "0000".

Suspect Information

- Gender of the suspect/driver of vehicle pursued.
- Age of the suspect/driver of vehicle pursued.
- Race of the suspect/driver of vehicle pursued (African American, Asian, Caucasian, Hispanic, Other or Unknown
- License status of suspect
- Suspect impaired by alcohol, drugs, mental illness, other or none?

Injury/Fatality and Property Damage

Indicate injuries, fatalities, and/or property damage in four categories. Numbers of injuries and fatalities should be indicated as appropriate (all default to "0"):

Law Enforcement Vehicle	[#] Minor	[#] Serious	[#] Fatality
Fleeing Vehicle	[#] Minor	[#] Serious	[#] Fatality
Uninvolved Vehicle/Persons	[#] Minor	[#] Serious	[#] Fatality
Other Property Damage	[#] Minor	[#] Serious	[#] Fatality

Indicate if property damage to each vehicle/other property.

Approximate Property Damage $

Estimate the total amount of property damage, if applicable.

These data elements are entered into an online web-form shown in Figure D.

Figure D: Screenshot of the IACP Police Pursuit Data Entry Interface

Date	Department Report/Tracing #	
Pursuit – General Information		
Supervisor Monitored: [ ] Yes [ ] No	# Additional Units:	# Additional Agencies:
Starting Date/Time: (eg 1/10/2001 14:30:01)	Termination Date/Time: (eg 1/10/2001 14:32:00)	
Initial Violation: **Traffic** [ ] DWI [ ] Speeding [ ] Reckless Driving [ ] Other Routine Traffic **Criminal Misdemeanor** [ ] DWI [ ] Assault/Battery [ ] Firearm Related [ ] Other **Non-violent Felony** [ ] Burglary [ ] Stolen Auto [ ] White Collar [ ] Other **Violent Felony** [ ] Homicide [ ] Robbery [ ] Violent Assault [ ] Rape [ ] Other **Assisting Other Department [ ]**		
Environment/Conditions During Pursuit		
Demographics: [ ] Urban [ ] Suburban [ ] Rural [ ] Interstate	Traffic Conditions [ ] Light [ ] Moderate [ ] Heavy	
Light Conditions: [ ] Light [ ] Dusk [ ] Dark	Road Conditions: [ ] Dry [ ] Wet [ ] Ice [ ] Snow	
Avg Speed > Limit: [ ] 0 - 10 [ ] 11 – 25 [ ] 26+ [ ] Below Limit	Maximum Pursuit Speed: MPH	
Termination		
Reason for Termination: [ ] Driver Stop [ ] Collision – Officer [ ] Collision - Suspect [ ] Exited Jurisdiction [ ] Officer Discontinued [ ] Supervisor Discontinued [ ] Violator Eluded [ ] Violator Eluded - Foot [ ] Police Intervention [ ] Vehicle Disabled		
If Police Intervention: [ ] PIT Maneuver [ ] Roadblock [ ] Rolling Roadblock [ ] Tire Deflator [ ] Remote Engine Disabler (see below) [ ] Other (see below)		
Describe Engine Disabler/Other:		
Distance Trailed:		
Arrest/Charges:		
Officer/Suspect Information		
Officer Sex: [ ] M [ ] F / Officer Age:	Years of Service:	Initiating Officer ID#:
Suspect Sex: [ ] Male [ ] Female [ ] Unknown	Age:	Licensed: [ ] Yes [ ] No
Suspect Race: [ ] Caucasian [ ] African American [ ] Hispanic [ ] Asian [ ] Multi-Ethnic [ ] Other [ ] Unknown		
Suspect Impairment: [ ] None [ ] Alcohol [ ] Drugs [ ] Mental/Illness [ ] Unknown		
Injury/Fatality		***Property Damage:***
Law Enforcement Vehicle: [ ] Minor [ ] Serious [ ] Fatality		[ ] Yes [ ] No
Fleeing Vehicle: [ ] Minor [ ] Serious [ ] Fatality		[ ] Yes [ ] No
Uninvolved Vehicle/Person: [ ] Minor [ ] Serious [ ] Fatality		[ ] Yes [ ] No
Other Property Damage:		[ ] Yes [ ] No
Estimated/Approx. Property Damage: $		

Once reports of individual pursuits are entered through this system, each entry is organized into a database which can then be searched and aggregated by participating agencies, both within their own data and also across other participating agencies. These reports can be generated for all of the information captured in the online interface or for specific variables of interest. Agencies can also examine pursuit data within a particular date range. Reports that can be generated include:

- **Information about an agency's own data**: An agency can ask the database to run aggregate statistics about the pursuit report it enters, on any variable in the report.

- **Statewide information**: Aggregated statistics on pursuits from agencies within a selected state can be obtained.

- **Nationwide information**: Aggregated statistics on pursuits from all participating agencies can be obtained.

- **Comparable jurisdictions (Population)**: Aggregated statistics on pursuits from agencies that operate in jurisdictions which have a comparable population to the user's agency's jurisdiction can be obtained.

- **Comparable jurisdictions (Population Density)**: Aggregated statistics on pursuits from agencies that operate in jurisdictions which have a comparable population density to the user's agency's jurisdiction can be obtained.

- **Comparable jurisdictions (Agency Type)**: Aggregated statistics on pursuits from agencies that are similar in agency type to user's agency (e.g. State, Municipal, County, Sheriff, Port, etc.) can be obtained.

- **International information**: Aggregated statistics on pursuits that occur outside of the United States can be obtained.

Analysis of the IACP Pursuit Data

Although the police pursuits in the IACP database are not a representative sample of police pursuits across the United States, an analysis of the submitted police pursuits does provide a number of interesting findings and suggestions to police managers regarding pursuit policy and practice, and also sheds light on how the IACP system can be improved. Furthermore, the data analyzed here represents an unusually large quantity of pursuits (n=7,737) across multiple jurisdictions (56 agencies from 30 states). For this report, statistical information was compiled from the data and organized into the following categories:

1. Frequency of data entry into the IACP Database
2. Estimated rate of pursuits per year for participating agencies
3. Reason for initiating pursuits
4. Negative outcomes - injuries and accidents
5. Conditions/environment of pursuits
6. Characteristics of pursuits
7. Characteristics of fleeing individuals
8. Characteristics of pursuing officers
9. Reasons for pursuit termination

1. Frequency of data entry into the IACP Database

In total, 7,737 pursuit records were entered into the IACP database between February 2001 and when the data were downloaded for this study (May, 2007). The yearly breakdown of when pursuits were submitted is shown in Table 8 and the breakdown of when the pursuits actually occurred appears in Table 9. It should be noted that not every police agency submitted pursuits every year, an inconsistency that needs to be addressed by IACP, and the database does not provide enough information to determine why this occurred. However, when examining each police agency individually, the yearly counts for each agency sometimes are fairly consistent and sometimes are not.

Table 8. Number of Pursuits Year of Data Entry

Year	N (pursuits)	% of Pursuits	# of agencies submitting per year
2001	210	2.7%	8
2002	706	9.1%	22
2003	**1,155**	**14.9%**	**24**
2004	**1,183**	**24.3%**	**33**
2005	**2,037**	**26.3%**	**30**
2006	**1,299**	**16.8%**	**25**
2007	447	5.8%	19
Total	7,737	100.0%	

Table 9. Number of Pursuits by Year of Occurrence

Year	N	% of Pursuits
1997	7	0.1%
1998	35	0.5%
1999	29	0.4%
2000	75	1.0%
2001	447	5.8%
2002	778	10.1%
2003	**1,594**	**20.6%**
2004	**1,748**	**22.6%**
2005	**1,562**	**20.2%**
2006	**1,229**	**15.9%**
2007	233	3.0%
Total	7,737	100.0%

On average, Table 8 shows that 23 agencies submitted information each year. It appears that the most consistent submissions of pursuit reports into the IACP database occurred once the project was underway in 2003 through 2006, where an average of approximately 28 agencies submitted each year. It should be noted that the drop in numbers in 2007 is due to the data download for this final report May of 2007, although data collection has continued.

Alpert et al. (2000) has discussed the problem of base rates in data collection regarding police pursuits. In particular, there may be pursuits that the police believe are too informal to record in a report. Or, these numbers may be biased towards pursuits that resulted in an accident or injury. Although individual police agency information cannot be presented here, an analysis of the proportion of reported pursuits that resulted in any accident or injury for each department revealed both consistency and inconsistency in proportions over time. Indeed, this may represent actual variations in the proportion of reports that did result in an accident (as the base rates for some agencies are low to begin with). However, just from this data, such conclusions cannot be drawn.

2. Estimated rate of pursuits per year for participating agencies

One research question of interest has been in estimating the rate of police pursuits per year per 100 or 1000 sworn officers (see Alpert et al., 1996; Kenney and Alpert, 1997). In Alpert and his colleagues' research, after surveying police agencies in 1994-1995 regarding the number of pursuits estimated to have taken place across jurisdictions, they discovered that in city and county agencies, the rate of pursuits per 100 officers was reported by agencies to be approximately between 10 and 11.[23] Interestingly, even though the agencies who voluntarily participated in the IACP Database are not a representative sample, and even though we are unsure whether each agency submitted all pursuits which occurred in their jurisdiction, we

[23] Alpert and his colleagues actually calculated this rate per 1,000 officers (see Table 4 in Kenney and Alpert, 1997), but since most of the agencies are smaller, we adjusted this rate to reflect per 100 officers to be consistent with our calculations.

discovered approximately the same number of rate of pursuits reported per year, per 100 officers. When just examining the time period of 2003 – 2006 (which we believe to be the most consistent reporting period), we found 46 of the 56 agencies reporting pursuits during this time frame. The rate at which these IACP-participating agencies reported pursuits was approximately 11 per 100 officers per year.[24]

3. Reason for initiating pursuits

Table 10 shows the breakdown of reasons given for reports of pursuits in the IACP Database. The most frequent reason was that the officer believed a traffic violation had occurred (42.3% of pursuits in the IACP database initially began as a traffic-related concern). This is consistent with existing research. Combining the second and third most prevalent reasons – the belief that the vehicle was stolen or that the driver was intoxicated, over three-fourths of all pursuits recorded had something to do with traffic/vehicular offenses.

Table 10. Reason Given for Why a Pursuit was Initiated

	N	%
Traffic violation	3,271	42.3%
Vehicle was believed to be stolen	1,409	18.2%
Driver believed to be intoxicated (DWI)	1,150	14.9%
Violent felony	665	8.6%
Non violent felony	592	7.5%
Other misdemeanors	450	5.9%
Assisting other departments	200	2.6%
Total	**7,737**	**100%**

This finding is interesting in light of our discussion in Section 3 of this report. In the current environment, traffic-related law enforcement is increasingly being used for proactive policing and pre-textual stops, which in turn can potentially increase the possibility of vehicular pursuits. Given the increased demand for this promising policing intervention, agencies need to match these demands with better policies that address police vehicular pursuits, given that they could increase. A similar point was also made in early research by Alpert and Dunham (1988), who found that accidents were more likely to occur when police were engaged in what they called "BOLO", or "be-on-the-lookout" activities, as opposed to traffic stops. These activities occurred when police were instructed to keep an eye out for certain individuals. Somewhat similarly, when police are "on the lookout" for certain types of offenders/activities in hot spots in a more proactive manner, this may also lead to a change in the types and frequency of negative outcomes.

[24] To calculate this rate, we took the average number of pursuits recorded to have occurred each year, for 2003, 2004, 2005, and 2006 for each agency in which data was available. We then calculated the rate of pursuits recorded per 100 using the 2005 UCR statistics for number of sworn officers.

4. Negative outcomes – injuries and accidents

23.5% of all pursuits recorded in the IACP database had a negative outcome, or involved some type of accident involving an injury or property damage (Table 11). Approximately 9% or 694 of the recorded 7,737 pursuits resulted in some type of injury to the police, bystanders, or the suspect. The percentage of total accidents falls generally into the range of injuries and accidents that we have seen in other studies (between 20 to 40%), however the calculation of these percentages depends on what exactly the police agencies are reporting and the validity of this base number. Because the IACP Database relies on the participating agencies' internal accountability systems in reporting police pursuits which can be influenced by their organization's culture and how each agency defines "pursuit", these factors can affect this proportion. As a recommendation to the IACP, we suggest standardized mechanisms that guide participating agencies as to when an action should be reported as a "pursuit" into this database, and accountability mechanisms to ensure that reports filled out completely and consistently.

Table 11. Injury and Damage Outcomes of Police Pursuits

	N	% of pursuits
No property damage or injury	5,920	76.5%
Property Damage	1,123	14.5%
Injury	694	9.0%
Total	**7,737**	**100%**

When just examining those pursuits reported that resulted in injuries (n=694), we found that these reports actually accounted for 900 injuries (25% of the 694 reports indicated multiple individuals injured). The vast majority of these injuries were minor (81%). As Table 12 shows, of the individuals involved in pursuits – police, bystanders, and suspects – suspects are most likely to sustain injury during a pursuit. The second most at-risk group during a police pursuit are bystanders.

Table 12. Pursuit-related Injuries by Seriousness of Injury and Involved Party*

	Police	Bystanders	Suspects	Total Injuries
Minor Injury	108 (12%)	153 (17%)	471 (52%)	732 (81%)
Serious Injury	16 (2 %)	30 (3%)	100 (11%)	145 (16%)
Fatal Injury	1 (0%)	6 (1%)	16 (2%)	23 (3%)
Total	125 (14%)	188 (21%)	587 (65%)	900 (100%)

*Percentages indicated are of total injury-related pursuits (900).

This distribution of injury among police, bystanders and suspects is especially relevant to our initial discussion about liability. In the random sample of pursuit policies that we examined, while police and bystander safety is often mentioned, suspect safety is much less mentioned. Yet, the data indicates here that suspects, and then bystanders, are most likely to be injured in a

vehicular pursuit (and subsequently to bring suit against the agency) All of these findings support the notion that agencies should pay more attention to bystander and suspect safety in pursuit policies and be prepared to address this issue. In particular, agencies should use pursuit data to try and determine what types of conditions, incidents, or characteristics of parties involved, for example, create the most risk for injury and modify their practices accordingly.

In the continuing analyses below, we use this information about whether an injury occurred to create a dichotomous variable ("accident" or "no accident") and run cross tabulations to determine whether relationships exist between aspects of pursuits and negative outcomes.

5. Conditions/environment of pursuits

Often-collected information in past studies about police pursuits have included the conditions and environment in which pursuits occur. In the IACP database, information about the type and condition of the road, traffic conditions, and area illumination are collected.

The vast majority of police pursuits (72%) occurred in environments described as "urban". This likely represents a selection bias of those who chose to participate in the IACP database, which tended to be larger-sized agencies responsible for bigger populations. Nonetheless, when examining the proportion of pursuits in which an injury occurred for each type of location (highway, rural, suburban, urban), we discovered an interesting finding. Notice in Table 13, that the proportion of pursuits that end in a negative outcome (accident or injury) is greatest in *suburban* locations. Often, urban areas are believed to be the most dangerous in terms of high-speed pursuits, but when examining the data offered to the IACP database, suburban locations also are at risk. The chi-square is statistically significant here, although only suggesting some association between location and accident occurrence.

Table 13. Accident Outcome by Type of Location where Pursuits Occur

	No Injury/Accident	Yes Injury/Accident	Total
Highway	224 (78%)	69 (22%)	313 (100%)
Rural	803 (83%)	169 (17%)	972 (100%)
Suburban	603 (67%)	292 (33%)	895 (100%)
Urban	4,270 (77%)	1,287 (23%)	5,557 (100%)
Total	5,920 (76.5%)	1,817 (23.5%)	7,737 (100%)

$\chi^2 = 62.419$, $p<.001$

The percentages in parentheses indicate row percentages, or the percentage of pursuits with and without accident in each of the location types.

Road and lighting conditions also seem to be important considerations in thinking about the risk of pursuits (Table 14). While pursuits that occur on ice, snow, or wet conditions are far less likely to occur, such conditions, especially those on ice and on wet roads, are more likely than dry conditions to result in a negative outcome.

Table 14. Accident Outcome for Different Road Conditions

	No Injury/Accident	Yes Injury/Accident	Total
Dry	5,657 (77%)	1,681 (23%)	7,338 (100%)
Ice	23 (43%)	31 (57%)	54 (100%)
Snow	47 (80%)	12 (20%)	59 (100%)
Wet	193 (68%)	93 (32%)	286 (100%)
Total	5,920 (76.5%)	1,817 (23.5%)	7,737 (100%)

$\chi^2 = 49.250$, $p<.001$

Despite the prevalence of urban environments and their density, over three-fourths of pursuits take place in light traffic conditions. As Table 15 shows, there is a slight increase in the proportion of pursuits that result in accidents as traffic conditions become heavier. While there was a positive, statistically significant relationship between the heaviness of traffic conditions and the likelihood of an accident occurring, the magnitude of the tau-c statistic indicates that differences between the proportion of accidents in each of the categories was slight.

Table 15. Accident Outcome for Different Traffic Conditions

	No Injury/Accident	Yes Injury/Accident	Total
Light Traffic	4,654 (78%)	1,295 (22%)	5,949 (100%)
Moderate Traffic	1,055 (71%)	425 (29%)	54 (100%)
Heavy	211 (68.5%)	97 (31.5%)	59 (100%)
Total	5,920 (76.5%)	1,817 (23.5%)	7,737 (100%)

$\chi^2 = 43.288$, $p<.001$; tau-c = .054, $p<.001$

And finally, environmental variables collected by the IACP database include illumination conditions – dark, semi-dark (dusk) or daylight conditions. Over half of the pursuits took place

in dark conditions. Interestingly, the "Semi-Dark" or "Dusk" condition had the greatest proportion of pursuits that ended in an accident or injury. Again, the tau-c was small in magnitude but statistically significant, suggesting that as lighting becomes poorer, the chance of accident increases. However, pursuits during this time accounted for only 4.5% of the total pursuits. The vast majority of accidents still occurred during night hours (Table 16).

Table 16. Accident Outcome for Different Lighting Conditions

	No Injury/Accident	Yes Injury/Accident	Total
Daylight	2,419 (79.5%)	622 (20.5%)	5,949 (100%)
Semi-Dark (Dusk)	244 (71%)	101 (29%)	345 (100%)
Dark (Night)	3,257 (75%)	1,094 (25%)	4,351 (100%)
Total	5,920 (76.5%)	1,817 (23.5%)	7,737 (100%)

$\chi^2 = 28.648$, $p<.001$; tau-c = .044, $p<.001$

6. Characteristics of pursuits

A majority of pursuits averaged speeds in excess of 25 miles per hour over the limit. Not surprisingly, the odds of an injury occurring increases as the average speed over the limit that police travel increases, as Table 17 indicates. While the increases in proportion of events that resulted in an accident between each category are small, they are statistically significant. Interestingly, when examining the submitted data, this was one of the variables that police agencies did not always answer. While there may be many reasons for this, there are police agencies that have official rules about driving over the speed limit, even during a chase. Police agencies may be less likely to answer this question because of worries of liability or other disciplinary action given to officers that admit driving over the speed limit.

Table 17. Accident Outcome for Over-the-limit Speed Categories

	No Injury/Accident	Yes Injury/Accident	Total
0 to 10 MPH over limit	1,132 (79%)	296 (21%)	5,949 (100%)
11 – 25 MPH over limit	1,646 (78%)	474 (22%)	345 (100%)
26+ MPH over limit	3,008 (75%)	1,014 (25%)	4,022 (100%)
Total	5,786 (76%)	1,784 (24%)	7,570 (100%)

$\chi^2 = 14.145$, $p<.01$; tau-c = .038, $p<.001$

However, when examining the average maximum pursuit speed recorded for each pursuit, no statistically significant relationship was found between that pursuit speed and whether an accident occurred. The average maximum pursuit speed recorded was 66 miles per hour, with a standard deviation of 25 miles per hour (Figure E).

Figure E. Maximum Pursuit Speed

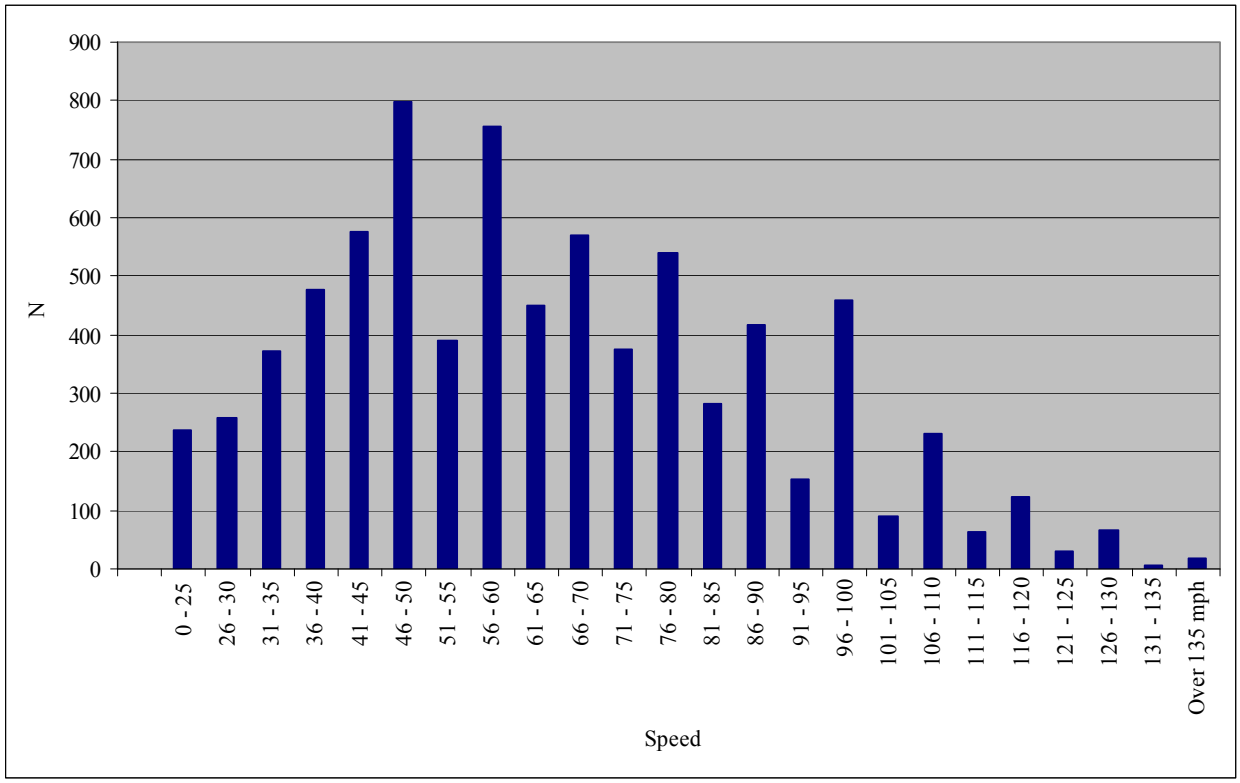
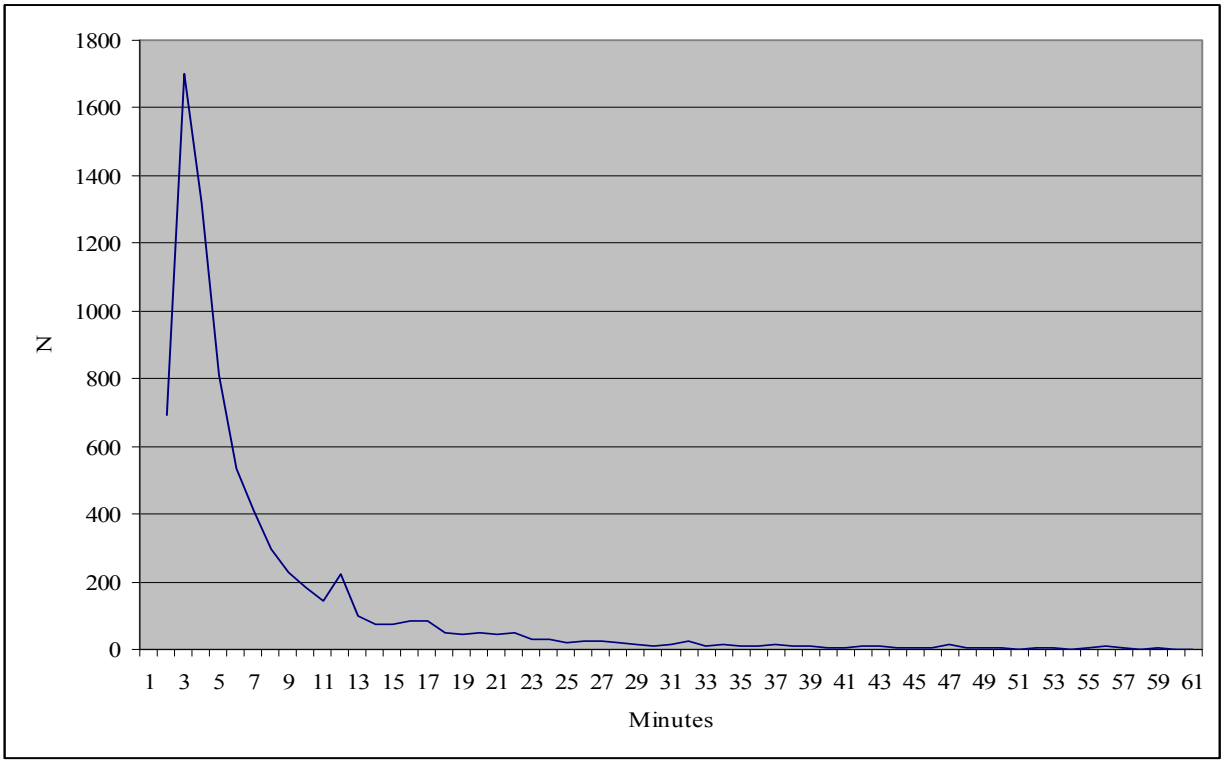


Figure F indicates that pursuits are often short-lived. 98% of all of the pursuits in the IACP database took place in 60 minutes or less. When not considering pursuits longer than 1 hour, the average length in time of a pursuit was approximately 5 ½ minutes, with a standard deviation of approximately 8 minutes. Further, for these pursuits, the bi-variate correlation between an accident occurring and pursuit length was statistically significant (Pearson Correlation =.04, $p<.01$). In other words, the longer in minutes that a pursuit is drawn out, the more likely a negative outcome will occur. There was no statistically significant correlation between the amount of miles travelled in a pursuit and a negative outcome of an accident.

Figure F. Length of Time of Pursuit

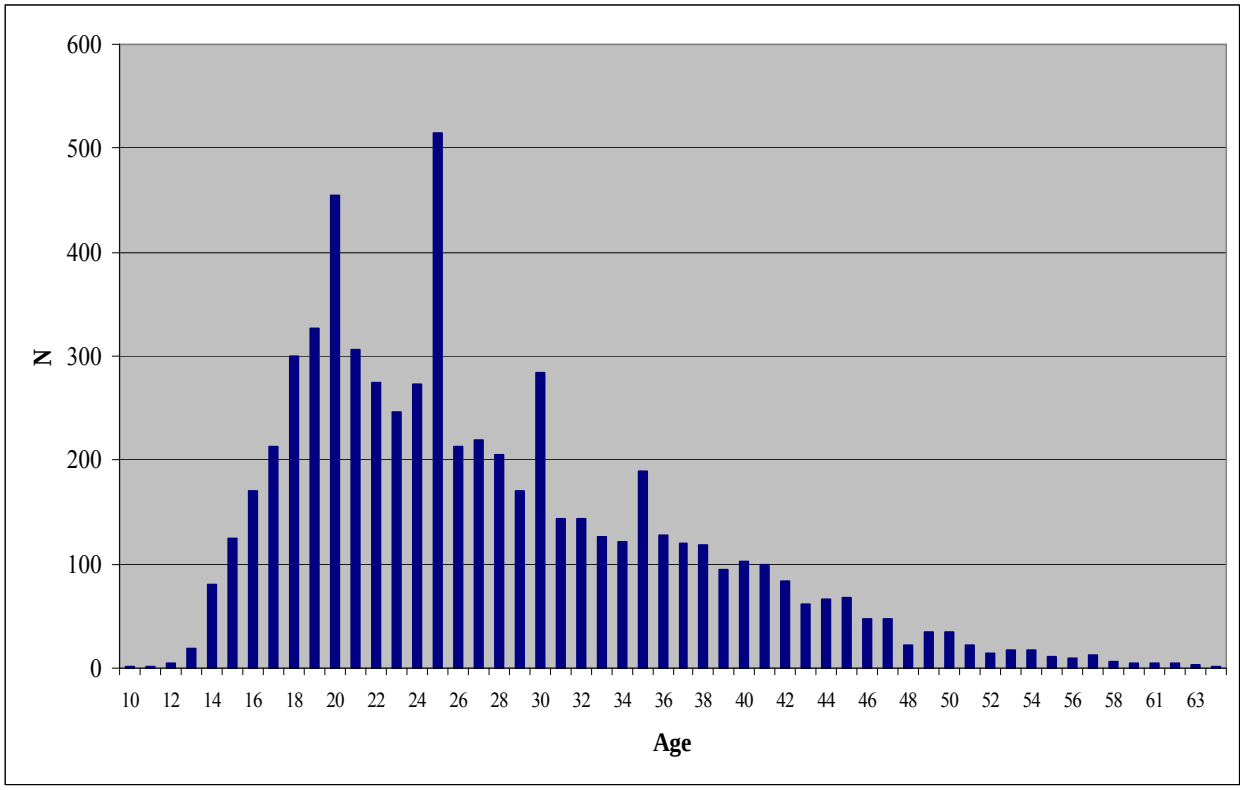


For pursuits under 1 hour, mean = 5.5 minutes, standard deviation = 7.9 minutes

7. Characteristics of fleeing individuals

Previous studies have primarily focused on four main characteristics of fleeing individuals: gender, age, license status, and blood-alcohol levels (see Brewer and McGrath, 1991; Criminal Justice Commission, 1998; Fennessy et al., 1970; Fennessy and Joscelyn, 1972; Nugent, 1990; Oechesli, 1992). Specifically, being male, young, unlicensed, and influenced by alcohol are often regular characteristics found of fleeing individuals. However, whether or not these risk factors for pursuit are also risk factors for negative outcomes is unclear. For example, in our data, while the ages of individuals who police pursue tend to be younger (Figure G), it appears that for approximately 17% of the data, the police could not gauge the age of the suspect. However, when examining those pursuits in which the age of the suspect was estimated, over half involved individuals that appeared to be 25 years or younger. The mean estimated age of suspects was approximately 23 years old (SD = 13.4 years). Interestingly, age was slightly positively correlated with an accident occurring (Pearson's correlation = .085, $p<.001$) although because the ages of many suspects were only estimated, and often in multiples of 5, we are unsure about the certainty of this finding.

Figure G. Estimated or Real Suspect Age



mean = 23 years old, standard deviation = 13.4 years

Of the 7,737 pursuits, the police were able to determine the license status of 4,921 suspects, or 64% of the records. While a large percentage of missing data may bias analysis, of the pursuits that the license status of the fleeing suspect was known, we found a statistically significant negative correlation (see Table 18) – there is a slightly greater chance of an injury or accident occurring in a situation in which the suspect was not licensed.

Table 18. Accident Outcome and License Status of Fleeing Individuals

	No Injury/Accident	Yes Injury/Accident	Total
Suspect is not licensed	1,600 (69%)	713 (31%)	2,313 (100%)
Suspect is licensed	1,914 (73%)	694 (27%)	2,608 (100%)
Total	3,514 (71%)	1,407 (29%)	4,921 (100%)

$\chi^2 = 10.669$, $p<.01$ (Pearson's correlation = -.047)

One variable that has not often been analyzed but that is collected in the IACP Database is suspect race (Table 19). While agencies were much less likely to complete this field (16% of the agencies left this blank, and an additional 8% said the race of the individual was "Other" or "Unknown"), the inclusion of this field is nonetheless an important step forward in data collection regarding police pursuits. Given the current concern of racial profiling related to vehicular stops, more information about both the individual and officer race could provide valuable insight for police managers working to reduce racial profiling practices. Such information can only help agencies better understand whether race is a factor in their everyday enforcement activities.

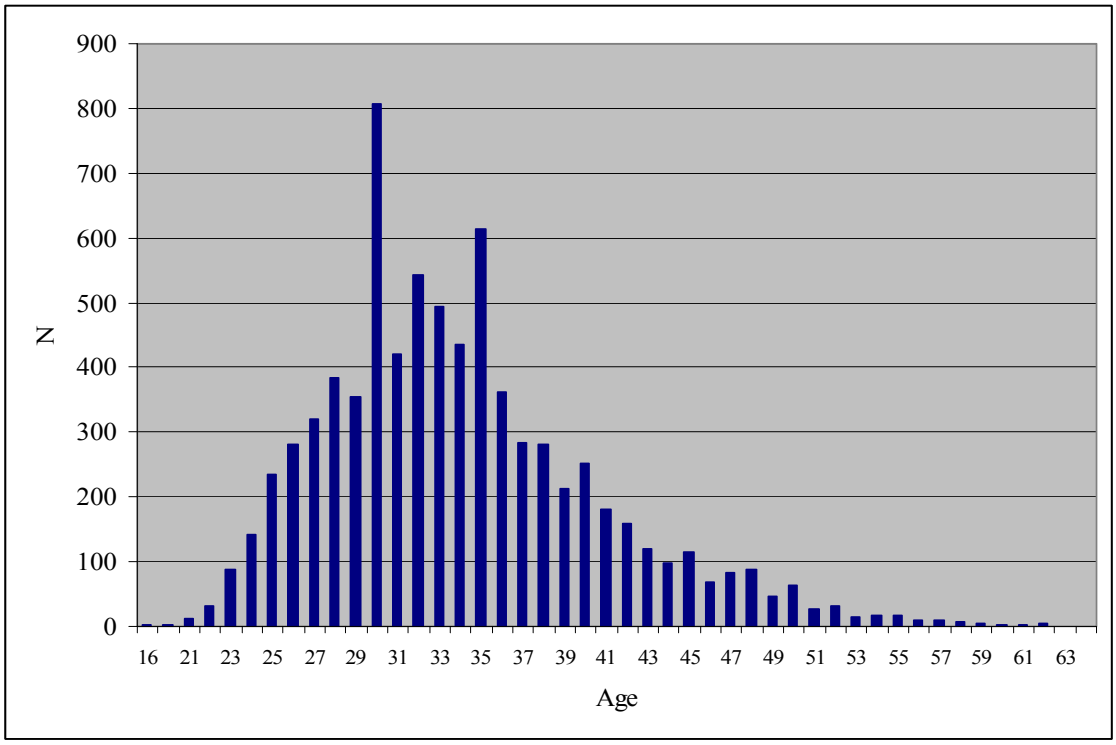
Table 19. Race of Fleeing Individual

	N	%
Caucasian	2010	31.0%
African American	1934	29.9%
Hispanic	1920	29.7%
Unknown	322	5.0%
Other	192	3.0%
Asian	82	1.3%
Multi-Ethnic	15	0.2%
Total	6475	100%

8. Characteristics of pursuing officers

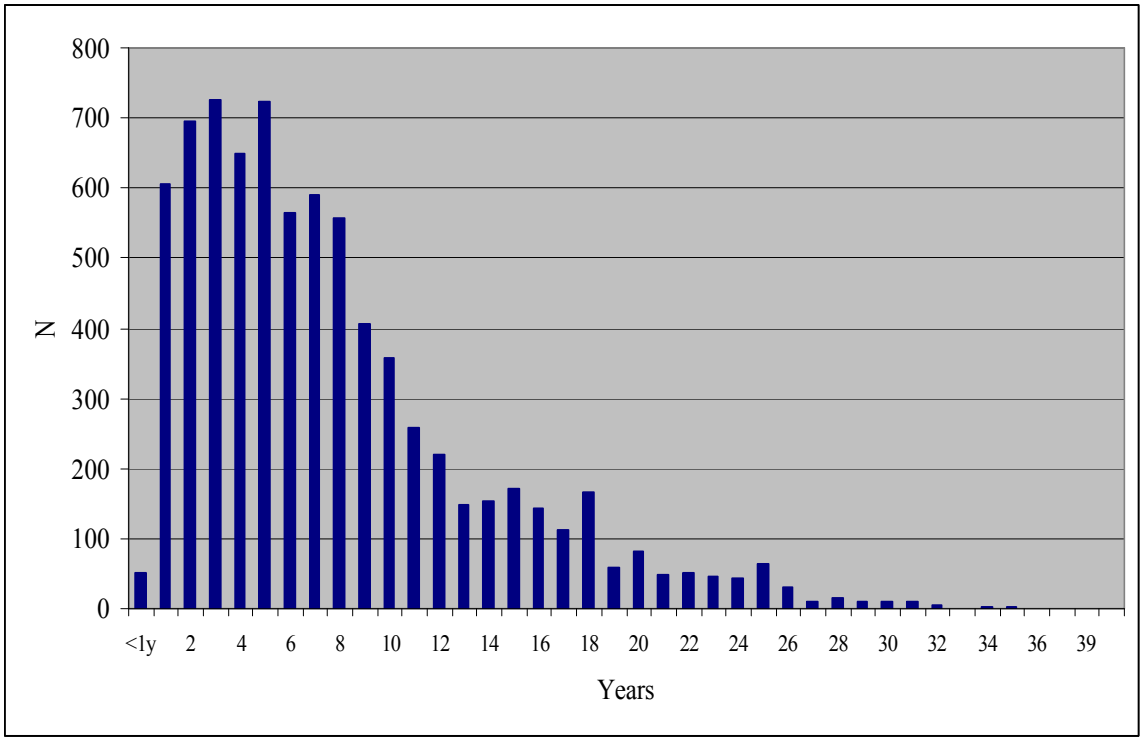
Figures H and I provide the distribution of officer age and years of service. The average age of officers initiating pursuits was approximately 34 years old (SD = 6.6 years), and these officers (97% of whom were men) had on average 7.6 years of service (SD = 5.9 years). Based on the IACP sample data, we found no statistically significant correlations between the risk of accidents occurring and officer age or years of service.

Figure H. Distribution of Pursuing Officers' Ages



mean = 34 years old, standard deviation = 6.6 years

Figure I. Distribution of Pursuing Officers' Years of Service



mean = 7.6 years of service, standard deviation = 5.9 years

9. Reasons for pursuit termination

Table 20 shows that the most common reason given for pursuit termination was that the fleeing driver stopped (36%). However, 18% of pursuits end due to the suspect incurring a collision, and a similar proportion because the suspect evaded the police. *What is telling about these statistics is that 72% of all pursuits end because of a reason that is almost completely out of the hands of the police.* The police chose to exercise control over terminating a pursuit in less than a quarter of all pursuits, most of which are ended by an officer or supervisor discontinuing the pursuit. When police agencies consider the costs and benefits of pursuits, they should also note this high level of uncertainty and lack of control that they often have during pursuit situations, which can certainly increase the ante for choosing to pursue.

Table 20. Reasons for Pursuit Termination

	N	%
Suspect stops	2,760	35.7%
Suspect involved in collision	1,425	18.4%
Suspect eludes the police	1,382	17.9%
Officer discontinues the pursuit	729	9.4%
Supervisor discontinues the pursuit	636	8.2%
Police intervention	471	6.1%
Vehicle is disabled	202	2.6%
Vehicle exits jurisdiction	72	0.9%
Officer involved in a collision	60	0.8%
Total	7,737	100%

For the 6% of pursuits that end via police intervention, the technique most often used is deflation of tires. For evaluators of police termination technologies, we suggest that tire deflation should be considered a priority in terms of evaluating the costs, benefits, and effectiveness of this method, as it appears to be used most frequently in those pursuits that were entered into the IACP database.

Table 21. Termination Methods Used

	N	%
No termination method used	7,229	94.3%
Tire deflator	265	3.4%
Other	71	0.9%
PIT maneuver	51	0.7%
Roadblock	28	0.4%
Rolling roadblock	23	0.3%
Total	7,737	100%

Finally, we examined the accident outcomes of pursuits in which a termination intervention was used. Although the overall relationship between accident outcome and termination method was not statistically significant, interesting proportions emerge that have relevance to the types of interventions that should be evaluated. While the vast majority of interventions involve a tire deflator, the second highest termination method is an ambiguous "Other" category. Even more noticeable, *this ambiguous category has the largest proportion of pursuits resulting in an accident*. Not only should the IACP Database better specify different types of maneuvers for agencies to choose from, but whatever these interventions, they certainly require more evaluation (as a larger proportion result in an accident).

Table 22. Accident Outcome for Different Termination Methods

	No Injury/Accident	Yes Injury/Accident	Total
Tire Deflator	173 (65%)	92 (35%)	265 (100%)
PIT Maneuver	33 (65%)	18 (35%)	51 (100%)
Roadblock	20 (71%)	8 (29%)	28 (100%)
Rolling Roadblock	18 (78%)	5 (22%)	23 (100%)
Other	38 (54%)	33 (47%)	71 (100%)
Total	282 (64%)	156 (36%)	438 (100%)

$\chi^2 = 6.287$, p=.179

Pilot Agency User Survey

In 2005, the IACP administered a short user survey (see Appendix C – *IACP Police Pursuit Database User's Questionnaire*) to participating agencies asking them about their experiences with using the database. The goal of the questionnaire was to gauge the strengths of the database as well as how it might be improved. We briefly summarize their responses here for each question, and incorporate suggestions into our final recommendations in Section 6.

Question 1: What features of the Police Pursuit Database help your department/agency?

Comparing data with other departments of similar size	51.9%
Tracking pursuits	38.5%
Reports and graphics	15.4%
Other features	3.8%
No Response	19.2%

Question 2: Is your department/agency required by the state to capture pursuits?

No	84.6%
Yes[25]	15.4%

Question 3: Does the state require your department/agency to submit pursuit data?

No	82.7%
Yes[26]	17.3%

Responses to Questions 2 and 3 are interesting for two reasons. First, they suggest that while police pursuits are indeed an important concern of both state and local agencies, there are very few standards and requirements regarding the collection of information on police pursuits in order for meaningful decisions and policies to be made and improved upon. Secondly, given that these agencies are participating in the IACP program, the responses also indicate that police agencies will participate in data collection, even without being required by either their own agency or by a local, state, or federal government entity. Police agencies may be more open to data collection and accountability systems, especially in the current era of police reform.

Question 4: Does your department/agency enter all pursuits into the [IACP] Database?

No	21.2%
Yes	78.8%

The usefulness of scientific analysis depends on the accuracy, timeliness, and completeness of the data. This includes not only submitting *all* reports on a particular topic or category to the data entry and information system, but also that the fields captured are filled out accurately and completely. The fact that 20% of agencies are not entering all of their pursuits or pursuit data into the data collection system can lead to systematic biases and less-reliable statistics from the data.

Question 5: Are any other databases or methods used to document pursuits [in your agency]?

No	34.6%
Yes	65.4%

Question 6 asked participating agencies what features they thought should be added to the IACP Police Pursuit Database. Although many agencies were happy with the database as it was, some agencies suggested the following:

- More users are needed in order for the database to operate at its full potential.

[25] California, Minnesota, Missouri, New Jersey, Wisconsin.
[26] Of those who marked affirmatively to Question three, 67% submitted pursuit data by paper and 33% submitted reports online.

- Many pursuits occur in specific geographic areas, would like to be able to capture and track locations on the database.
- In the "average speed over the limit" field, would like to be able to know what the actual speeds are.
- More charts (specifically, pie charts).
- Links to outside resources: other departments' or law enforcement agencies' websites.
- Clarify demographics field: urban/suburban etc - seems open to interpretation and would like to be able to enter more specific information.
- Fields: unable to determine race/gender sometimes. Could they have an N/A option?
- More info on the officers, e.g. how long they've been on duty, what had they done all day.
- Knowledge regarding which agencies used PIT maneuvers/intervention devices.
- Capture instances of suspect fleeing when there was no actual pursuit.
- Any legal challenges arising from pursuits & results.
- Race: Native Americans need to be included.
- Driver Stop: violators are also eluding on foot.
- Foot-chase without violator eluding.
- Video: Y/N for cars equipped with video.
- Suspect Age should not be mandatory because it is not always known.
- Track by supervisor/name of officer.
- Termination - be able to enter more specific information - sometimes there are multiple reasons, or one causing another.

Interestingly, these suggestions (and those of Question 2, 3 and 7) indicate the willingness not only for agencies to participate, but also to provide more information. It was clear that at least for those agencies participating in the Database, the value of complete, mandatory, and comprehensive reporting, data collection, and analysis was understood and appreciated.

Similar to Question 6, **Question 7** asked agencies what reports they believed should be added to the IACP Database. While most agencies did not respond to this question, or marked that they had nothing to suggest, some responses included:

- More graphics with the reports.
- Links to larger departments to see their analysis.
- Reports by patrol squad.

Question 8: Has your department/agency ever contacted the IACP for help/information?

No	61.5%
Yes	38.5%

All database systems require both technical and administrative support, which is indicated by Question 8.

IACP then asked, in **Question 9,** how the database helped the participating agency. Overall, responses to the IACP Pursuit Database were positive, and many agency representatives were pleased with the Database. Some expressed that the Database had helped them to track their data or modify existing practices, while others found comparisons with other agencies helpful. Some individual responses included:

- Helped figure out what was missing in own data. Tailored review process based on use of the database. At one point 10-20% of pursuits were not being captured.
- Identified that driver training and defensive driving techniques were needed based on database.
- User-friendly. Statistics help improve their methods and training procedures.
- Good thing to go to city council with should they ever need to defend the department (liability issues).
- Gives a central source of info for analyzing what works.
- Modified their internal report to include more of the info captured.
- Have revamped their form to include data from database. Helps from a liability perspective. Looking at a cross-country policy for pursuit management mirrored on the database. Helps internally when there is resistance to change in pursuit policy.
- Redid their whole process for insurance carrier based on database. They became aware of the database when their carrier was thinking about suggesting a model for tracking

pursuits; compliance with which might have affected their premiums. Really trumpeted how great and helpful the database was to the carrier.

- Able to put together report at end of year and look at their data. Give info to Commission.
- Like to compare with other years for their own data. The database has enabled them to make better decisions.
- As they can track the officers over a period of years it will be more helpful; right now they've only been entering data for a year.
- It has helped improve training regarding pursuits.
- If they didn't have it, they'd have no tracking method at all. Saves money.
- Prior to establishing own database, this allowed them to monitor pursuits and provide information to city council.
- The ease in creating annual and quarterly reports (because of having the data at hand). Color-coded graphs are great visuals to present to any audience.
- They do a yearly pursuit report and the stats from the database are helpful with that.

Finally, **Question 10** asked agency representatives to explain how the Database was not helpful. Although many agency representatives did not respond to this question, the ones that did replied:

- Suspect's age: never saw a good view of the driver on one pursuit but had to guess at his age in order to be able to enter further info (technical issue).
- Reason for pursuits ending - wants to be able to capture more detailed data (e.g. why a driver may have stopped). Contributing agencies anonymous - would be more helpful if they were not.
- Not user-friendly. High number of restrictions on particular fields: form can't be saved if there's any info they don't know. Can't go back & edit.
- Form is "not very neat." They redid it to make it look more presentable, added their department logo alongside IACP's.
- Slows us down - many of the fields are ones they're not interested in capturing - e.g. weather because it rarely varies. Database seems redundant at times because they use 2 of their own.
- Does not generate annual report - need something interactive.

- Wasn't familiar with how to navigate the site; more instructions on how to retrieve information would be helpful.

- About 2 years ago didn't have enough info about who to contact at IACP - wanted to get involved and several people at IACP didn't know what was going on with the database.

- Entering data but getting nothing out of it right now. It has not been useful because not enough departments in state are participating.

6 Conclusions and Recommendations

Police Pursuits in an Age of Innovation and Reform

Police pursuits have clearly been a priority and a consistent concern for police agencies since the 1970s, alongside important topics such as the use of force and police professionalism. The longevity of this concern is a result of pursuits continually challenging, influencing, reflecting, and affecting a core tension of democratic policing: protecting people from crime and criminals, but simultaneously, doing so fairly and effectively with minimal injury to society and the police themselves. Any assertion of force, power, and authority by the police tests this aspect of democratic policing and therefore will always be important.

The police, however, do not operate in a social, technological, economic, or political vacuum. While this core balance will always be the central consideration of any criminal justice institution in a democracy, it is the *interaction* between this balance and contemporary trends that challenges the police. Traditional concerns dynamically interact with a variety of contemporary factors, including the interpretation and evolution of laws and precedents set by courts, the level of tolerance and legitimacy that the public affords the police, changes in the abilities and use of technologies, and transformation of the police role, function, culture, and organizational structure. This dynamic interaction requires police managers to actively engage in discourse, evaluation, and knowledge-gathering to keep up.

In this report, we emphasized two contemporary contexts in particular that affect pursuit policy: the increased demand for proactive policing, and subsequently, the increased use of and demand for information technologies and strategies that can support, evaluate, and monitor such proactivity. This context has emerged through strategic innovations (e.g., hot spots policing, problem-solving, community policing, quality of life policing), managerial innovations (e.g., COMPSTAT), and information technologies (e.g., crime analysis, computerized mapping, information sharing systems, automated systems). Not only does this era of innovation, evidence-based policing, proactivity, and information technologies change the use and meaning of police vehicles (and therefore the nature and consequences of police pursuits), but this era also demands greater accountability, information collection, and use of analysis of pursuit information to make decisions and assess outcomes.

Thus, it is not a coincidence that programs like the IACP's Police Pursuit Database are now emerging, alongside many other information technologies, systems, and interfaces that attempt to make the police function more efficiently and effectively (see, for example, Lum, 2008). Such technologies facilitate the use of information, analysis, data, research, evaluation, and empirical knowledge. These efforts also facilitate replacing traditional decision making tools that have been deemed to be ineffective or unfair, such as conventional wisdom, "common sense", anecdotes, hunches, tradition, police culture, personal beliefs or what "has been done in the past", with more systematic approaches.

Furthermore, information, research, analysis, and the systems that facilitate them provide police agencies with extra information for making decisions about pursuits that are not necessarily

provided only by court rulings. As Alpert has recently emphasized, what police agencies do in reality and what they are allowed to do by the courts or by state law may be very different (often, police may choose to continue with more restrictive policies). Such discretion, however, needs to be structured by accurate information, evidence, data, research, and knowledge, especially in gray areas not addressed by courts, or by state and federal laws. And, in a current environment where police are *more* likely to engage in discretionary behavior (because of the push towards proactivity), the need for information, analysis, and accountability becomes much more profound in pursuit policy.

The Bottom Line: *Without the accurate, timely, consistent, and comprehensive collection and analysis of reports of police pursuits both within an agency and across jurisdictions, police agencies cannot make either evidence-based and rational policy or effective street-level discretionary decisions.*

Recommendations to Police Agencies

Our recommendations to police agencies center around improving and increasing the reporting of pursuits, and the collection, standardization, analysis, and utilization of pursuit data to reduce negative outcomes, to increase the ability of agencies to address crime, and to increase the accountability and legitimacy of police departments.

1. Police managers must use pursuit information to better understand the factors which increase the risk of negative outcomes (injuries, damage, fatalities, liability suits, loss of public legitimacy) to make more evidence-based decisions regarding pursuit policies. Such information can also inform those officers and their supervisors who ultimately will be the individuals making discretionary decisions during pursuits about the best course of action. This use of information to inform both an agency's written pursuit policies as well as to structure daily discretion of officers and first-line supervisors incorporates an evidence-based approach into police practice. We understand that police officers must often make split-second decisions during pursuits and we are not advocating that during a pursuit an officer should stop and consult a researcher. What we are suggesting is that police agencies must find ways to build into their organizational infrastructure this evidentiary base to ultimately affect those street-level decisions. Police agencies can do this by:

    a. Making report writing on all pursuits mandatory.
    b. Using an information technology to automate those reports and collect a wide array of variables related to the pursuit.
    c. Analyzing data collected.
    d. Applying knowledge from analysis to academy and in-service training, policy-creation or amendments, and daily practices.
    e. "Tightening" accountability structures by ensuring line supervisors are involved in pursuits and pursuit reporting and keeping track of infractions.
    f. Keeping managers knowledgeable about both state and federal law, court deliberations, and also trends in pursuits in similar agencies, and within their larger regions and states.

2. At the strategic and managerial level, we encourage agencies to take a holistic approach to their discussions by examining all issues related to police pursuits, rather than just the pursuits themselves. Broadly, a number of factors influence police policy regarding pursuits and should be taken into consideration when both developing policies and also collecting information:

    a. Crime factors: Criminal apprehension, crime control, crime prevention
    b. Safety and subsequent legal liability for injuries and damages to parties involved (suspects, bystanders, police officers, community)
    c. Legal rulings and precedents
    d. Monetary costs of damages to fleet, injuries, liability and court proceedings
    e. The legitimacy afforded to the police by the public/local community concerns
    f. How changes toward proactive strategies impact the frequency and nature of pursuits and consequences of pursuits
    g. How records of pursuits will be maintained, computerized, analyzed, accounted for, and used to further develop pursuit policy.

3. More specifically, police managers and analysts need *empirical* information to understand the frequency, nature, outcome, and correlates of negative outcomes of pursuits. This requires that the agency have an information system that allows them to collect, in a standardized, automated fashion, information about *every* police pursuit in their jurisdiction. In order to determine what types of situations lead to negative outcomes, information on all pursuits, including those that end without incident or those in which the individual evades the police, must be collected to make those comparisons.

4. Police agencies should consider the use of information systems already available which allow them to record *every* high speed police pursuit, information about each of those pursuits, the situational, environmental, and context by which pursuits occurred, their outcomes, and the agency's response. The benefits provided by information collection databases are that they allow police agencies to compare their pursuits with other jurisdictions, and also allows nearby jurisdictions to share data for strategic purposes.

5. Not only must all pursuits be collected, but within each report, police agencies must ensure comprehension in that data collection. Not collecting certain information, or the systematic ignoring of certain fields while writing reports, not only reduces police agency transparency and legitimacy, but also reduces the ability of the police themselves to analyze pursuit data to improve their policies and effectiveness in this area. Specifically, information about the officer and the suspect involved, the nature of injuries, accidents or other outcomes, or information about supervisory actions are key in maintaining accountability and the ability to examine data to improve future responses.

6. As with many of their activities, by clearly informing the public of pursuit policies, legal precedents, and police actions, the police can improve their legitimacy with the public and also better match citizen expectations and understanding with actual police actions.

7. Finally, police agencies should seek out and welcome relationships with criminologists, researchers, crime analysts, sociologists, information technology specialists, the media, transportation experts, urban planners, and other non-police entities. These individuals and groups can contribute to improving and standardizing data collection, problem-solving and evidence-based policing, as well as improve the agency's legitimacy in the public arena.

Recommendations to the IACP

The authors' recommendations to the International Association of Chiefs of Police focus on two issues – increasing the use of the database so as to maximize participating agencies' ability to make comparisons and gain empirical knowledge about police pursuits in their regions, and improving the reliability of the data collected.

1. The success of the IACP Police Pursuit Database depends on the ability of the IACP to recruit a large proportion of U.S. law enforcement agencies to participate in using the Database, or at least having a representative sample of agencies numerous enough for meaningful comparisons to be generated. Because cross-jurisdictional reports rely on participating agencies to have other similarly situated agencies in the database, this is the most important requirement for the success of this database. We recommend that the IACP connect with their constituencies to encourage and provide justifications (see above) for the importance of collecting, analyzing and using reports of pursuits. We also recommend that the IACP keep costs of using the database to a minimum, as police agencies already have cultural and organizational impediments to using such information technologies.

2. We also recommend that the IACP set out more specific instructions for the use of the database for participating agencies. Specifically:

    a. That each agency enters a unit of analysis that is defined according to set standards. An agency's own use of the database as well as the combination of data across agencies will be directly affected when participating agencies submit pursuits with different conceptualizations and definitions of what constitutes a police pursuit. Examples of inconsistencies may include agencies entering two pursuit reports if there are two people in the vehicle, entering a single pursuit twice if the pursuit is taken up by a different officer, entering activities that are not vehicular pursuits (for example, pursuits on bicycles), not entering pursuits when a suspect avoids apprehension, or only entering pursuits that have negative (or positive) outcomes. Or, some pursuits might be considered too "informal" to be entered into the database. Clear definitions of what is a pursuit might alleviate this type of discretion at the agency level.

    b. That each agency enters report fields fully, and that missing information is treated as missing information, rather than defaulted to a particular choice or numeric value. For example, if no selection is chosen as to whether a supervisor monitored the pursuit, the current default is "yes". Rather, the default, if this is not answered, should be "missing", as there is no logical reason why the default would be "yes" or "no". Further, missing values should be not be coded

numerically (such as "99") but rather with a missing information value. Analysis will be skewed if numerical fillers, as opposed to an actual missing value are used.

3. For each participating agency, certain information should be entered automatically, reducing the time agencies will need to complete each report as well as reducing entry errors. For example, information about the agency itself or its jurisdiction (size, location, number of sworn officers, crime rates, etc.) can be entered by those maintaining the database and regularly updated. We also suggest that a standard identification code for police agencies be used (for example, the "ORI" or Originating Reporting Agency Identifier used in Uniform Crime Reporting to the FBI) so that data can be easily linked to other databases (for example, the LEMAS) for statistical analysis.

4. The Department of Justice has established protocols regarding the use of common database languages to facilitate the sharing of information across justice agencies. Recently, the Office of Justice Programs of the Department of Justice has officially issued a newer version of Global XML/Global JXDM. We suggest that the IACP Police Pursuit Database comply with these standards to further increase the interoperability and use of this program.[27]

5. We suggest that the IACP take a leadership role in monitoring who is using the database, why agencies might suddenly stop using the database, and whether agencies are submitting all of their data to the database. While 56 agencies submitted 7,737 pursuit reports, the yearly average of agency participation, even in those years in which the use of the database was most consistent, was still under 30. The IACP should help monitor whether agencies have stopped submitting information either because they have stopped participating in the database, because they did not have any pursuits to report, or if technical problems are occurring. The success of the database relies on accurate, comprehensive, and complete data submission, and the IACP should monitor this to ensure the quality of data collected.

6. Along these same lines, dropping out of participation may be an indication that the agency does not find the database useful. The IACP should take a leadership role in understanding the needs of agencies that use the database, and be flexible about adding more or different types of analytic capabilities to the system or different ways that agencies can share information.

7. Finally, we recommend that the IACP ensure that statistical analysis is conducted on the database and that reports about these findings are provided to participating agencies on a annual basis. Agencies may not have time to download the entire database and run advanced analysis of the data against other databases such as LEMAS. However, broader statistical analysis might assist these agencies in their long-term strategic and policy plans related to police pursuits.

[27] See http://www.it.ojp.gov/index.jsp and http://www.it.ojp.gov/topic.jsp?topic_id=43 .

Recommendations to the National Institute of Justice and other Funding Agencies

The National Institute of Justice and other funding agencies can play a key role in police pursuit policy that currently is not being filled by individual agencies or by state or federal policing systems. This key role involves encouraging police and state legislatures to mandate the collection of data on police pursuits, or at least to provide mechanisms that may improve data collection in this area.

1. We encourage the National Institute of Justice to take a leadership role in supporting mandatory reporting and data collection of police pursuit data, as well as increasing the visibility of this subject matter in the law enforcement community.

2. Much more funding for the research and development of information systems and research about pursuits is needed, not only to contribute to the goal in (1) above, but also to improve law enforcement's ability to maximize crime control and prevention and minimize negative outcomes. Specific solicitations for research related to police pursuits should include proposals which:

    a. Analyze and evaluate reports and data of police pursuits, specifically determining whether relationships exist between characteristics of pursuits and outcomes. While descriptive statistical analysis has been the norm in the analysis of pursuit data, more correlational and multivariate analysis is needed to determine what characteristics predict the greatest likelihood of negative outcomes.

    b. Conduct detailed cost-benefit analyses of different pursuit policies, considering not just the effect of policies (and changes in policies) on arrest and injury rates, but also reductions in crime, community safety, police legitimacy, and police officer efficacy.

    c. Conduct scientifically rigorous evaluations of the application of different types of pursuit policies on outcomes.

    d. Conduct scientifically rigorous evaluations of technologies and interventions police currently use to stop vehicles (e.g., roadblocks, PIT maneuvers, and tire deflators). The regular mention of the four tactics and special devices in police pursuit policies – roadblocks, tire deflation, collisions and paralleling – indicate that many of these tactics may be at least widely available for use, or have been considered for use by police agencies that allow pursuits. Given that the majority of these policies we examined also consider any contact tactic to be "deadly force", this in itself warrants careful evaluation of these tactics.

3. We encourage the National Institute of Justice to consider grants to agencies to develop information systems that will help in collecting information about police pursuits. State agencies may be particularly suited to take a leadership role in information collection about police pursuits within a state jurisdiction.

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8 Appendices

Appendix A:

IACP Model Pursuit Policy

Model Policy

Effective Date	*Number*
October 1996	

Subject
Vehicular Pursuit

Reference	*Special Instructions*

Distribution	*Reevaluation Date*	*No. Pages*
		3

NOTE: This is the official IACP "Sample Policy on Vehicular Pursuit," voted on and approved at the 1996 IACP Annual Conference.

Pursuit
Submitted by: Highway Safety Committee
AHS018.a96

WHEREAS, police pursuits have become an increased focus of attention for public safety officials, the news media and the public at large; and

WHEREAS, an acceptable balance must be obtained between the capture of fleeing suspects and the responsibility of law enforcement to protect the general public from unnecessary risks; and

WHEREAS, there is no uniform reporting criteria or system in place to accurately account for all pursuits; and

WHEREAS, many agencies have excellent comprehensive policies in place while others have minimal or no policies at all dealing with pursuits; and

WHEREAS, some states have enacted serious penalties for consciously attempting to elude the police while others have not; and

WHEREAS, there is a need to adopt a generic "sample" policy that can serve as a minimum guideline for all agencies involved with pursuits; now, therefore, be it

RESOLVED, that the International Association of Chiefs of Police (IACP), duly assembled at its 103rd annual conference in Phoenix, Arizona, encourages all agencies to adopt written policies governing pursuits, and that these policies contain at a minimum all the elements put forth in the IACP "sample" policy and that all members of the agency receive familiarization training in the policy; and be it

FURTHER RESOLVED, that the IACP and the National Highway Traffic Safety Administration (NHTSA) develop a uniform pursuit reporting criteria and form to accurately document pursuit involvements and results nationwide; and be it

FURTHER RESOLVED, that the IACP and NHTSA encourage the state legislatures to make it a criminal offense with severe punishments to evade arrest by intentionally failing to comply with the lawful order of a police officer to stop a motor vehicle; and be it

FURTHER RESOLVED, that the IACP, NHTSA and the National Association of Motor Vehicle Manufacturers work together to apply technology that will disable fleeing vehicles and minimize the need for pursuits; and be it

FURTHER RESOLVED, that the IACP adopt the attached pursuit policy as its sample and that it be made a part of the Manual of Model Police Traffic Services Policies and Procedures maintained by the Highway Safety Committee, and that this policy replace and rescind all prior IACP policies on this subject.

CALEA Standard Ref: 41.2.2, 61.3.4

I. PURPOSE:

The purpose of this policy is to establish guidelines for making decisions with regard to vehicular pursuit.

II. POLICY:

Vehicular pursuit of fleeing suspects can present a danger to the lives of the public, officers, and suspects involved in the pursuit. It is the responsibility of the agency to assist officers in the safe performance of their duties. To fulfill these obligations, it shall be the policy of this law enforcement agency to regulate the manner in which vehicular pursuits are undertaken and performed.

III. DEFINITIONS:

Vehicular Pursuit: An active attempt by an officer in an authorized emergency vehicle to apprehend a fleeing suspect who is actively attempting to elude the police.

Authorized emergency vehicle: A vehicle of this agency equipped with operable emergency equipment as designated by state law.

Primary unit: The police unit, which initiates a pursuit or any unit, which assumes control of the pursuit.

Secondary unit: Any police vehicle, which becomes involved as a backup to the primary unit and follows the primary unit at a safe distance.

IV. PROCEDURES:

A. Initiation of pursuit:

1. The decision to initiate pursuit must be based on the pursuing officer's conclusion that the immediate danger to the officer and the public created by the pursuit is less than the immediate or potential danger to the public should the suspect remain at large.
2. Any law enforcement officer in an authorized emergency vehicle may initiate a vehicular pursuit when the suspect exhibits the intention to avoid apprehension by refusing to stop when properly directed to do so. Pursuit may also be justified if the officer reasonably believes that the suspect, if allowed to flee, would present a danger to human life or cause serious injury.
3. In deciding whether to initiate pursuit, the officer shall take into consideration:
   a. road, weather and environmental conditions;
   b. population density and vehicular and pedestrian traffic;
   c. The relative performance capabilities of the pursuit vehicle and the vehicle being pursued;
   d. The seriousness of the offense; and
   f. The presence of other persons in the police vehicle.

B. Pursuit Operations:

1. All emergency vehicle operations shall be conducted in strict conformity with applicable traffic laws and regulations.
2. Upon engaging in a pursuit, the pursuing vehicle shall activate appropriate warning equipment.
3. Upon engaging in pursuit, the officer shall notify communications of the location, direction and speed of the pursuit, the description of the pursued vehicle and the initial purpose of the stop. The officer shall keep communications updated on the pursuit. Communications personnel shall notify any available supervisor of the pursuit, clear the radio channel of non-emergency traffic, and relay necessary information to other officers and jurisdictions.
4. When engaged in pursuit, officers shall not drive with reckless disregard for the safety of other road users.
5. Unless circumstances dictate otherwise, a pursuit shall consist of no more than two police vehicles, a primary and a secondary unit. All other personnel shall stay clear of the pursuit unless instructed to participate by a supervisor.
6. The primary pursuit unit shall become secondary when the fleeing vehicle comes under air surveillance or when another unit has been assigned primary responsibility.

C. Supervisory Responsibilities:

1. When made aware of a vehicular pursuit, the appropriate supervisor shall monitor incoming information, coordinate and direct activities as needed to ensure that proper procedures are used, and shall have the discretion to terminate the pursuit.
2. Where possible, a supervisory officer shall respond to the location where a vehicle has been stopped following a pursuit.

D. Pursuit Tactics:

1. Officers shall not normally follow the pursuit on parallel streets unless authorized by a supervisor or when it is possible to conduct such an operation without unreasonable hazard to other vehicular or pedestrian traffic.
2. When feasible, available patrol units having the most prominent markings and emergency lights shall be used to pursue, particularly as the primary unit. When a pursuit is initiated by other than a marked patrol unit, such unit shall disengage when a marked unit becomes available.
3. Motorcycles may be used for pursuit in exigent circumstances and when weather and related conditions allow. They shall disengage when support from marked patrol units becomes available.
4. All intervention tactics short of deadly force such as spike strips, low speed tactical intervention techniques, and low speed channeling (with appropriate advance warning) should be used when it is possible to do so in safety and when the officers utilizing them have received appropriate training in their use.
5. Decisions to discharge firearms at or from a moving vehicle, or to use roadblocks, shall be governed by this agency's use of force policy, and are prohibited if they present an unreasonable risk to others. They should first be authorized, whenever possible, by a supervisor.
6. Once the pursued vehicle is stopped, officers shall utilize appropriate officer safety tactics and shall be aware of the necessity to utilize only reasonable and necessary force to take suspects into custody.

E. Termination of the Pursuit:
   1. The primary pursuing unit shall continually re-evaluate and assess the pursuit situation including all of the initiating factors and terminate the pursuit whenever he or she reasonably believes the risks associated with continued pursuit are greater than the public safety benefit of making an immediate apprehension.
   2. The pursuit may be terminated by the primary pursuit unit at any time.
   3. A supervisor may order the termination of a pursuit at any time.
   4. A pursuit may be terminated if the suspect's identity has been determined, immediate apprehension is not necessary to protect the public or officers, and apprehension at a later time is feasible.

F. Interjurisdictional Pursuits:
   1. The pursuing officer shall notify communications when it is likely that a pursuit will continue into a neighboring jurisdiction or across the county or state line.
   2. Pursuit into a bordering state shall conform with the law of both states and any applicable inter-jurisdictional agreements.
   3. When a pursuit enters this jurisdiction, the action of officers shall be governed by the policy of the officers' own agency, specific inter-local agreements and state law as applicable.

G. After-Action Reporting.
   1. Whenever an officer engages in a pursuit, the officer shall file a written report on the appropriate form detailing the circumstances. This report shall be critiqued by the appropriate supervisor or supervisors to determine if policy has been complied with and to detect and correct any training deficiencies.
   2. The department shall periodically analyze police pursuit activity and identify any additions, deletions or modifications warranted in departmental pursuit procedures.

H. Training:

   Officers who drive police vehicles shall be given initial and periodic update training in the agency's pursuit policy and in safe driving tactics.

NOTE: This sample policy is intended to serve as a guide for the police executive who is interested in formulating a written procedure to govern vehicular pursuit. IACP recognizes that staffing, equipment, legal, and geographical considerations and contemporary community standards vary greatly among jurisdictions, and that no single policy will be appropriate for every jurisdiction. We have, however, attempted to outline the most critical factors that should be present in every pursuit policy, including the need for training, guidelines for initiating and terminating pursuits, the regulation of pursuit tactics, supervisory review or intervention, and reporting and critique of all pursuits. Approved at the 103rd. IACP Annual Conference, Phoenix, Arizona, October 30, 1996

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Appendix B:

IACP Police Pursuit Database User's Manual

International Association of Chiefs of Police

Police Pursuit Database

User's Manual

Table of Contents

Project Background

The vehicular pursuit of fleeing suspects by police has long been a topic of concern to officials in the criminal justice system and the public. Many studies have been completed to examine and understand pursuit issues, and seek methods to preempt, control and terminate police pursuits. A task force created by the National Institute of Justice Office of Science & Technology completed one of these studies.

This task force, composed of senior law enforcement officials from local, state, regional and federal agencies published their findings in *the Pursuit Management Task Force Report* (PMTFR) in September 1998. The report included "an assessment of current techniques and technologies related to pursuits, recommendations regarding technology development and commercialization, an overview of legal issues related to pursuits and related technologies, and recommendations for legislative action."

The PMTFR recommended that a national model for the collection of pursuit statistics be developed by a professional law enforcement agency to expand the body of knowledge relating to pursuits. Based upon that recommendation, the IACP has constructed this internet-based police pursuit database. This data will provide information that will facilitate the management of pursuits, assist training of officers, and enable law enforcement leaders to make more informed pursuit management, policy and training decisions.

The IACP began this project by convening an advisory board of law enforcement officials to identify field elements and provide on-going guidance regarding the format and uses of this database. An internet-based approach was undertaken to provide law enforcement with immediate access to, and analysis of, real-time data. The system is secure and anonymous, and is available only to law enforcement agencies at no cost.

IACP began identifying agencies to participate in the test pilot of this database in February 2001. Ten agencies utilized and contributed data to the database, and provided feedback about its use, format and content, its value to local and state agencies, and other relevant items in preparation for its release to the field. The testing occurred over one year ending in May 2002, and the database is now available to those law enforcement agencies that choose to contribute data.

Agency Responsibilities

Using the Database

Entering data: Current and past police pursuits can be input in the database. There is no limit on how far you may choose to enter past data.

Generating Reports: You may generate reports for your jurisdiction and other selected data samples as follows:

- Nationwide – limited to the data from the contributing agencies. This report will provide data from all participating agencies.
- Statewide – by requested state.
- Comparable Jurisdictions – two options. Reports may be generated for jurisdictions that serve a similar jurisdiction by the population served and by population density. Categories for comparable options are listed on page 3.
- Future Options – An international option will be added that will pull data from outside the United States.

Suggestions & Problems: If you have any suggestions or encounter problems with the database, please contact Al Arena (ext. 240) or Bill Albright (ext. 265) at 800/843-4227.

Confidentiality

This database was created to provide a management tool that will inform law enforcement leaders making pursuit-related management, training and policy decisions. Data from other jurisdictions is provided to expand on the information available that can be taken into consideration during the decision-making process.

Each jurisdiction is free to utilize and/or release their own information at their discretion. Comparable, nationwide and other reporting options, however, should be utilized and shared only within each law enforcement agency. The International Association of Chiefs of Police will periodically release data from selected field elements, in the form of raw data, to the field.

Anticipated Enhancements - Future

A statistical package will be added to the database that will enable law enforcement leaders to examine pursuit trends based upon relationships between selected field elements. Also under examination is the addition of presentation-based software that will provide reports and present data in graphic formats – bar and pie charts, histograms, etc.

Database Characteristics

URL: pursuit.theiacp.org

Pursuit Database

- Internet-based, secure and anonymous site requires Log-in by approved users with passwords.
- Enables law enforcement agencies to track, review and analyze police pursuit data.
- Departments have access to pursuit data from jurisdictions around the nation.
- Pilot testing of the database occurred over one year; database is now available to all agencies that choose to contribute data.

Pursuit Policy Classification:

No Written Policy

Not Restrictive: Chase for any traffic or criminal violation keeping officer and public safety in mind.

Restrictive: Chase for any felony keeping officer and public safety in mind.

Very Restrictive: Chase for any felony against person (violent felony) keeping officer and public safety in mind.

No Chase

Comparable Jurisdiction Classifications:

By Population Served

a	Under 2,500	**e**	100,000 – 249,999
b	2,500 – 9,999	**f**	250,000 – 499,999
c	10,000 – 49,999	**g**	500,000 and over
d	50,000 – 99,999		

By Population Density

a	0 – 100	**d**	1,001 – 2,500
b	101 – 500	**f**	2,501 – 5,000
c	501 – 1000	**g**	Over 5,000

Field Definition Guide

We have defined a PURSUIT as:

an active attempt by an officer in an authorized emergency vehicle to apprehend a fleeing suspect who is actively attempting to elude the police.

Field Element Definitions:

Department Report/Tracing #

Internal number assigned to pursuit used to trace event – department record keeping mechanism.

Supervisor Monitored - Additional Units/Agencies Involved

- Did the initiating officer's supervisor monitor the pursuit? Defaults to "Yes".
- How many additional units and agencies were involved in the pursuit? Both fields default to "0".

Starting/Termination Date & Time

Time of pursuit initiation and termination – data entry example to right of field.

Initial Violation

What was the initial violation that led to the pursuit? Violation should be classified as one of the following:

- Traffic Violation: DWI, Speeding, Reckless Driving, Other Routine Traffic
- Misdemeanor: DWI, Assault/Battery, Firearm Related, Other
- Non-violent Felony: Burglary, Stolen Auto, White Collar, Other
- Violent Felony: Homicide, Robbery, Violent Assault, Rape
- Assisting Other Department

Demographics

What are the jurisdiction demographics?

- Urban
- Suburban
- Rural
- Interstate Highway

Light Conditions

What are the pursuit light conditions?

- Light
- Dusk
- Dark

Average Speed > Limit

What was the pursuit speed in relation to the speed limit? This should be recorded as the number of miles per hour above the highest posted speed limit.

- Below Limit
- 0 – 10 miles per hour
- 11 – 25 miles per hour
- 26 or miles per hour

Traffic Conditions

What were the pursuit traffic conditions?

- Light
- Moderate
- Heavy

Road Conditions

What were the road conditions during pursuit?

- Dry
- Wet
- Ice
- Snow

Maximum Pursuit Speed

What was the maximum speed reached during the pursuit?

Reason for Termination

Why was the pursuit terminated? Indicate which one of ten possible methods:

- Driver Stop
- Collision – Officer
- Collision - Suspect
- Exited Jurisdiction
- Officer Discontinued
- Supervisor Discontinued
- Violator Eluded
- Violator Eluded – Foot
- Police Intervention (see below)
- Vehicle Disabled

Termination Method

If pursuit ended due to Police Intervention (defaults to N/A): indicate termination method:

- PIT Maneuver
- Roadblock
- Rolling Roadblock
- Tire Deflator
- Remote Engine Disabler (see below)
- Other (See below)

Detail Engine Disabler/Other

If termination method is Remote Engine Disabler or Other (above), describe product (i.e. manufacturer/model); if Other Termination Method indicated above, please describe.

Distance Trailed

What was the distance trailed?

Arrest/Charges

What was the suspect arrested and charged with?

Initiating Officer Sex

Gender of pursuit's initiating officer.

Initiating Officer Age

Age of pursuit's initiating officer.

Initiating Officer Years of Service

Years of service for pursuit's initiating officer.

Initiating Officer ID Number

Optional field – defaults to "0000". Insert internal department identification number.

Suspect Sex

Gender of the suspect/driver of vehicle pursued. Input "0" if unknown.

Suspect Age

Age of the suspect/driver of vehicle pursued.

Suspect Race

Race of the suspect/driver of vehicle pursued.

- Caucasian
- African American
- Hispanic
- Asian
- Other
- Unknown

Suspect Licensed

Does the suspect have a valid driver's license?

- Yes
- No
- Unknown

* An expired license is not a valid license. Must be current to be valid.

Suspect Impairment

Did the arresting officer suspect any impairment?

- None
- Alcohol
- Drugs
- Mental/Illness
- Unknown

Injury/Fatality and Property Damage

Indicate injuries, fatalities, and/or property damage in four categories. Numbers of injuries and fatalities should be indicated as appropriate (all default to "0"):

Law Enforcement Vehicle	[#] Minor	[#] Serious	[#] Fatality
Fleeing Vehicle	[#] Minor	[#] Serious	[#] Fatality
Uninvolved Vehicle/Persons	[#] Minor	[#] Serious	[#] Fatality
Other Property Damage	[#] Minor	[#] Serious	[#] Fatality

Indicate if property damage to each vehicle/other property.

Approx. Property Damage $

Estimate the total amount of property damage, if applicable.

Appendix C:

IACP Questionnaire to Participating Agencies

IACP POLICE PURSUIT DATABASE
User Questionnaire

We are currently evaluating the IACP Police Pursuit Database in order to establish a future direction for the application. Your responses to the following ten questions will be instrumental in this process and will remain confidential. We appreciate your participation.

1) What features of the Police Pursuit Database help your department/agency?

- ☐ Comparing data with other departments of similar size
- ☐ Reports and Graphics
- ☐ Tracking pursuits
- ☐ Other features

2) Is your department/agency required by the state to capture pursuits? ☐ Yes ☐ No

3) Does the state require your department/agency to submit pursuit data? ☐ Yes ☐ No

a) If yes, how is the data submitted?

- ☐ Paper
- ☐ Disk/CD
- ☐ Online

4) Does your department/agency enter all pursuits into the Database? ☐ Yes ☐ No

5) Are any other databases or methods used to document pursuits? ☐ Yes ☐ No

6) What **Features** would your department/agency like to see added to the Police Pursuit Database?

_____
_____
_____
_____

7) What **Reports** would your department/agency like to see added to the Police Pursuit Database?

_____
_____
_____
_____

IACP POLICE PURSUIT DATABASE
User Questionnaire

8) Has your department/agency ever contacted the IACP for help/information regarding the database? ☐ Yes ☐ No

a) If yes, was the problem corrected? ☐ Yes ☐ No

9) Please share with us how the Police Pursuit Database has **helped** your department/agency.

_____
_____
_____
_____

10) If the Police Pursuit Database **has not been helpful**, please explain.

_____
_____
_____
_____

Thank you for contributing to the Database and for participating in this survey.