

University of Pennsylvania
Fels Institute of Government

PENNSYLVANIA
RADAR
&
THE PRICE OF SPEED

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1. INTRODUCTION

Like most motorists that drive in the state of Pennsylvania when you get in your vehicle, you buckle your seat belt and you begin your journey for wherever you are going. Depending on what time of day you were driving and where you are located, it could possibly determine how you drive, or the other types of drivers you encounter. When driving to work first thing in the morning, if you do not encounter traffic jams, you will most inevitably encounter impatient drivers who are either running late for work or have no patience at all. If your route has you taking a highway, most likely you are going with the flow of traffic. With that flow of traffic did you notice if you were doing the speed limit? Did you look to see how fast you are going? Are you speeding?

If you ever have been pulled over for speeding, chances are the police officer pulling you over is a Pennsylvania State Trooper. This is because the way the Trooper measured your speed was by use of Radar (or similar technology i.e., laser, lidar). By the time you noticed the Trooper they most likely already measured your speed. Though while you may see radar in use on our highways, local law enforcement is forbidden by law to utilize it as a public safety tool. Local police officers which are referred to as Municipal Police, must use other methods to measure your speed, such as Robic (stopwatch), VASCAR (outdated technology), a device called ENRADD or pacing a vehicle by following a vehicle using the speedometer in the police car. All these methods are time consuming, and antiquated. They are also most likely noticed by drivers before they are measured. Pennsylvania is the only state that has written into law that electronic devices such as radio-microwave devices, commonly known as radar, may only be used by members of the Pennsylvania State Police. Because the law is written this way this prevents all municipal police officers in the state of Pennsylvania from using radar. Pennsylvania is the only state that currently does not allow local law enforcement to use RADAR in the entire country.

2. PROBLEM STATEMENT

The National Highway Traffic Safety Administration (NHTSA) has ranked Pennsylvania #3 in speed related traffic fatalities in the United States for 2017 and 2018¹. Pennsylvania crash statistics show that speed is the contributing factor in crashes and fatalities in the state. The most noticeable data is where these crashes are happening. About 83% of all speed related fatalities are occurring on Non-Interstate roadways which are local roadways patrolled by local police. The enforcement of speed regulations along these roadways are often difficult and likely in rural areas with small departments with limited resources. Over the years there has been growing support from mayors and leaders from municipalities state wide pushing for a change in the law to allow the use of radar at the local level. Getting this valuable tool in the hands of police officers will dramatically reduce the number of speed related crashes, and reduce speed related fatalities as well.

Legislation has been introduced several times to address this discrepancy in traffic safety enforcement. Most recently in 2020 Senate Bill 607 passed the Senate and stalled in House Transportation Committee where it eventually died when the Legislative session ended in 2021. This has happened in previous legislation where the State House or Senate will not vote on the legislation and it sits without getting further consideration or movement. A repeating theme is that local departments will use radar to generate revenue, and some legislators amend the legislation to address law enforcement abuse, rather than prevent crashes.

¹Crashstats.nhtsa.dot.gov. *2018 Speeding Fact Sheet*. [online] Available at: <<http://file:///C:/Users/User/Downloads/2018%20SPEEDING%20Traffic%20Safety%20Fact%20Sheet.pdf>>

As a trained law enforcement professional, I have over 20 years of experience and specialized training investigating vehicle crashes. My experience in investigating fatal and serious accidents shows speed has always been the prime factor. Whether negotiating a curve, current road conditions, or reacting to other traffic in roadway, these crashes could have been avoided if the vehicles were not speeding. Speeding is the number one complaint of residents in local jurisdictions. The methods used by local police to enforce speed can be challenging. One-way streets and small neighborhoods with on street parking make it difficult to enforce speed. Manpower is another major factor as well. With some departments forced to do more with less, they lack the time while on duty to enforce many traffic regulations. Policing in America has changed with technology. The use of radar could address these issues and be easily deployed when needed. Being refused technology that can have the potential for saving lives is irresponsible. It is proven reliable technology and its use has been proven to reduce speed related crashes. Scott L. Bohn, executive director of the Pennsylvania Chiefs of Police Association argues that the state could have saved as many as 1,933 lives between 2011 and 2017 if municipal police could have used radar².

The past decade has seen repeated failed attempts to pass legislation. There does not seem to be a good reason why, other than a belief that local municipalities will use radar as an opportunity to generate revenue by issuing citations. There is no specific evidence that this will happen but legislators have consistently placed limitations on the bill to limit radar use. The 49 other states in the country do not have any issue with radar use. There are no laws prohibiting or restricting the use of radar, and there is no reported widespread misuse. As Pennsylvania moves into a new legislative session a new bill was introduced as has moved forward and awaits its fate. Now is the time to get this done, to make a change and save some lives.

3. SPEED HISTORY

To understand why Pennsylvania has not changed its laws in many years, you need to understand a little history. Since the invention of the automobile, there has been a love affair with cars and speed. When the automobile was first invented, people were not concerned with speeding or safety, they were amazed at this invention that only rich people could afford. There were no paved streets. There were no sidewalks. Horses and buggies were the primary source of transportation and far outnumbered automobiles at the time. After the first few years, the automobile led to injuries and deaths of mainly pedestrians. In 1923 Cincinnati residents pushed for a law to have a mechanism in vehicles to prevent them from traveling over 25 mph. This was successfully defeated by vehicle manufacturers, who in turn waged a psychological campaign to get pedestrians out of the streets³. The term jaywalking was invented to make fun of pedestrians walking in traffic, and the American



² Boeckel, T., 2021. *Radar for Municipal Police in Pennsylvania*. [online] Ydr.com. Available at: <<https://www.ydr.com/story/news/2021/03/24/radar-pennsylvania-municipal-police-its-time-get-done-chief-says-legislative-bill/6955907002>>

³ Thompson, Clive, 2014. *When Pedestrians Ruled the Streets*. [online] Smithsonian Magazine. Available at: <https://www.smithsonianmag.com/innovation/when-pedestrians-ruled-streets-180953396/>

Automobile Association (AAA) was providing curriculum to US schools in the 1920s to spread the idea of school safety to help keep kids out of the streets. One such program was the School Safety Patrol, where select students wore a colored strap that went over their shoulder and around their waist. The main drive was to help keep fellow students out of the street before and after school. Technology progressed through the decade's vehicles became safer and roadways were engineered better. But one thing technology could not control was the will, and desire of the individual person driving that vehicle. Laws were created to regulate traffic to improve safety. Connecticut created the first statewide traffic laws in 1901. The laws only regulated vehicle speeds. The limits were 12 MPH on city streets and 15 MPH on country roads⁴. One of the most important laws was regulating and the enforcement of speeding. The most advanced technology from the 20th century to help enforce speeding was the use of radar. The 1st Police Department to use radar to measure speed was the city of Chicago in 1954.

On September 1, 1961, The Pennsylvania State Police officially began radar speed checks. Almost 60 years since Radar was introduced in Pennsylvania, They have used it to monitor and enforce speeding. The laws governing the use of radar are found in Title 75 which is the Vehicle code under Speed Timing Devices, Section 3368 (c) (2), that only members of the Pennsylvania State Police can use radar technology. It was believed, because Pennsylvania State Troopers were trained with higher standards and were a more professional organization than local municipal law enforcement at that time. Politicians at the time were worried that small departments would use radar as a money maker for their small towns⁵. Until 1974, local police officers were basically given on the job training usually by the other officers who they were employed by. Standardized training for local law enforcement began in 1974 with the creation of the Municipal Police Officer's Education and Training Commission (MPOETC). This required all police officers to be trained to a set standard like the State Police. Training improved over the years and the requirements were strict in order to receive certification. To this day Police officers must complete yearly mandatory training and education as part of the certification process. The standard for municipal police is same as Pennsylvania State Police.

4. CRASH DATA FACTS

According to the National Highway Traffic Safety Administration (NHTSA) in 2018 there were 36,560 traffic fatalities in the United States⁶. Of those traffic fatalities 9,378 were related to speeding. In Pennsylvania there were 32,710 reported crashes in 2018 where speed was a factor, which resulted in 397 deaths⁷. Of the over 120,000 miles of roads and highways in Pennsylvania,

⁴ Dedrick, D., 2019. *The History of Driving Laws (1901-1960) - Healing Law*. [online] Healing Law. Available at: <<https://healinglaw.com/blog/the-history-of-driving-laws-1901-1960/#:~:text=To%20respond%2C%20in%201901%2C%20the,laws%20only%20regulated%20vehicle%20speeds>>

⁵ Pamayors.org. 2021. *The Radar Coalition | The Pennsylvania State Mayors' Association*. [online] Available at: <<http://www.pamayors.org/radarcoalition.html>>

⁶ Crashstats.nhtsa.dot.gov. 2018 *Speeding Fact Sheet*. [online] Available at: <<http://file:///C:/Users/User/Downloads/2018%20SPEEDING%20Traffic%20Safety%20Fact%20Sheet>>

⁷ PennDOT.gov. 2019. *Pennsylvania Crash Facts and Statistics 2018*. [online] Available at: <https://www.penndot.gov/TravelInPA/Safety/Documents/2018_CFB_linked.pdf>

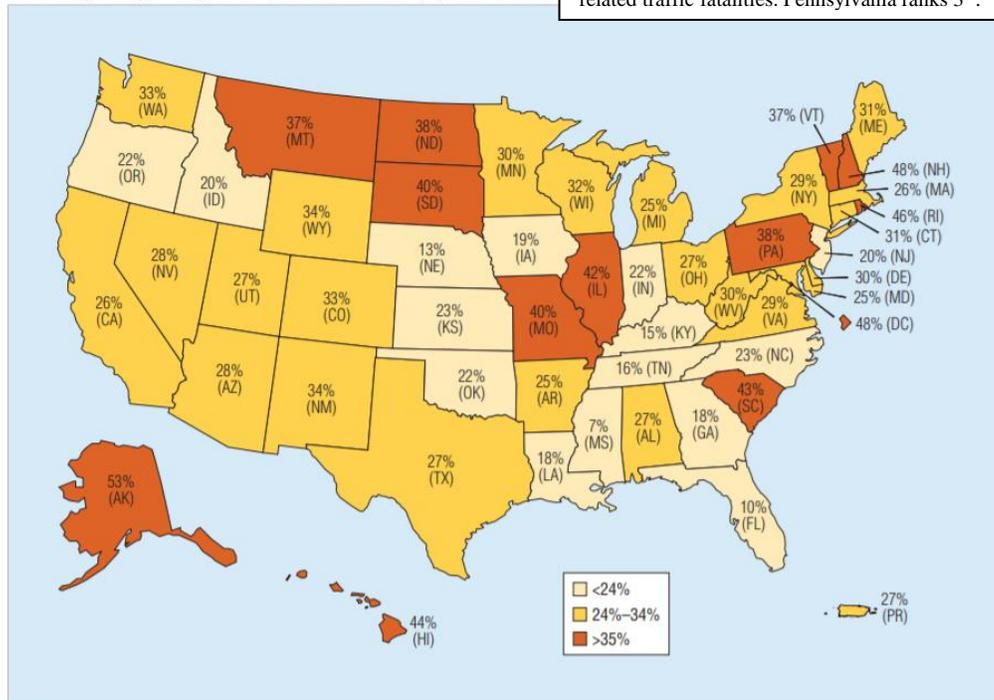
33% (39,739 miles) are state highways which are patrolled by the Pennsylvania Police (PSP) while remaining 67% (80,788 miles) are local roads which are primarily patrolled by local police⁸.

Almost 83% of all speed related fatalities occurring on Non-Interstate roadways which are local roadways patrolled by local police. Pennsylvania has 986 local police departments. That is a tremendous area to cover with police departments that are limited on resources.

Figure 9

Percentage of Speeding-Related Traffic Fatalities, by State, 2018

Map shows states that are over 35% speed-related traffic fatalities. Pennsylvania ranks 3rd.



Source: FARS 2018 ARF

Police in local areas are forced to use old methods which are time consuming and not as accurate. Most residents are aware of the methods in local jurisdictions how they enforce speed. Most small departments use painted lines across the roadway where a stopwatch or a VASCAR unit is used. The stopwatch used is called a ROBIC which is a specific model to be used. The painted lines across the roadway measured distance apart. That distance is calculated into a percentage which is entered into the stopwatch. When a vehicle approaches the officer presses the button to start the timer once the front tires cross the lines. The button is pressed again once the vehicle reaches the second set of lines. The average speed will be displayed on the stopwatch. VASCAR works similarly with an exception. The device is mounted in the vehicle and is connected to the transmission of the vehicle. It can be used to measure a distance then used to clock vehicles. It can also measure speed while moving, because it is connected to transmission, it can calculate speed and distance. But both require input from the officer which can lead to some discretionary issues. Another device is something called ENRADD which is electronic but does not use radar. ENRADD systems are set up on the roadway and have two infrared beams, like the beam at the bottom of your garage door to stop it from closing on your car. They are set up on roadway across from each other on both sides of the roadway. When the vehicle drives past the set of beams, the speed is displayed wirelessly to the patrol vehicle. This allows the officer to be

⁸ PennDOT.gov. 2019. *Pennsylvania Crash Facts and Statistics 2018*. [online] Available at: <https://www.pennDOT.gov/TravelInPA/Safety/Documents/2018_CFB_linked.pdf>

down the roadway hidden from view. The only issue with this device, it is very expensive, over \$7k and many departments could not afford this. Also, this will be left along the side of the roadway, and someone would be tempted to stop and pick it up not knowing what it is. Most people know when they see the painted lines across the road they are used by local police to measure speed, and they slow down. Because of the lack of radar in these communities some drivers engage in risky behaviors and drive at unsafe speeds with little thought of consequence. People know that police are not monitoring speed most of the time, so speeding becomes the norm.

5. THE COST ON SOCIETY

We do not generally think that when an accident occurs that the effect is directly on anyone other than who is involved with the incident. The truth is, there is an economic impact to everyone. In a 2008 study the Federal Highway Safety Administration (FHWA) put a dollar value based on 11 comprehensive components including property damage; lost earnings; lost household production; medical costs; emergency services; travel delay; vocational rehabilitation; workplace costs; administrative; legal; and pain and quality of life.⁹ In 2005 dollars the per person cost of a traffic fatality is \$3,246,192.

In Pennsylvania, the costs based on similar comprehensive components in 2018 are averaged to \$12,203,314 per fatality¹⁰. The 397 speed related fatalities from 2018 have an economic loss of \$4,844,715,658. Figure A shows economic loss from reportable traffic crashes with calculated costs and break down a cost for every person in the state of Pennsylvania. Figure B shows contributing factors of crashes, which shows speeding has the highest reported crashes and fatalities of any other category.

Economic Loss Due to Reportable Traffic Crashes

Max Severity	Number	Average Cost	Estimated Total Costs
Fatal Injury (crashes)	1,103	\$12,203,314	\$13,460,255,342
Suspected Serious Injury (crashes)	3,789	\$701,601	\$2,644,334,189
Suspected Minor Injury (crashes)	25,443	\$225,691	\$5,742,256,113
Possible Injury (crashes)	27,553	\$129,596	\$3,570,758,588
Property Damage Only (crashes)	70,552	\$12,110	\$854,384,720
TOTAL			\$28,271,988,932

**In 2018, the economic loss due to traffic crashes was
\$2,051
to every man, woman, and child in Pennsylvania.**

The economic loss per Pennsylvania citizen is based on the ratio of estimated total cost to the estimated total population of Pennsylvania. Also note that the Federal guidelines changed for determining the average cost of a crash in 2018. Cost is now based on max crash severity, not injury severity level.

8 Pennsylvania Department of Transportation

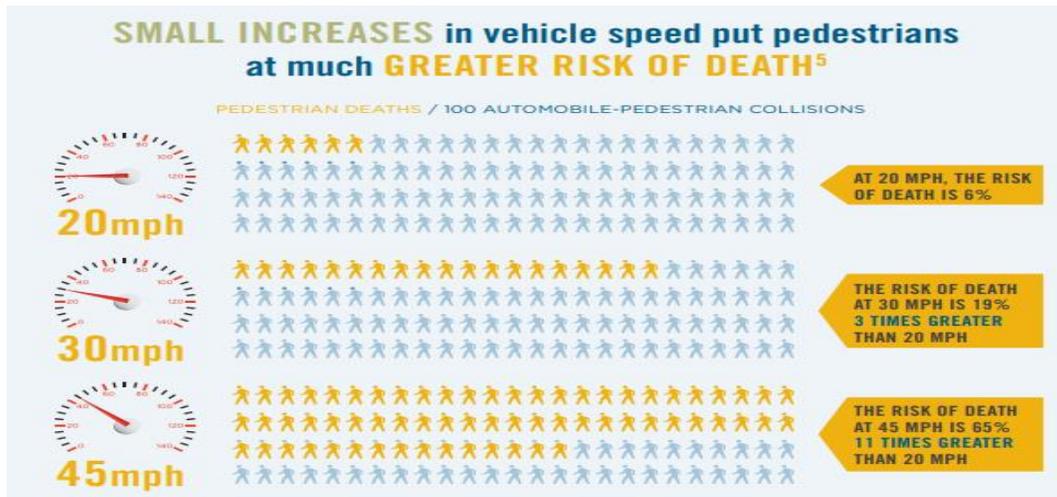
6. Pedestrians and Speed

⁹ Meyer Ph.D., M., 2008. *Crashes Vs. Congestion- What's The Cost To Society*. Newsroom.aaa.com. Available at: <<https://newsroom.aaa.com/wp-content/uploads/2011/10/200835920140.CrashesVsCongestionExecutiveSummary2.28.08.pdf>>

¹⁰ PennDOT.gov. 2019. *Pennsylvania Crash Facts and Statistics 2018*. [online] Available at: <https://www.pennDOT.gov/TravelInPA/Safety/Documents/2018_CFB_linked.pdf>

Speed has a significant impact on pedestrians which put them at greater risk of serious injury or death. As it was previously stated, since the invention of cars, pedestrians are the most vulnerable and at risk when it comes to being struck by a vehicle. In 2018 48.8% of fatal pedestrian accidents occurred entering or crossing a street¹¹. The faster the car is going, the more likely the crash will be fatal. A pedestrian struck at 30 mph has a 20% fatality rate, compared to a pedestrian struck at 40 mph has a 90% fatality rate.

Shopping districts where traffic is a concern can have an impact on the local economy. A community's walkability level indicates a community where it is easy and safe to walk to goods and



services (i.e., grocery stores, post offices, health clinics, etc.) and one that encourages pedestrian activity, expands transportation options, and has safe and inviting streets that serve people with different ranges of mobility¹².

Speed reduction may have co-benefits beyond health and safety. The economic cost to society of speeding related crashes is enormous. Some interventions that slow speed in residential and commercial areas can have a positive effect on local businesses. Making areas with businesses more walkable can increase pedestrian traffic and, therefore, the numbers of customers. Pedestrians are more likely to see window displays, to go into more stores, and to stay longer. In Los Angeles, walkable shopping districts had greater retail activity, up to four times greater than strip shopping areas. Customers who arrive by foot or bicycle in a neighborhood shopping area visit the most often and spend the most money, and modest increases in “Walk Scores” (based on the number of destinations within a short distance of a particular location) can raise home and commercial property values¹³. You can see these examples in Pennsylvania such as Town Center

¹¹ Penndot.gov. 2019. *Pennsylvania Crash Facts and Statistics 2018*. [online] Available at: <https://www.penndot.gov/TravelInPA/Safety/Documents/2018_CFB_linked.pdf>

¹² McCabe, K., Schoneman, K. and Arcaya, M., 2013. *Community Speed Reduction And Public Health*. [online] Health resources in Action. Available at: <https://hria.org/wp-content/uploads/2017/01/TechReport_131209.pdf>

¹³ McCabe, K., Schoneman, K. and Arcaya, M., 2013. *Community Speed Reduction And Public Health*. [online] Health resources in Action. Available at: <https://hria.org/wp-content/uploads/2017/01/TechReport_131209.pdf>

in King of Prussia PA which combined residential with retail and dining. The design is pedestrian friendly and engineered with safety. Vehicular traffic is restricted to outer areas where you would have to park and walk to store areas. Property values in this area are at a premium compared to residents of similar sizes located outside this area. This is become more popular design in future living lifestyles. Though the roadways that feed into these areas are of concern because they are usually main arterial roads. Efforts to keep incidents of crashes low, police enforcement efforts need to be maintained.

7. The Psychology of Speed

Psychology plays an especially important role in human behavior. There are always factors that will play a role in human decision-making including those factors on why people speed. In a modern society as today, social norms have influence on the decisions we make. At times we will decide on what is popular versus over what we really want or need. We will also be influenced by what most people are doing versus what we would want to do. In the 1956 Asch Conformity Experiment, one person (test subject) was placed in a room with several others who all knowingly gave wrong answers to a simple vision test. The test subject knowing the correct answer gave the same answer as everyone else. Going with the group as not to stand out, even placing doubt in his own mind that he may be wrong¹⁴. If you found yourself driving down the highway with a posted speed limit of 55 mph and all the vehicles around you were travelling 65 mph, social pressure will most likely lead you to drive with the flow of traffic and violate the speed limit in order to keep up with others. Other social pressure factors could be you as a driver feeling as if you were driving too slow with people tailgating your vehicle. This would cause you to drive faster with traffic even though it is not conforming to the posted speed limit. Likewise, if you were that driver behind a slower vehicle, you would feel the pressure to pass this vehicle in order not to slow down the vehicle behind you.

Then there are those who drive faster than the majority and willfully speed. Questions arise of what causes this behavior, is it the thrill of the speed, a pattern of risky behavior, or are they pressured for time? In either case it may be as simple as having anonymity. While driving along in your vehicle nobody would really know how fast you were going other than whomever you are passing may have an idea. If you have ever driven down the road and noticed one of those electronic signs that says "YOUR SPEED" it will display how fast you were going, it would be easy to see who is speeding. If you are traveling above the posted speed limit it will flash red with the speed you are going. Most of people's reaction is to slow down once one of those signs displays the speed and conformity is gained. It would raise the question, did the person not know how fast they were going, or were they caught? This is remarkably interesting when we discuss what can be done to deter this type of behavior and leads us to discuss what deterrence is effective in reducing incidents of speeding.

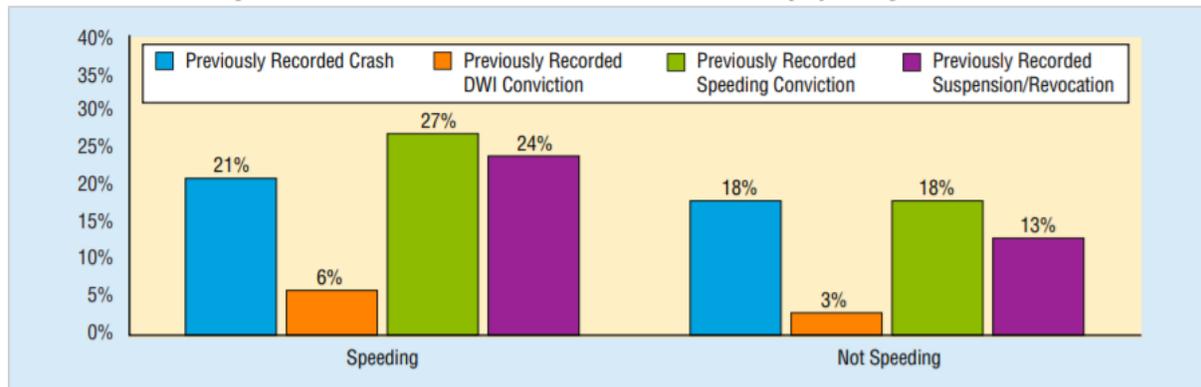
What makes a good deterrence from these types of behaviors is interesting because the current methods may be ineffective. Data from a 2018 Traffic Safety facts report on speeding, the National Highway Transportation Safety Administration shows that 27% of persons involved in fatal traffic crashes (speed was a factor) had previously recorded speeding

¹⁴McKenna, F.P, 2007. *Improving traffic safety culture in the United States*. [online] [The perceived legitimacy of intervention: A key feature for road \(psu.edu\)](#)

conviction, as well 24% previously had license suspension. Compared to 18% involved in fatal crashes (speed was not a factor) had previous speed convictions and 13% had previous license suspensions. (Fig2)

Figure 2

Previous 5-Year Driving Records of Drivers Involved in Fatal Traffic Crashes, by Speeding Involvement, 2018



Source: FARS 2018 ARF

Though many states make their own laws to what a penalty will be for violations, some research suggests the severity of the penalty may not be enough to deter the behavior. Research has pointed that **certainty** of punishment is more important than the **severity** of punishment¹⁵. Eighteenth century criminal law theorists Cesare Beccaria stated the three principals of punishment are swift, certain, and severe. Punishment must be swift to be effective. Punishment is certain when people know they will be punished for their illegal behavior. Punishment must be severe enough to outweigh the rewards of their illegal behavior.

The heart of Beccaria's belief was, "it is better to prevent crimes than to punish them"¹⁶. Swift punishment may be viewed as receiving a ticket for speeding. Though if you want your day in court, it takes weeks, sometimes months to get a court hearing date. This lessens the effect of the relationship to the severity of the crime and the punishment received. Though it is difficult to control the court system we can make efforts in the certainty of enforcing speed regulations. By continuously enforcing speed regulations on a regular basis by effective means, more drivers will know that if they speed, it will almost be certain that they will be detected and stopped. This will act as the deterrence to speeding and prevent crashes associated with speeding. Changing the perception of the violation to speed will take time. Many years ago, the perception of drinking and driving has gone from being a largely acceptable behavior to socially unacceptable. With the same certainty of enforcing the speed regulation, speeding will become a socially unacceptable behavior.

8. Legitimacy

Police legitimacy has been an issue over the past several years. Some question whether law enforcement intentions are to serve the community to reduce harm, or are their ulterior motives? It is hard to deny the fact when police enforce speeding regulations that the perceived violation is to meet a quota, or to reap the benefits financially from the fines assessed. In

¹⁵ McKenna, F.P, 2007. *Improving traffic safety culture in the United States*. [online] [The perceived legitimacy of intervention: A key feature for road \(psu.edu\)](#)

¹⁶ Allen, Francis A.. "Cesare Beccaria". Encyclopedia Britannica, 11 Mar. 2021, <https://www.britannica.com/biography/Cesare-Beccaria>

Pennsylvania this has been addressed in legislation when attempting to authorize local police to use Radar. Limitations on the amount the department benefits from each citation, including a cap on the percentage of citation can be written. Adding a defense to the law where the violator can say they were part of a money-making effort, limiting the use of radar to full time police departments. All these stipulations give a negative perception on police indicating that there will be widespread misuse, and their ability to make an impact on the problem will have no effect. People are willing to defer to authority if they trust their motives. (Tyler 2002) Motive based trust is important in the success of certainty.

9. POLITICS AND LEGISLATION

I began to research this topic in 2019 when I found Senator Scavello (R) introduced Senate Bill 607 (SB607) in the 2019-2020 legislative session. I also discovered that state representative Thomas Mehaffie (R) introduced House Bill 1686 (HB1686) as well. Both were legislation to allow local law enforcement to use radar. SB607 would change the wording in the Pennsylvania vehicle code title 75 under section 3368 speed timing devices, to read any police officer may use radar equipment, rather than just members of the Pennsylvania State Police. This is not the first-time legislation has been introduced.

House Bill 1272 of 2013 when introduced was to amend the current wording in the law Title 75, Section 3368 (D), by removing the words “only by members of the Pennsylvania State Police” and adding the words “by any police officer”. This change would allow any police officer, with the appropriate certification, to utilize radar, to detect the speed of any vehicle. This has been the simple goal and yet the bill could not pass the Transportation Committee. The same measure was introduced again House Bill 71 of 2015. Again, the Bill stalled in Transportation Committee. Legislation saw a change in the 2017-2018 sessions. State House, Representative Readshaw introduced House Bill 43, which was overshadowed by the State Senate when Senator Vulakovitch introduced Senate Bill 251. Senate Bill 251 (SB251) had the same goal of changing the wording in the law and added, “A revenue cap on the amount of a money a municipality may keep from speeding tickets (20% of their municipal budget)”. This is the first time the stipulation of a cap on revenue appeared. This measure passed the Senate and the Senate transportation committee. In the latter part of the Session State Representative Gregg Rothman introduced House Bill 2148 as a supplement to SB 251. This bill alone was very restrictive establishing a 6-year pilot program for an accredited police agency to use radar as a speed timing device. It also only limited full time, full-service police agencies, only accredited police agencies, and provided defense against prosecution if the offender believed that the speeding ticket is used to generate revenue. Again, the legislation stalled and died at the end of the legislative session. (PA General Assembly)

SB 607 appeared promising, though there were other stipulations including required training, the posting of warning signs when entering a local jurisdiction where radar will be used, and local municipalities passing an ordinance. Most of these are common when passing new traffic laws. Also, it is noted in legislation that the primary goal of enforcing speeding is for safety, and if a municipality share of revenue generated from speed enforcement citations exceeds 20% of the total municipal budget, the excess sum shall be remitted to the Department of Revenue. Senate Bill 607 was referred to the Senate Transportation Committee on April 30th,

2019. On June 25th, 2019, the Senate passed SB 607 by a vote of 49 to 1. It was then passed into the House Transportation Committee on June 26th, 2019. On November 18th, 2019 Senate bill 607 was amended by the Committee which resulted in imposed restrictions of use.

1. Revenue generated from speed enforcement citations could not exceed 10% of the total municipal budget. (Not 20%)
2. Adding a defense to prosecution arising from the use of RADAR in a local municipality that the primary use is to generate revenue for that municipality.
3. Requiring full-service Police Department that functions and provides 24 hour per day 365 days a year service, and the police officer must be full time employed, excluding part time or reserve police officers.
4. Provisioning the law under the regulatory review act, meaning the law is temporary for three years pending a review which can be reversed.

I cannot say with certainty why these added regulations would be necessary. They seem counterproductive when attempting to curb a problem that can be addressed, only to speculate that there will be widespread abuse amongst local law enforcement to generate revenue. Transportation Committee Representative Greg Rothman (R) proposed the amended changes though it would most likely be committee members developing stipulations over the current proposed legislation. Pennsylvania has 986 municipal police Departments. Out of the 986 department's, 131 of those departments have no full-time officers, and 420 of the municipal departments do not operate on a full-time basis. (Police Consolidation) This already puts local police at a disadvantage for reducing traffic deaths / speed related crashes. Though the training standard for the part time officer is the same of a full-time officer, this does not make sense. As you can see from Table 6 the data from NHTSA¹⁷ shows Pennsylvania speed related fatalities are occurring on non-Interstate local roadways, where the majority are small, part time Police Departments with part time police officers.

Table 6
Speeding-Related Traffic Fatalities, by State and Roadway Function Class, 2018

State	Total Traffic Fatalities	Speeding-Related Fatalities		Speeding-Related Fatalities by Roadway Function Class						
		Total	Percentage of Total Traffic Fatalities	Interstate Rural	Interstate Urban	Non-Interstate Freeway and Expressway	Non-Interstate Other Principal Arterial	Non-Interstate Minor Arterial	Non-Interstate Collector	Non-Interstate Local
Pennsylvania	1,190	455	38%	23	33	22	89	108	92	88

I contacted the office of state Senator Scavello regarding SB 607. I was put into contact with his legislative director Christine Zubeck. I spoke with Mrs. Zubeck regarding the senator's Legislation. I was curious to see if there was any opposition to the bill or anything that would interfere with its progress. I was advised that even though there is no outward opposition, there are those who would like to impose a "watered-down" version of the bill. Mentioning representative Rothman whose amended legislation placed limitations on the bill. It seems that some constituents feel that the need to regulate reach of law enforcement. SB 607 died in the House Transportation Committee at the end of the legislative session which will move us into

¹⁷Crashstats.nhtsa.dot.gov. 2018 Speeding Fact Sheet. [online] Available at: <<http://file:///C:/Users/User/Downloads/2018%20SPEEDING%20Traffic%20Safety%20Fact%20Sheet.pdf>>

the 2021-2022 session. Though there does not seem to be a clear answer why, there appears to be influence from outside groups.

10. OUTSIDE INFLUENCE

Most outward opponents are members of organizations such as Thomas McCarey of the National Motorist Association. McCarey has repeatedly voiced concerns as a member of the National Motorists Association, “The Legislature has an enormous financial stake in voting in favor of radar for municipal police.”¹⁸ McCarey states that speed limits are set to low and would be better served to follow the 85th percentile speed rule meaning the speed at or below which 85% of the vehicles travel in free-flowing traffic. I was able to find what the 85th percentile rule is from information provided in the National Motorists Association website. The 85th percentile rule is basically monitoring speed along a roadway (average speed with data collection by radar) and setting the speed upon the 85th percentile average of speed vehicles travel in free-flowing traffic. What the website does not tell you that the 85th percentile rule is one of two engineering methods to set speed limits. There are three other methods which can be used to calculate recommending speed limits as well. In a 2012 Federal Highway Safety Administration safety report, the 85th percentile method has other factors involved in deciding what the posted speed limit should be. The report also stated the following: “*The original research between speed and safety which purported that the safest travel speed is the 85th percentile speed is dated research and may not be valid under scrutiny*”.¹⁹

The National Motorist Association has a fact sheet located on their website where it gives information on research findings, which can be presented in a misleading way. For example:

*Q. Isn't slower always safer? A. No, federal and state studies have consistently shown that the drivers most likely to get into accidents in traffic are those traveling significantly below the average speed. According to an Institute of Transportation Engineers Study, those driving 10 mph slower than the prevailing speed are six times as likely to be involved in an accident. That means that if the average speed on an interstate is 70 mph, the person traveling at 60 mph is far more likely to be involved in an accident than someone going 70 or even 80 mph.*²⁰

According to the first section of the answer, yes, many minor traffic accidents that occur are significantly below the average speed which are fender benders and minor accidents which would be considered accidents that are not speed related. The study mentioned driving 10 mph slower than the prevailing speeds are six times likely to be involved in an accident. Driving 10 mph slower than the prevailing speed (or slower than what people are driving) may put that driver in a more likely position to be involved in an accident because the other drivers travelling

¹⁸Goble, K., 2021. *Pennsylvania bill would authorize local speed radar use - Land Line*. [online] Land Line. Available at: <https://landline.media/pennsylvania-bill-would-authorize-local-speed-radar-use/#:~:text=Pennsylvania%20is%20the%20one%20state,are%20allowed%20to%20use%20radar>.

¹⁹ Safety.fhwa.dot.gov. 2012. *Methods and Practices for Setting Speed Limits*. [online] Available at: <https://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa12004/fhwasa12004.pdf>

²⁰ National Motorists Association. 2021. *Speed Limit Studies - National Motorists Association*. [online] Available at: <<https://www.motorists.org/issues/speed-limits/studies>>

10 mph faster would most likely run into that vehicle. What is most interesting is the statement: “That means that if the average speed on an interstate is 70 mph, the person traveling at 60 mph is far more likely to be involved in an accident than someone going 70 or even 80 mph.” So they believe that statement means that travelling at 70 to 80 mph is safer than driving 60 mph. How about my simple analogy. Striking a wall at 80 mph will have more severe consequences than striking a wall at 60 mph. The faster you travel, the less reaction time you have, and the greater distance it will take to stop the vehicle.

It appears that the National Motorists Association has its own interests at hand and not the complete facts. McCarey wrote a letter to the editor of a Warren County newspaper titled “Wrong Direction” March 2021. McCarey was opposing the newest legislation reintroduced in Pennsylvania regarding local law enforcement to use radar. What I found most offensive was McCarey intentionally misused or picked through data to make his own statistic show an extremely low number. His data quote has been questioned multiple times by professionals like myself who utilize and understand how this data is compiled.

“Out of 2,700,000 accidents recorded in 25 states over a year, only 1.6% were caused by drivers who exceeded the posted limit. The figures come from an analysis of annual state reports by the National Highway Transportation Agency (NHTSA).”²¹

I have provided many sources of data and have used NHTSA data extensively. What 25 states? What type of accident records? Exceeded the posted speed limit or speed was a factor? These all lead to question the integrity of what this person says. To paint a bigger picture, men like McCarey, often flood mailboxes, emails, voice messages to many legislators every day. This leads to influence on how a law may or not be passed. In 2018, there were an estimated 6,734,000 police-reported motor vehicle traffic crashes in the United States, resulting in 36,560 fatalities and 2,710,000 people injured. I showed that of the 36,560 fatalities in 2018 there were 9,378 fatalities in crashes where at least one driver was speeding, which is 26% of total traffic fatalities for the year²². Since Mr. McCarey is a Pennsylvania resident, in 2018 there were 128,420 reported crashes. 32,710 of those crashes were speed related, which is 25.4%.²³ I have read other articles where other people make their claim to being members of the National Motorists Association who give their opinion rather than fact why police should not use radar in Pennsylvania.

11. FUTURE LEGISLATION

Mrs. Zubeck advised that Senator Scavello reintroduced legislation to continue what he had started. It was introduced as Senate Bill 419 (SB 419) on March 12th, 2021 and

²¹ McCarey, T., 2021. *Wrong direction (Opinion) Letter to Editor*. [online] timesobserver.com. Available at: <<https://www.timesobserver.com/opinion/letters-to-editor/2021/03/wrong-direction>

²² Crashstats.nhtsa.dot.gov. *2018 Speeding Fact Sheet*. [online] Available at: <<http://file:///C:/Users/User/Downloads/2018%20SPEEDING%20Traffic%20Safety%20Fact%20Sheet.pdf>

²³ Penndot.gov. 2019. *Pennsylvania Crash Facts and Statistics 2018*. [online] Available at: https://www.penndot.gov/TravelInPA/Safety/Documents/2018_CFB_linked.pdf

currently sits idle. This is because Representative Rothman also introduced his legislation House Bill 606 (HB 606). This was introduced on February 24th, 2021. Representative Rothman's Legislation was surprising because it did not have the previous stipulations as he previously introduced. It was more in line with Senator Scavello's original legislation. Most importantly allowing any police officer in the state to utilize the radar, with no limitations on being a full-time police officer, or being a full time Police Department. Rothman's stated "*Since state and municipal police both share powers of arrest, are able to use guns, squad cars and handcuffs, it only makes sense that they ought to be able to enforce speeding the same way, too.*"²⁴ This has placed this Bill in line with previous legislation.

On March 16th, 2021, the house transportation committee unanimously approved HB 606. This is the first time that legislation for local law enforcement to use radar has passed the House Transportation Committee unanimously. There were amendments made to the bill only to enhance other equipment. This would include allowing automated radar equipment to be utilized by a city of first class, which is Philadelphia. The bill would also allow the Pennsylvania State Police to use moving radar. Until now State Police could only use Radar from stationary position. Moving Radar allows the Trooper to be driving along, and there would be Radar antennas mounted to the exterior of the vehicle. The radar could calculate other vehicles speed, while calculating how fast the Trooper's vehicle is moving. This is not new technology and has been used in other states for many years.

HB 606 is currently in the House Appropriations Committee where a fiscal note is prepared to detail the financial impact of the legislation. The Appropriations Committee would also have to be voted on to move the Bill back to the House of representatives for a full house vote. If it passes the House it would move to the Senate floor for vote, where there appears to be total support. Once the senate votes the Bill would be sent to the Governor to be signed into law.

12. LIMITATIONS

Response and communication with staff for Senator and Representatives is challenging. My current position as a police officer can have limitations as well. Law Enforcement has a vested interest in passing of legislation, which may have an impact on communications. Current position of legislation is in the hands of Appropriations Committee. Until the Bill is discussed it is currently in the hold pattern. There is hope if appropriations committee were to have a hearing on the bill, this information can be presented.

Taking into consideration that current public opinion of Law Enforcement may have a negative effect on this legislation. With movements of de-funding and chopping budgets of police departments, Legislators may feel this legislation is not important.

13. RECOMENDATIONS

Keeping data up to date and keeping Legislators aware that speeding is an issue in Pennsylvania. Reminding them that data can be verified by law enforcement partners and that

²⁴ Thompson, C., 2021. *Radar speeding enforcement for local police gets blessing of House Transportation committee.* [online] pennlive. Available at: <<https://www.pennlive.com/news/2021/03/radar-speeding-enforcement-for-local-police-gets-blessing-of-house-transportation-committee.htm>

outside groups with agendas can bend that data. Early data emerging during Pandemic Lockdown is showing that Pennsylvania traffic fatalities are up 6% in 2020, despite a 20% reduction in road traffic²⁵. Nationally, fatal crashes are up 8% in 2020, the number one cause being speed²⁶. Police across the country have reported more incidents of people speeding during the pandemic, clocking cars doing well over 100 mph. This would give attention to the factors as I presented. The certainty of being stopped for the behavior was removed because of the Pandemic. Law enforcement was not out enforcing traffic because there was not much traffic. Now that traffic has slowly picked up again, the speeding has not slowed down. It is more important now than ever to slow the speed down.

High Visibility Engagement is what is known in law enforcement to get motorists the message that law enforcement is watching. (HVE) is designed to change unlawful traffic behaviors and reduce crashes, injuries, and fatalities. It is not a strategy designed to increase arrests, or generate revenue. By allowing all police in Pennsylvania the use of radar, motorists will be able to see that if they are speeding, they will be certainly stopped for the violation. Everyone should agree that the end goal of Radar in Pennsylvania, is that speeding should not cost someone their life.

14. APENDIX

Attached is a current copy of House Bill 606 that sits in the Appropriations Committee.

Rothman, G., 2021. *House Bill 606*. [online] Legis.state.pa.us. Available at: <<https://www.legis.state.pa.us/cfdocs/legis/PN/Public/btCheck.cfm?txtType=PDF&sessYr=2021&sessInd=0&billBody=H&billTyp=B&billNbr=0606&pn=0569>>

²⁵ Blazina, E., 2021. *Pennsylvania traffic deaths up 6% in 2020 despite reduced driving during pandemic*. [online] Pittsburgh Post-Gazette. Available at: <<https://www.postgazette.com/news/transportation/2021/04/20/Pennsylvania-traffic-deaths-hike-reduced-driving-roads-dangerous-pandemic/stories/20210420013>>

²⁶ Usatoday.com. 2021. [online] Available at: <<https://www.usatoday.com/story/money/cars/2021/03/05/pandemic-travel-traffic-deaths-up-8-2020-despite-driving-less/4590942001/>>

THE GENERAL ASSEMBLY OF PENNSYLVANIA

HOUSE BILL

No. 606 Session of
2021

INTRODUCED BY ROTHMAN, SCHLEGEL CULVER, HICKERNELL, SANCHEZ,
STAATS, FREEMAN, SMITH, B. MILLER, MIZGORSKI, MERCURI,
MENTZER, GUENST, CONKLIN, WHEELAND, CAUSER, CIRESI AND
STEPHENS, FEBRUARY 24, 2021

AS AMENDED ON SECOND CONSIDERATION, HOUSE OF REPRESENTATIVES,
MARCH 23, 2021

AN ACT

Amending Title 75 (Vehicles) of the Pennsylvania Consolidated Statutes, in rules of the road in general, further providing for speed timing devices AND FOR PILOT PROGRAM FOR AUTOMATED SPEED ENFORCEMENT SYSTEM ON DESIGNATED HIGHWAY.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Section 3368(c), (d), (e) and (f) of Title 75 of the Pennsylvania Consolidated Statutes are amended and the section is amended by adding subsections to read:

§ 3368. Speed timing devices.

* * *

[(c) Mechanical, electrical and electronic devices authorized.--

(1) Except as otherwise provided in this section, the rate of speed of any vehicle may be timed on any highway by a police officer using a mechanical or electrical speed timing device.

(2) Except as otherwise provided in paragraph (3), electronic devices such as radio-microwave devices, commonly referred to as electronic speed meters or radar, may be used only as part of an automated speed enforcement system or by members of the Pennsylvania State Police.

(3) Electronic devices which calculate speed by measuring elapsed time between measured road surface points by using two sensors and devices which measure and calculate the average speed of a vehicle between any two points may be used by any police officer.

(4) No person may be convicted upon evidence obtained through the use of devices authorized by paragraphs (2) and

(3) unless the speed recorded is six or more miles per hour in excess of the legal speed limit. Furthermore, no person may be convicted upon evidence obtained through the use of devices authorized by paragraph (3) in an area where the legal speed limit is less than 55 miles per hour if the speed recorded is less than ten miles per hour in excess of the legal speed limit. This paragraph shall not apply to evidence obtained through the use of devices authorized by paragraph (2) or (3) within a school zone or an active work zone.

(5) Light detection and ranging devices, commonly referred to as LIDAR, may be used only as part of an automated speed enforcement system or by members of the Pennsylvania State Police.]

(c.1) Speed enforcement devices authorized.--Subject to the restrictions contained in subsection (c.2), the rate of speed of a vehicle may be timed on a highway by:

(1) A member of the Pennsylvania State Police or a local law enforcement officer using a speed enforcement device.

(2) A member of the Pennsylvania State Police using a radar speed-measuring device while in motion.

(3) An automated speed enforcement system using an electronic ranging device.

(4) Any police officer using a speed timing device.

~~(5) A police officer of the Delaware River Port Authority or the Delaware River Joint Toll Bridge Commission on a highway under the jurisdiction of the Delaware River Port Authority or the Delaware River Joint Toll Bridge~~

Commission may use an electronic ranging device from a stationary point upon completion of a training course under subsection (g).

(c.2) Speed enforcement device restrictions.--Speed enforcement devices authorized under subsection (c.1) shall be subject to the following restrictions:

(1) No person may be convicted upon evidence obtained through the use of a speed enforcement device or a speedometer as permitted under subsection (a) unless the speed recorded is six or more miles per hour in excess of the legal speed limit.

(2) No person may be convicted upon evidence obtained through the use of a speed timing device in an area where the legal speed limit is less than 55 miles per hour if the speed recorded is less than 10 miles per hour in excess of the legal speed limit.

(3) Paragraphs (1) and (2) shall not apply to evidence obtained through the use of a speed enforcement device within a school zone or an active work zone.

(4) A speed enforcement device may not be used to time the rate of speed of vehicles within 500 feet after a speed limit sign indicating a decrease of speed. This limitation on the use of a speed enforcement device shall not apply to a speed limit sign indicating a school zone, bridge and elevated structure speed limit, hazardous grade speed limit and work zone speed limit.

(5) An electronic ranging device may only be used by a

local law enforcement officer from a stationary point located within, or directly adjacent to, a clearly marked law enforcement vehicle in a location that is readily visible to the motoring public.

(6) A local law enforcement officer may not use an electronic ranging device unless the individual has completed the required training course under subsection (g).

(7) A local law enforcement officer may not use an electronic ranging device within the boundaries of a municipality that has not installed official traffic-control devices as required under subsection (h).

(8) A local law enforcement officer may not use an electronic ranging device within the boundaries of a municipality that has not adopted a local ordinance as required under subsection (i).

(d) Classification, approval and testing of [mechanical, electrical and electronic] speed enforcement devices.--[The department may, by regulation, classify specific devices as being mechanical, electrical or electronic. All mechanical, electrical or electronic]

(1) Speed enforcement devices shall be of a type approved by the department, which shall appoint stations for calibrating and testing the devices and may prescribe regulations as to the manner in which calibrations and tests shall be made. [The certification and calibration of electronic devices under subsection (c)(3) shall also include the certification and calibration of all equipment, timing

strips and other devices which are actually used with the particular electronic device being certified and calibrated. Electronic devices commonly referred to as electronic speed meters or radar shall have been tested for accuracy within a period of one year prior to the alleged violation. Other devices shall have been tested for accuracy within a period of 60 days prior to the alleged violation.]

(2) Speed enforcement devices shall be calibrated and tested every 365 days at a minimum before being used as authorized by this section.

(3) A certificate from the station showing that the calibration and test were made within the required period and that the device was accurate shall be competent and prima facie evidence of those facts in every proceeding in which a violation of this title is charged.

(4) A certificate of accuracy may be completed, signed and submitted electronically by the certifying technician on a form provided by the department.

(5) The department may promulgate regulations for the certification and the use of speed enforcement devices. In order to facilitate the prompt implementation of this subsection, the department may promulgate temporary regulations, which shall not be subject to:

(i) Sections 201, 202, 203, 204 and 205 of the act of July 31, 1968 (P.L.769, No.240), referred to as the Commonwealth Documents Law.

(ii) Section 204(b) of the act of October 15, 1980

(P.L.950, No.164), known as the Commonwealth Attorneys Act.

(iii) The act of June 25, 1982 (P.L.633, No.181), known as the Regulatory Review Act.

Any temporary regulations adopted under this paragraph shall expire after three years, or upon promulgation of final regulations for this subsection, whichever is sooner.

[e] Distance requirements for use of mechanical, electrical and electronic devices.--Mechanical, electrical or electronic devices may not be used to time the rate of speed of vehicles within 500 feet after a speed limit sign indicating a decrease of speed. This limitation on the use of speed timing devices shall not apply to speed limit signs indicating school zones, bridge and elevated structure speed limits, hazardous grade speed limits and work zone speed limits.

(f) LIDAR testing and calibration.--

(1) The department may, upon publication in the Pennsylvania Bulletin, provide that LIDAR speed measuring devices and LIDAR systems shall be calibrated and tested using the testing procedures in department regulation.

(2) LIDAR speed measuring devices and LIDAR systems shall be calibrated and tested every 365 days at a minimum before being utilized by the Pennsylvania State Police or as part of an automated speed enforcement system.

(3) The certification that the LIDAR device and system, as applicable, have been tested and found to be accurate shall create a presumption that the requirements of this

subsection have been fulfilled.

(4) As used in this subsection, the following words and phrases shall have the meanings given to them in this paragraph unless the context clearly indicates otherwise:

"LIDAR." The technology of measuring target range using reflected light to determine target range and speed from the time-of-flight of laser pulses.

"LIDAR speed-measuring device." Speed-measuring equipment that determines target range and speed based on the time-of-flight of laser light pulses reflected off a target.

"LIDAR system." A LIDAR speed-measuring device that incorporates additional equipment that is used to gather, process and record images, as applicable, to be used as part of speed enforcement efforts.]

(g) Training required.--A local law enforcement officer must complete an electronic ranging device training course approved by the Pennsylvania State Police and the Municipal Police Officer's Education and Training Commission prior to using an electronic ranging device.

(h) Official traffic-control devices.--In accordance with department regulations, not less than four official traffic-control devices, including advanced warning signs indicating the use of electronic ranging devices, shall be erected within 500 feet of the border of a municipality on not less than four highways entering the municipality prior to a local law enforcement officer using an electronic ranging device within the municipality's boundaries.

(i) Local ordinance required.--Prior to the use of an electronic ranging device by a local law enforcement officer in a municipality, the municipality or each municipality of a regional police department must adopt an ordinance authorizing the use of electronic ranging devices within the boundaries of the municipality.

(j) Initial period.--During the initial 90 days of speed enforcement using electronic ranging devices in a municipality by a local law enforcement officer, an individual may only be sanctioned for violations with a written warning.

(k) Revenue limit.--

(1) The municipal share of revenue generated from the use of an electronic ranging device in a calendar year may not exceed 10% of the municipality's budget for that year.

(2) All revenue collected in excess of the limitation in paragraph (1) shall be remitted to the department for deposit in the Motor License Fund.

(l) Primary use.--The primary use of an electronic ranging device by a local law enforcement officer shall be for purposes of traffic safety.

(m) Definitions.--As used in this section, the following words and phrases shall have the meanings given to them in this subsection unless the context clearly indicates otherwise:

"Electronic ranging device." Any of the following:

(1) LIDAR speed-measuring device.

(2) LIDAR system.

(3) RADAR speed-measuring device.

"LIDAR speed-measuring device." Speed-measuring equipment that determines target range and speed based on the time-of-flight of laser light pulses reflected off a target.

"LIDAR system." A LIDAR speed-measuring device other than an automated speed enforcement system that incorporates additional equipment used to gather, process and record images, as applicable, for speed enforcement efforts.

"Local law enforcement officer." An employee of a local police department who is empowered to enforce 18 Pa.C.S. (relating to crimes and offenses) and this title. The term does not include a Pennsylvania State Police officer, constable, sheriff or a deputy, fire police, transit police, airport police, park ranger, university or college police, game warden, fish commission officer or railroad police.

"Local police department." A municipal or regional police department that:

- (1) is authorized by one or more municipalities;
- (2) provides patrol and investigative services; and
- (3) reports its activities monthly to the Pennsylvania State Police in accordance with the Uniform Crime Reporting System.

"RADAR speed-measuring device." Speed-measuring equipment that determines target range and speed based on radio microwaves reflected off a target.

"Speed enforcement device." Any of the following:

- (1) Electronic ranging device.
- (2) Speed timing device.

"Speed timing device." A device or system that calculates speed by measuring elapsed time between measured road surface points by using two sensors or a device, including a stopwatch, that measures and calculates the average speed of a vehicle between two points.

~~Section 2. This act shall take effect in 180 days.~~

SECTION 2. SECTION 3370 (A) (2) OF TITLE 75 IS AMENDED TO READ:

§ 3370. PILOT PROGRAM FOR AUTOMATED SPEED ENFORCEMENT SYSTEM ON DESIGNATED HIGHWAY.

(A) GENERAL RULE.--A PILOT PROGRAM IS ESTABLISHED TO PROVIDE FOR AN AUTOMATED SPEED ENFORCEMENT SYSTEM ON THE DESIGNATED HIGHWAY.

* * *

(2) THIS SECTION SHALL ONLY BE APPLICABLE IN A CITY OF THE FIRST CLASS IN AREAS AGREED UPON BY THE SYSTEM ADMINISTRATOR AND THE SECRETARY OF TRANSPORTATION USING THE AUTOMATED SPEED ENFORCEMENT SYSTEM ON:

(I) U.S. ROUTE 1 (ROOSEVELT BOULEVARD) BETWEEN NINTH STREET AND THE PHILADELPHIA COUNTY LINE SHARED WITH BUCKS COUNTY.

(II) HENRY AVENUE BETWEEN HUNTING PARK AVENUE AND PORT ROYAL AVENUE.

* * *

SECTION 3. THIS ACT SHALL TAKE EFFECT AS FOLLOWS:

- (1) THIS SECTION SHALL TAKE EFFECT IMMEDIATELY.
- (2) THE AMENDMENT OF 75 PA.C.S. § 3370 (A) (2) SHALL TAKE

EFFECT IN 60 DAYS.

(3) THE REMAINDER OF THIS ACT SHALL TAKE EFFECT IN 180
DAYS.