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Police Vehicle Pursuit Intervention

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South Carolina Department Of Public Safety
February 1, 2006

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STATE DOCUMENTS

Introduction

Movies and television programs glamorize police pursuits as an exciting thrill ride between pursuer and prey that occurs daily within every city in the United States. In the movies, vehicles often are damaged or destroyed during the chase, but seldom is anyone injured. The reality is that police pursuits do occur daily around the country, but contrary to their portrayal, there are often dangerous and even fatal consequences involved in an officer's decision to pursue a vehicle. A police department's pursuit of vehicles is one of the most controversial aspects of police work. Few things are more damaging to a department's standing in the community than for an innocent citizen to be seriously injured or killed while police pursue a vehicle.

The South Carolina Highway Patrol's primary mission is the enforcement of South Carolina's traffic laws. Since almost all of the agency's enforcement action involves people driving motor vehicles, there is a high probability that any of its officers could be involved in a pursuit situation. The constant conflict for the Highway Patrol has always been the department's desire to apprehend violators against the need to protect the safety of the motoring public. Through the years, the Highway Patrol has taken several steps to address this issue. Some of the steps previously taken include expanded training of officers in the operation of emergency vehicles, a written policy outlining the officer's actions during a pursuit, accurate officer reporting of pursuits and a thorough review of all

pursuits. Even with all of these improvements in the management of police pursuits, the department continues to wrestle with a decision of who, when, and where should officers pursue.

In the department's pursuit policy, the decision to initiate a pursuit of a vehicle lies with the line officer. The department relies on the training and decisions of this officer in instigating any of its pursuits. Once the pursuit has begun, a supervisor who is not involved then has the authority to instruct the officer to discontinue the pursuit based on the conditions at the time. Some of the conditions that a supervisor may consider when choosing to terminate a pursuit are the initial reason for the pursuit, time of day during the pursuit, condition of the roadway, area in which the pursuit is occurring, and the amount of other traffic. If the supervisor allows the pursuit to continue, the pursuing officer has no control of the pursuit and has no tools at his disposal to end the pursuit. The department's current policy considers the forcible stop of another vehicle to a deadly force situation, which is along the same lines as using a firearm on a subject. Quite simply the pursuing officers must just follow the vehicle until it either stops voluntarily, crashes, or runs out of fuel. On May 16, 2005, Trooper Jonathan Parker died when his patrol vehicle was purposely struck by a fleeing felon's vehicle that was being pursued by the South Carolina Highway Patrol and other agencies. The suspect had robbed a convenience store, had fled from police for more than one hour, and had traveled more than one hundred miles before colliding with Trooper Parker's vehicle. The department seeks to address its officers need to control pursuits but still readily apprehend violators. In every type of enforcement action other than pursuits, officer's take immediate control of the situation to prevent themselves,

others, and the violator from being injured. The police pursuit has become the only situation where police officers allow the violator to dictate what happens and simply hope for the best.

Data Analysis

To try to improve the agency's pursuit management, an analysis of actual pursuit data was done. There was also an analysis of how other state patrol and police agencies manage their pursuits and what tools they use. These agencies were interviewed to determine the policies that govern their pursuits, and to find what tools they found were most effective in safely ending pursuits. There was also an analysis of what citizen's organizations think about police pursuits. *Pursuit Watch*, a national pursuit watchdog group, has the opinion that police agencies should limited pursuits for only the most severe violations. They espouse that agencies have a good pursuit policy and that the agency carefully scrutinize each pursuit. The South Carolina Highway Patrol currently has taken the approach of a strict pursuit policy that limits the number of vehicles in a pursuit and what they can do during the pursuit. There are currently several other methods of pursuit intervention that the department does not use that should be examined against our actual pursuit data to determine their possible effectiveness. Many departments nationwide use aircraft for pursuits, they use tire deflation devices to disable the tires of fleeing vehicles, or they use a technique know as the PIT Maneuver (Pursuit Intervention Technique) to forcibly stop the vehicle.

Before the evaluation of these possible tools, an analysis of the reports of actual Highway Patrol Pursuits was completed to determine their possible effectiveness. Some of the answers that are sought from the data are:

- How often will an officer be involved in a pursuit?
- What are the outcomes of these pursuits?
- What is the initial violation to cause the pursuit?
- What times of day do pursuits occur?
- How long do the pursuits last?

The following pursuit outcome information comes from an analysis of pursuits (743 pursuits) from years 2003 and 2004. The Highway Patrol was involved in 437 pursuits in 2003 and 306 pursuits in 2004. There are 832 troopers assigned to the Highway Patrol with approximately 700 conducting enforcement operations. In 2004, the Patrol made contact with 525,392 vehicles and issued 439,969 tickets and 263,835 warnings to drivers of these vehicles. Each one of these contacts with vehicles has the potential to be a vehicle pursuit, but a traffic stop only resulted in a pursuit 0.0006 percent of the time. Therefore, the idea that pursuits are an everyday occurrence is not statistically true. Pursuits are often a necessity though, and can be a potentially lethal situation for the officer, suspect, or the community.

Once an officer became involved in a pursuit, the most likely scenario was for the suspect to be apprehended by the officer without a crash or any injuries

- In twenty-four percent of pursuits (178 pursuits), the suspect escaped the pursuing officer.
- In ten percent of the pursuits (74 pursuits), the pursuing officer or supervisor terminated the pursuit.
- In sixty-six percent of the pursuits (491 pursuits), the suspect was apprehended by the officer.

The percentage of SCHP pursuits that ended in crashes was relatively low.

- In twenty-five percent of the pursuits (186 pursuits), the suspect crashed their vehicle. There was one fatality related to these crashes
- In five percent of the pursuits (37 pursuits), an uninvolved citizen was involved in a crash resulting from a pursuit. There was one uninvolved citizen fatality related to these crashes.

In the majority of South Carolina Highway Patrol pursuits, the initial reason for the pursuit was a traffic violation such as speeding, reckless driving or driving under the influence. Since these are, the primary type of enforcement actions taken by officers of the department the primary initial cause is expected. The percentage of initial violations that caused pursuits was:

- In eighty-two percent of pursuits (609 pursuits), the pursuit was for a traffic offense such as reckless driving, driving under the influence, or speeding.
- In eleven percent of pursuits (82 pursuits), the pursuit was for a misdemeanor criminal offense such as simple possession of drugs, larceny, or trespassing.
- In seven percent of pursuits (52 pursuits), the pursuit was for a felony criminal offense such as murder, assault, or armed robbery.

After the pursuit ended, there were often felony charges made against the driver or passengers in the fleeing vehicle. These charges range from murder and assault to weapons charges and possession with intent to distribute controlled substances. Even though the primary cause of a pursuit was a suspect committing a traffic offense, the true reason for them to flee was usually a much more serious criminal offense.

The majority of pursuits occurred during the evening and at a time when traffic would be the least.

- Sixteen percent of pursuits (119 pursuits) occurred from 0701 to 1500.
- Forty-three percent of pursuits (319 pursuits) occurred from 1501 to 2300.
- Forty-one percent of pursuits (305 pursuits) occurred from 2301 to 0700.

The data suggests that South Carolina Highway Patrol officers are making good decisions as to when to pursue a vehicle by not initiating pursuits at inappropriate times such as

morning/afternoon rush hours or during school hours. The time of pursuits also reflects the period of increased criminal activity such as darkness.

Because of the short length of most of the department's pursuits, the initial officer is the only one involved. The length of the pursuits is broken down below:

- In eighty-eight percent of the pursuits (654 pursuits), the officer pursued the suspect vehicle less than twenty minutes.
- In nine percent of the pursuits (67 pursuits), the officer pursued the suspect vehicle between twenty minutes and forty minutes.
- In three percent of the pursuits (22 pursuits), the officer pursued the suspect vehicle greater than forty minutes.

The pursuits that exceed twenty minutes resulted in a greater likelihood of a crash or injury. The data shows that through the agency's pursuit policy, officer training, and careful scrutiny of pursuits, the department has made pursuits safer and more effective than other departments around the country. According to Dr. Geoffrey Alpert, a national police pursuit expert, "the national average for crashes from a pursuit is forty percent with one percent resulting in a fatality." By comparison, twenty-five percent of the pursuits initiated by the South Carolina Highway Patrol ended in a crash with .003 percent of these resulting in a fatality.

Pursuit Management Plan

One of the newest methods to control pursuits is the use of police aircraft to follow a fleeing vehicle. The preferred aircraft for this is the police helicopter. Police helicopters allow agencies to pursue vehicles safely from overhead so that police vehicles can follow the fleeing vehicle at a much slower and safer speed. Police aircraft are very useful in large urban environments where you have a large number of officers concentrated in a small geographic area. The use of aircraft is a very expensive proposition that would require millions of dollars in initial startup cost and hundreds of thousands of dollars in annual recurring operating cost. The South Carolina Highway Patrol would receive little benefit from the use of aircraft because its officers patrol a wide geographic area. In addition based on the analysis of the pursuit data, a helicopter would not have time to respond to the majority of pursuits because of the average length is less than twenty minutes.

Most state highway patrol and state police agencies use a device known as a tire deflation device. A tire deflation device is a row of hollow spikes mounted on plastic that an officer would throw in front of a fleeing vehicle to disable the tires of that vehicle. The hollow tubes puncture the tires of the vehicle struck allowing air a gradual escape thus making the vehicle difficult to drive. These devices have been in use for many years and have helped conclude many pursuits successfully. They are most effective on pursuits that continue for extended periods, and cover great distances. Even though tire deflation devices would only be utilized in a small percentage of SCHP pursuits, these are the pursuits that would be considered the most likely to end in a crash.

Precision Immobilization Technique is a procedure where an officer pursuing a vehicle uses his patrol car to make contact with the rear bumper of the fleeing vehicle. When executed properly, the suspect vehicle will spin to the left and bring the vehicle to a stop. After being taught by police instructors and being used by police officers for several years, it has proven to be an effective and safe tool to end police pursuits. This tool would be the most effective based on the agency's actual police reporting data. It would allow an officer to make a decision to use his vehicle to stop the fleeing vehicle without the assistance of other officers. It would also allow the officer to stop a pursuit before it reached a dangerous speed or location. Based on the data that the majority of the department's pursuits last less than twenty minutes, this could be the most effective tool to manage a pursuit by not allowing the pursuit to continue for extended periods or distances.

By working to minimize the length of pursuits and expanding our training and policies to facilitate even better pursuit decisions, the agency could further reduce the chance of injuries to its officers and the public. The inclusion of tire deflation devices and the PIT maneuver would also help us achieve this goal. The department should then implement a Pursuit Matrix that gives officers the proper guidance of when to pursue, who to pursue, and what kind of intervention technique he or she should use to end a pursuit. Through the implementation of the Pursuit Matrix, the supervisor should take the lead role in pursuit decisions under most conditions.

To implement all of the changes the department would need to take several actions:

- The department would include tire deflation devices and the PIT maneuver in its accepted pursuit policy, techniques, and training. This would require final approval by the director with input from the SCHP Research and Development unit, the SCHP Training unit, and the department's legal staff.
- The department would make a one-time purchase of tire deflation devices. The cost to equip each officer with this equipment would be approximately \$270,000.00. The SCHP Research and Development unit would select and purchase this equipment.
- The department would purchase equipment to train officers how to accomplish the PIT maneuver. The cost for this would be approximately \$7,400.00. The SCHP Research and Development unit would select and purchase this equipment.
- The department would train all officers in the use of the tire deflation devices, PIT maneuver, and the appropriate situation to deploy them. The SCHP Training staff would handle all of this training. Each trooper would have to spend one day away from his or her assigned duties to complete the training.
- The department would develop a Pursuit Matrix to give officers guidance in how to conduct a pursuit. A committee comprised of the SCHP Research and Development unit, the SCHP Training unit, and the DPS legal staff would develop the matrix.

It would take approximately one year to implement these changes into the operating procedures of the department. The first issue would be procuring and issuing the tire deflation devices. The largest hurdle would be the time necessary to train over eight hundred officers in the use of tire deflation devices as well in executing the PIT maneuver. Officers from the Georgia State Patrol and North Carolina State Highway Patrol have offered to assist us with the implementation. Both agencies have considerable experience with these tools.

Other potential issues would be changing the decision making process of the officers through use of the Pursuit Matrix. The department would need to instill these guidelines to insure that the officers continue to make good decisions concerning whether to pursue or to terminate. A potential problem could be that officers start to use the PIT maneuver on fleeing vehicles that they traditionally would have not pursued. During post-pursuit analysis, the supervisors would have to take an even more active role in the review of the pursuit. The supervisors would need to do a thorough review of the options that an officer either used or could have used during a pursuit. This would ensure that officers are using all of their new options in manner consistent with their intended application.

Evaluation of Plan

The Director recognizes that the agency has done a good job in managing pursuits. This is due to our current policy, post-incident review, and training of the officers. The Director also realizes that pursuits that do not end quickly contribute to a dangerous situation for the officer, the suspect, and the public. The officers who will carry out the changes are

desirous to have more choices and tools to end pursuits safely. They currently have a feeling of lack of control by not having any available resources to end a pursuit.

After implementing the plan, a careful review for the department's pursuits would be undertaken. Each pursuit would be analyzed to see if any of the changes either had a direct impact or could have had a direct impact on a pursuit. Some of the relevant data collected and studied would be:

- Did the number of vehicle pursuits decrease after implementation of the plan?
- Was there a decrease in pursuits ending in crashes after implementing the plan?
Was there also a decrease in injuries from the crashes?
- Was there a decrease in the number of pursuits that continued for extended periods?
- Was there any change in the types of initial violations that caused an officer to pursue a vehicle?

Interviews would need to be conducted with the officers and their supervisors to gauge their impression of the changes. Through the interviews, the department could determine if the officers felt better equipped to handle this dangerous part of their duties. The supervisors could offer their opinion if the officers are using the plan properly, and if the changes have contributed to better public safety. If the officers feel confident in the changes, and the department can show a marked reduction in the number of lengthy, dangerous pursuits, then the changes would be successful and worthwhile.

Appendices



South Carolina Department of Public Safety

Vehicle Pursuit Report

Date: _____ Weather: _____ Time Pursuit Initiated: _____ Time Pursuit Terminated: _____

Location Pursuit Initiated: _____ County of Origin: _____

Location Pursuit Ended: _____ Ending County: _____

Race/Sex of Driver: _____ / _____ Initial Violation: _____

Actual Charges Filed: _____

Officer's Name: _____ Rank: _____ Division: _____

Years of Law Enforcement Experience with DPS: _____ Years of Law Enforcement Experience with other agencies: _____

Did the pursuit terminate by the violator crashing? _____ Was anyone injured in the violator's vehicle? _____

If yes, indicate extent of injuries: _____

Did the pursuit terminate by the officer crashing? _____ Was the officer injured? _____

If yes, indicate extent of injuries: _____

Did the pursuit terminate by an uninvolved citizen crashing? _____ Was the citizen injured? _____

If yes, indicate extent of injuries: _____

Did the pursuit involve collisions with more than one citizen? _____ What was the maximum speed during the pursuit? _____

How many DPS vehicles were involved in the pursuit, including your own? _____ Number of other agency vehicles: _____

Were there any other agency vehicles involved in a collision? _____ If yes, was the officer injured? _____

Was a Tire Deflation Device (TDD) Used? _____ Were there any TDD related injuries? _____

What kind of vehicle was the violator driving? _____ Year: _____ Model: _____

Method of Stop: _____

If the Traffic stop was forcible, provide details below:

DPS Supervisor on-duty: _____ Rank: _____

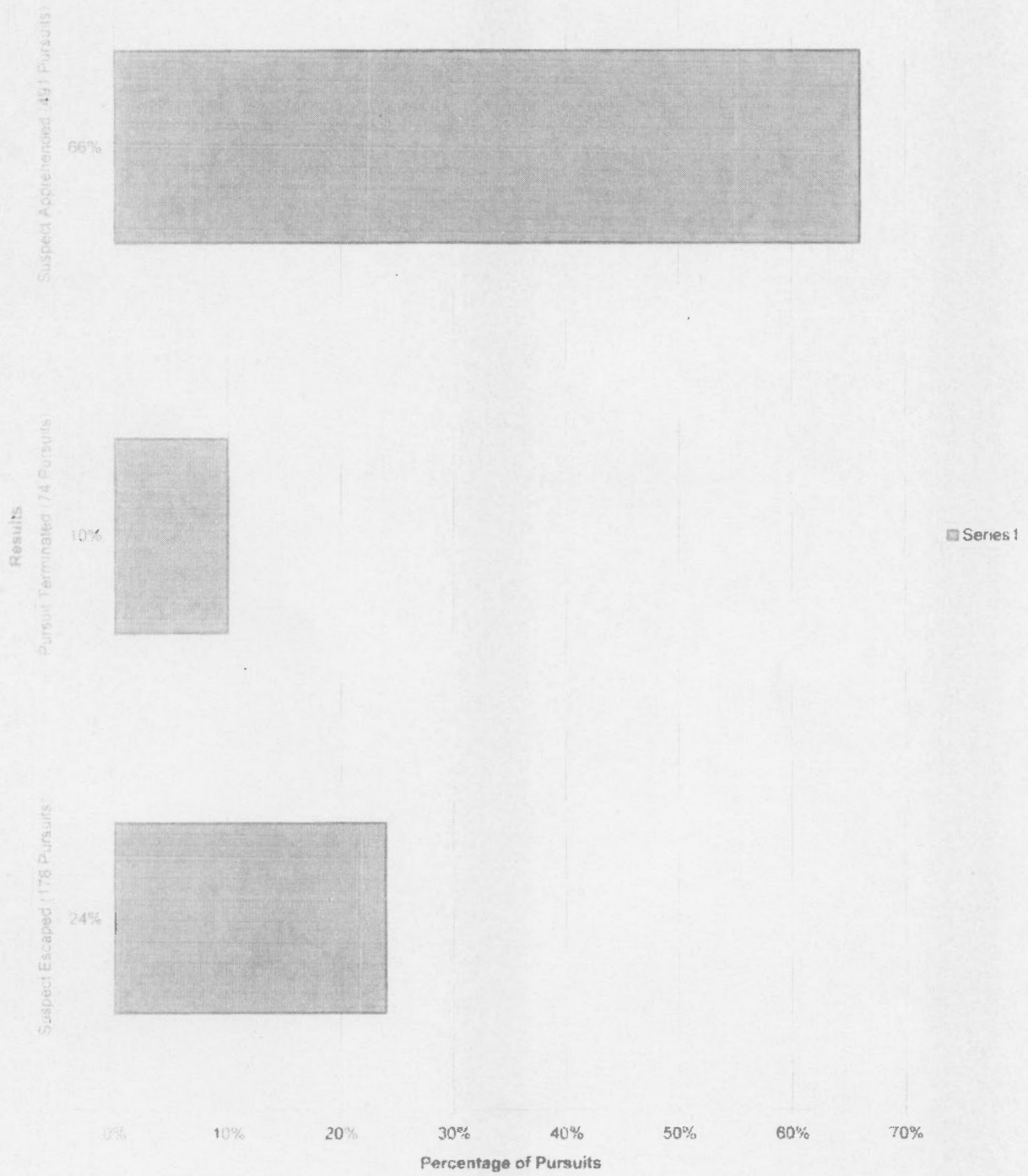
Officer's Signature Date Supervisor's Signature Date

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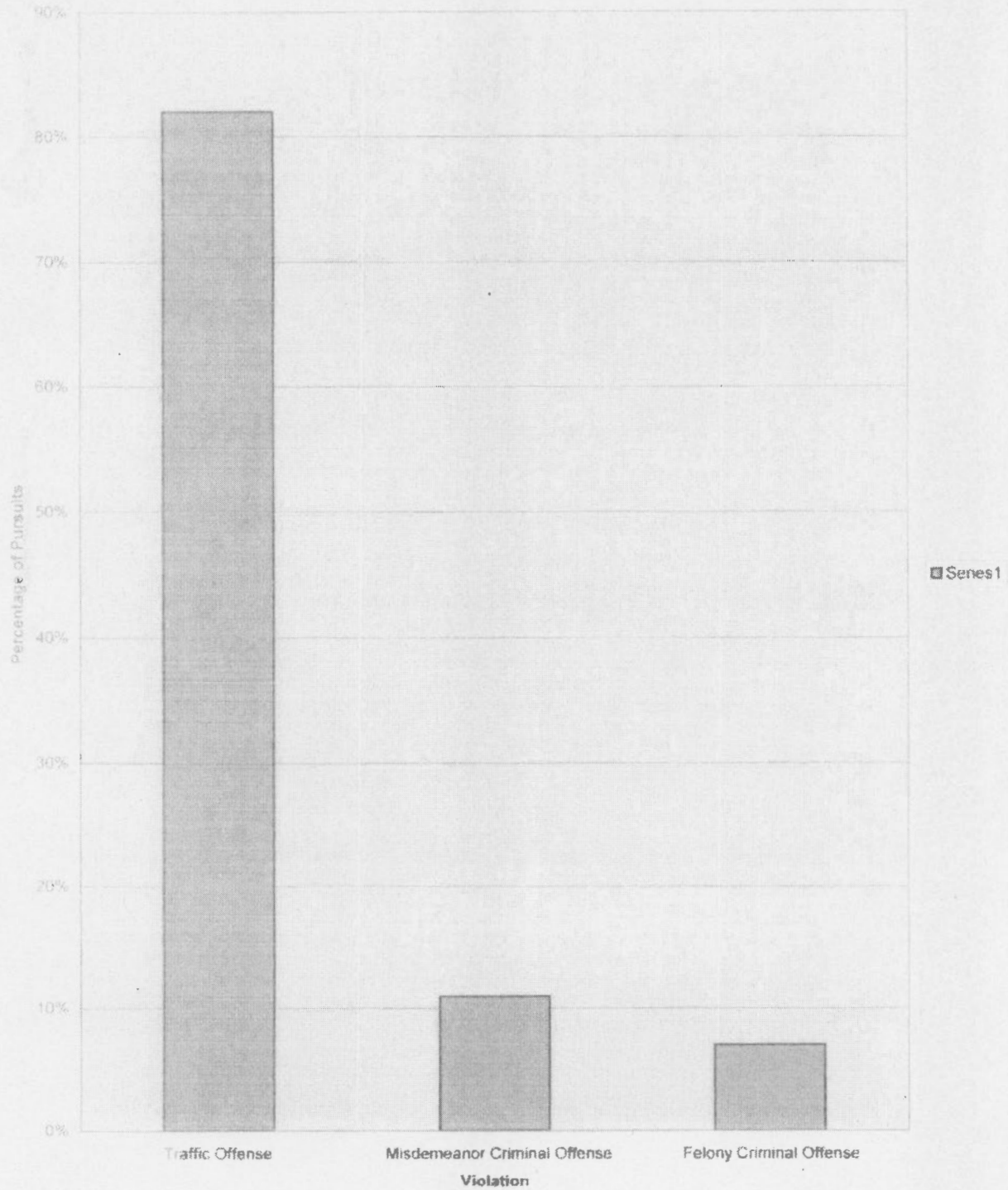
Time DPS Supervisor Notified of Pursuit: _____ Location when notified: _____

Supervisor's Comments

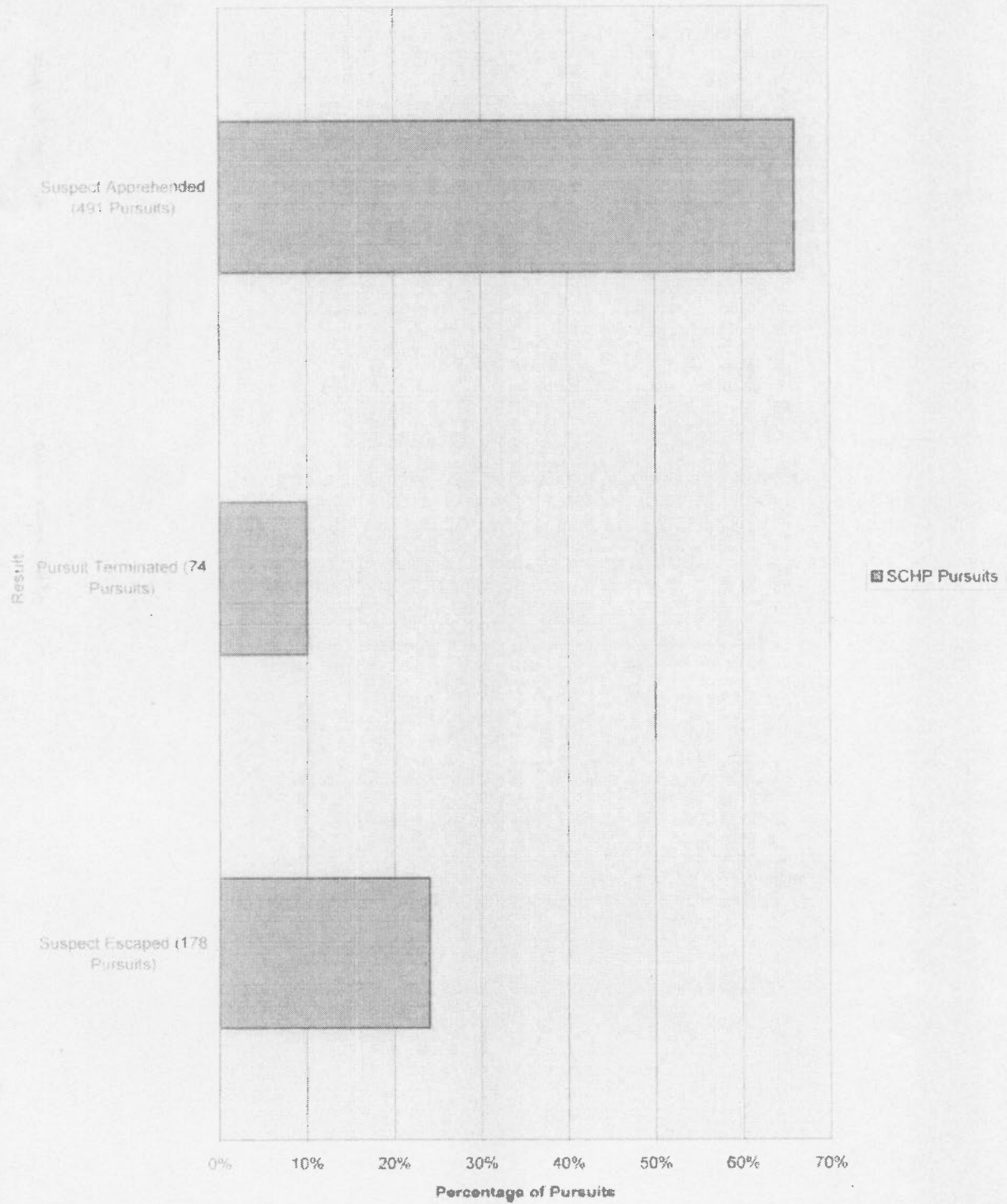
Pursuit Outcomes



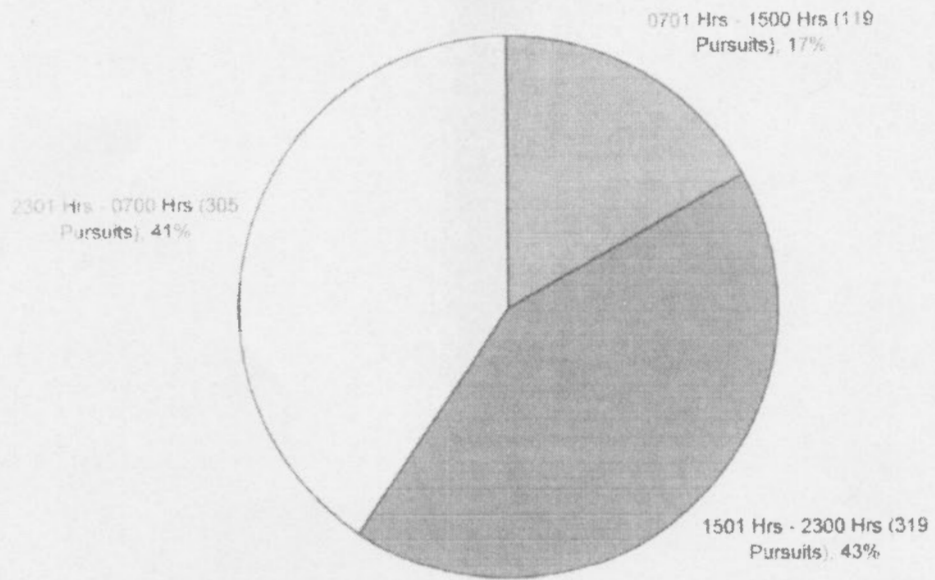
Initial Pursuit Violation



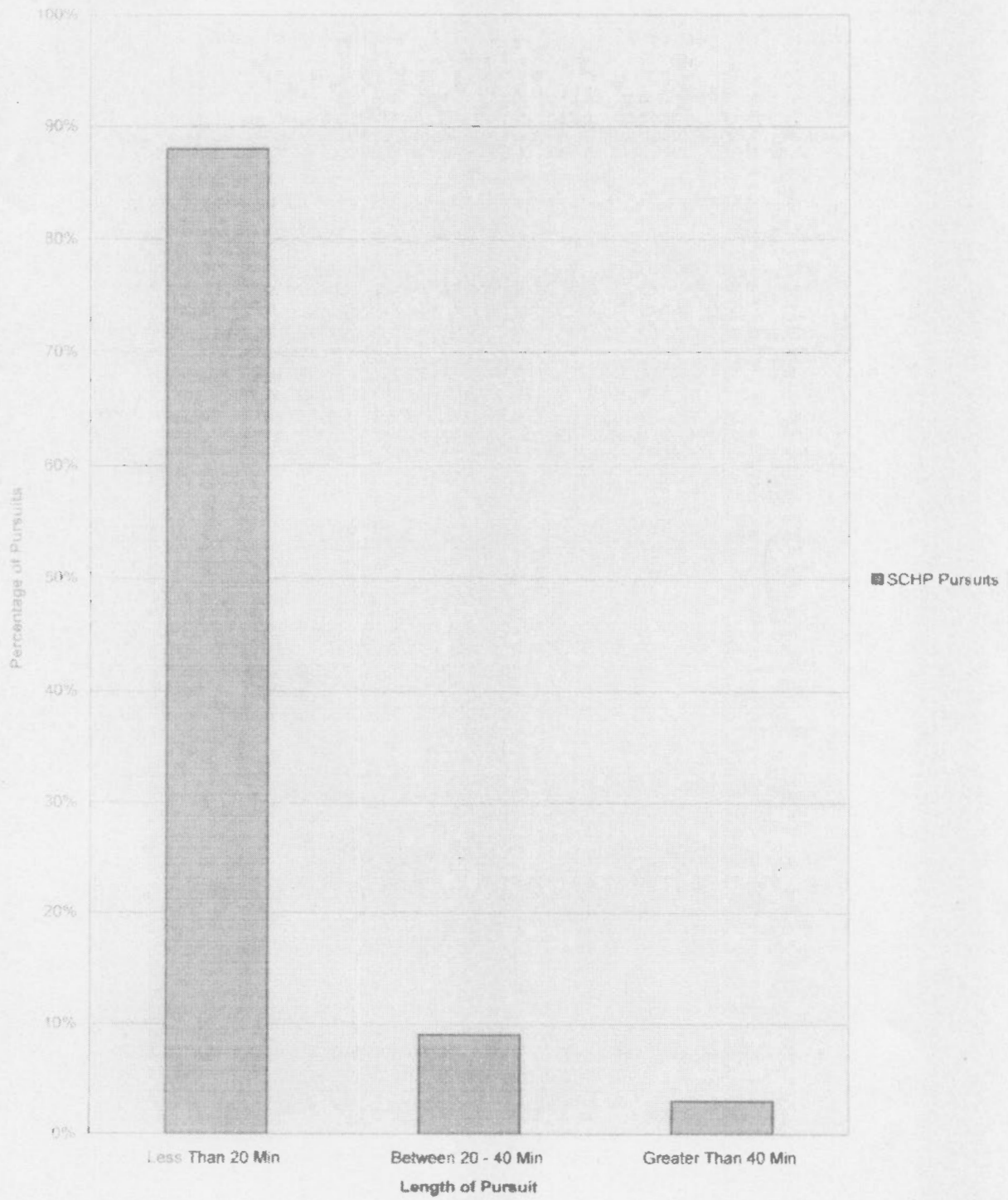
SCHP Pursuit Results



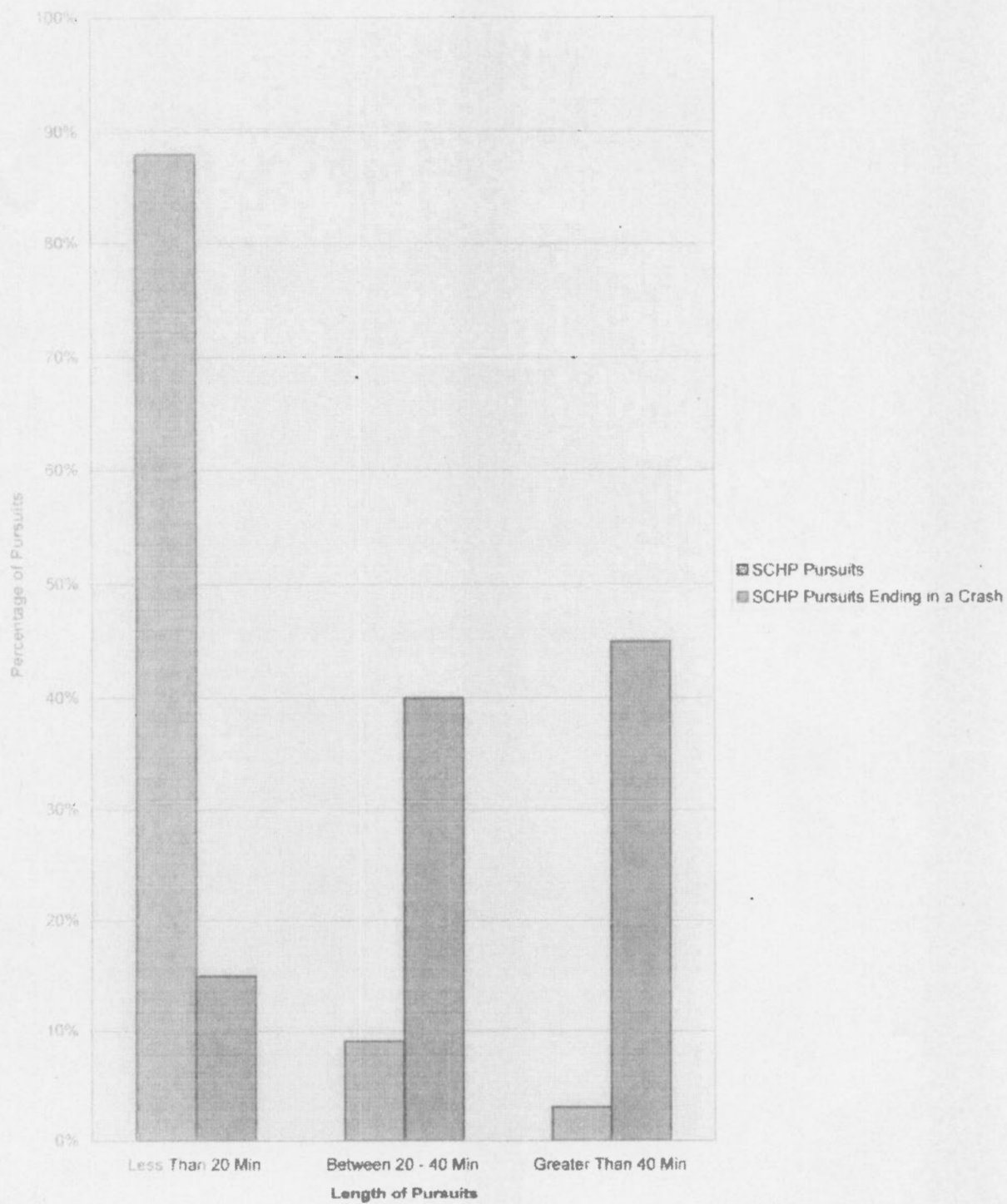
Time of Pursuit



SCHP Pursuit Lengths



Comparison of SCHP Pursuits and Resulting Crashes



States that utilize Precision Immobilization Technique (PIT)

State	Authorization	Execution	Training
Colorado	Trooper has discretion	No minimum or maximum speeds	PIT Training Required
Georgia	Trooper has discretion	No minimum or maximum speeds	PIT Training required
Minnesota	Trooper has discretion	40 MPH or less on straight roadways 25 MPH or less in cornering situations <40 MPH = Deadly Force	PIT Training required
North Carolina	Authorized by a supervisor; however, if immediate action is necessary or authorization is impractical trooper has authority.	Not to exceed 35 MPH	PIT Training required
Washington	>40 MPH discretion of trooper <40 MPH supervisor approval	Trooper can not be disciplined for not executing PIT	Must complete WSP PIT Training Program

Survey Results for Use of PIT and TDD Devices

State	Precision Immobilization Technique (PIT)	Tire Deflation Device (TDD)	Out of State Pursuits
Alabama	No	Yes	Yes
Arizona	No	Yes	No
Colorado	Yes	Yes	No
Florida	No	Yes	Yes
Georgia	Yes	Yes	Yes
Illinois	No	Yes	Yes
Indiana	No	Yes	No
Kentucky	No	Yes	Yes
Maryland	No	Yes	No
Minnesota	Yes	Yes	No
North Carolina	Yes	Yes	Yes
South Dakota	No	Yes	Yes
Tennessee	No	Yes	Yes
Vermont	No	Yes	Yes
Washington	Yes	Yes	Yes
Wyoming	No	No	No

Southeastern State Police and Highway Patrol

When to Pursue

State	When to Pursue
Alabama Highway Patrol	Trooper has discretion The officer must reasonably and in good faith believe that the potential dangers and foreseeable consequences of the pursuit are justified by the seriousness of the offense. May pursue if trooper believes the suspect has committed or attempted to commit a crime of violence. ALL OTHER PURSUITS ARE PROHIBITED.
Florida Highway Patrol	Members are authorized to pursue suspects who are reasonably thought to be violent and pose a danger to the public at large. Trooper has discretion
Georgia State Patrol	Sworn members of the Georgia State Patrol are expected to make reasonable efforts to apprehend violators who flee or otherwise attempt to elude Trooper has discretion
Kentucky State Police	The Kentucky State Police will apprehend fleeing violators when conditions exist that do not endanger the lives, property or safety of motorists, citizens or members of the agency. Trooper has discretion
Louisiana State Police	Each decision to pursue must be based upon the conditions and circumstances existing at the time. It is imperative that the officer weigh the need for immediate apprehension of the violator against the risk created by the pursuit. Trooper has discretion
Mississippi Highway Safety Patrol	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. Trooper has discretion, however, troopers shall not pursue the wrong way on an interstate or other highway with lanes of travel separated by a median or other physical barrier.
North Carolina State Highway Patrol	... may initiate a chase when the member, after weighing the nature and gravity of the offense or situation and the external physical conditions, determines that the need for apprehension of the suspect or violator is greater than the danger of the chase to the public, the member, and the suspect or violator and that such chase can be accomplished with due regard for the safety of others.

State	When to Pursue
South Carolina Highway Patrol	Trooper has discretion The pursuit is justified only when the necessity of the apprehension of a suspect outweighs the risks created by the pursuit.
Tennessee Highway Patrol	Trooper has discretion The officer must weigh the need for immediate apprehension against the risk created to all others by the pursuit.
Virginia State Police	Trooper has discretion. No pursuit will be conducted in a direction against the lawful flow of traffic on a one-way street or lane of a divided highway. ... officers should consider both the potential harm to persons and property arising from the pursuit as well as the potential harm threatened by the escaping offender.

Tire Deflation and PIT Maneuver Implementation Costs

Tire Deflation Device Cost

There are currently three manufacturers of reliable Tire Deflation Devices: *StopStick*, *Stinger Spike Strips*, and *Magnum Spike*. All three of these devices are similar in operation, price, and performance. They each require an officer to throw the spike strip across the roadway, pull the spikes into the path of the fleeing vehicle, and then after the fleeing vehicle is spiked, the officer has to pull the spikes from the roadway.

1. We have 650 troopers who would need to be issued the devices. The average cost for a TDD is \$409.00 per unit
2. Our total initial cost to purchase the devices, training kits, and a supply of replacement parts would be approximately \$270,000.00.
3. Each trooper will need to attend a training session that will last 2-3 hours.

Before purchasing, we would need to set criteria for our selection of Tire Deflation Devices, and evaluate each manufacturer on performance, features, and safety.

PIT Maneuver Cost

We are currently equipping all new SCHP vehicles with vehicle push bumpers. While these are not required to implement the PIT maneuver, they would greatly minimize our repair cost. We would also need to equip four vehicles for use in PIT training.

1. The cost for a push bumper is \$ 147.00 each. We have approximately 550 troopers who would need them installed on their vehicles. Total cost would be \$80,850.00
2. The cost for us to equip each training vehicle is approximately \$1,600.00 for a total for the four at \$7,400.00 plus the value of each vehicle.

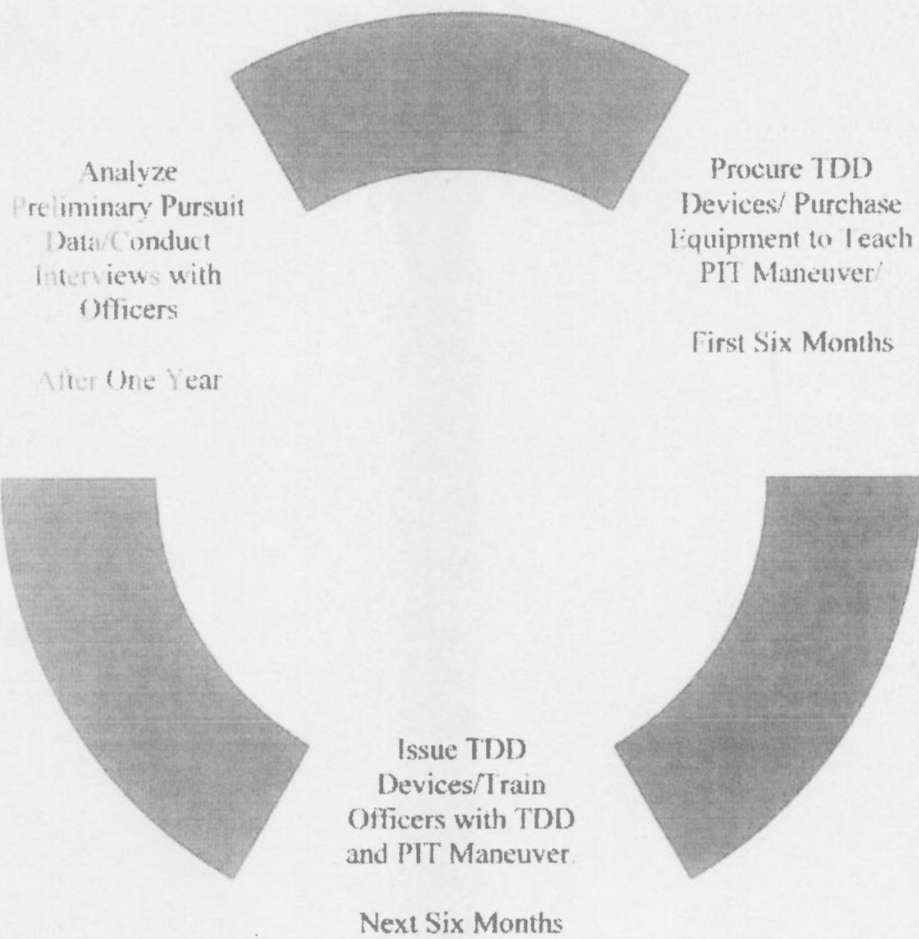
Most of the push bumper installs would occur as the new vehicles are issued to the troopers, and this is an expense that we have already planned.

Vehicle Pursuit Decision Making Matrix

Violation	Speed	Vehicular/Pedestrian Volume	Area (rural/urban)	Pursuit Management	Termination Options
Minor Traffic Violation	High	High	Urban	No Pursuit	NA
Minor Traffic Violation	Low	Low	Urban	Supervisor Discretion	Discontinue, TDD, PIT
Minor Traffic Violation	Low	Low	Rural	Trooper/Supervisor Discretion	Discontinue, TDD, PIT
Minor Traffic Violation	High	Low	Rural	Supervisor Discretion	Discontinue, TDD, PIT
Criminal Violation	High	High	Urban	Supervisor Discretion	Discontinue, TDD, PIT
Criminal Violation	Low	Low	Urban	Supervisor Discretion	Discontinue, TDD, PIT
Criminal Violation	Low	Low	Rural	Trooper/Supervisor Discretion	Discontinue, TDD, PIT
Criminal Violation	High	Low	Rural	Supervisor Discretion	Discontinue, TDD, PIT

Should not focus on violation.
termination options.

Should focus on factors/considerations and



Pursuit Intervention Implementation and Evaluation Time Chart

Works Cited

- Alpert, Geoffrey P. United States. Office of Justice Programs. Department of Justice. Helicopters in Pursuit Operations. Washington, DC: National Institute of Justice, 1998.
- Alpert, Geoffrey P. United States. Office of Justice Programs. Department of Justice. Police Pursuits:Policies and Training. Washington, DC: National Institute of Justice, 1997.
- Associated Press. "South Carolina Trooper Killed in Crash." The State 18 Mar. 2005, sec. B: 1+.
- Canada. RCMP Public Complaints Commission. Royal Canadian Mounted Police. Police Pursuits and Public Safety. 03 July 2003. 12 Dec. 2005 <<http://www.cpc-cpp.gc.ca>>.
- Phillips, James. "Police Pursuits: A National Epidemic." Pursuit Watch. 7 Dec. 2003. Pursuit Watch. 21 Dec. 2005 <<http://www.pursuitwatch.org>>.
- South Carolina. South Carolina Highway Patrol. South Carolina Department of Public Safety. DPS Vehicle and Foot Pursuit Policy. Columbia, South Carolina: SCDPS, 2000.
- Travis, Jeremy. United States. Office of Justice Programs. Department of Justice. High Speed Pursuits:New Technologies Around The Corner. Oct. 1996. 15 Dec. 2005 <<http://www.nlectc.org>>.
- Yates, Travis. "Police Pursuits:Safety vs. Apprehension." Police One. Tulsa, Oklahoma Police Department. 23 Jan. 2006 <<http://www.policeone.com>>.