HOUSE OF REPRESENTATIVES COMMONWEALTH OF PENNSYLVANIA


Speed Enforcement Technology * * * * * * * * * *

House Transportation Committee
Capitol Building, East Wing
Room 60
Harrisburg, Pennsylvania
Wednesday, June 24, 2009-9:00 a.m.
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## BEFORE:

Honorable Joseph Markosek, Majority Chairman
Honorable Mike Carroll
Honorable Paul Costa
Honorable Michael Gerber
Honorable Mark Longietti
Honorable Tony Payton
Honorable Joseph Petrarca
Honorable John Sabatina
Honorable John Siptroth
Honorable Tim Solobay
Honorable Kate Harper
Honorable Dick Hess
Honorable David Hickernell
Honorable Mark Keller
Honorable Ron Miller
Honorable Katharine Watson


|  |  | Page 3 |
| :---: | :---: | :---: |
| 1 C O N T E N T S |  |  |
| 2 | WITNESSES | PAGE |
| 3 | Commencement | 4 |
|  | Honorable Joseph Markosek |  |
| 4 |  |  |
| 5 | Major Harvey Cole, Director <br> Bureau of Patrol, Pennsylvania State Police | 5 |
| 6 | Adam Tuton, Senior Vice President American Traffic Solutions | 25 |
| 7 |  |  |
|  | Pennsylvania Department of Transportation |  |
| 8 |  |  |
|  | Scott Christie, P.E., Deputy for | 35 |
| 9 | Highway Administration |  |
|  | Glenn Rowe, P.E., Acting Director, | 38 |
| 10 | Bureau of Highway Safety and Traffic Engineering |  |
| 11 ( 11 |  |  |
| 12 | Testimony Sulomitted for Written Record: |  |
| 13 | Dr. Simon Washington, Professor, Department of Civil and Environmental Engin | ing |
| 14 | Arizona State University |  |
| 15 |  |  |
| 16 |  |  |
| 17 |  |  |
| 18 |  |  |
| 19 |  |  |
| 20 |  |  |
| 21 |  |  |
| 22 |  |  |
| 23 |  |  |
| 24 |  |  |
| 25 |  |  |

CHAIRMAN MARKOSEK: The meeting of the
Transportation Committee will come to order. I'd like to have our guest speaker, Major Harvey Cole lead us in the Pledge of Allegiance.
(The Pledge of Allegiance)
CHAIRMAN MARKOSEK: Okay. Thank you. A little surprise duty there.

We have members that will be joining us as the day goes on. It's a busy day today with a lot of other committee meetings, and a lot of members have other meetings that they're either intending to come later or vice versa. The minority chair, Rick Geist, is I believe going to try to make it here today or this morning so he will be joining us shortly.

We have Representative Ron Miller with us, Representative Mark Keller, Representative Paul Costa, Representative John Sabatina, Representative Dave Hickernell and Representative Siptroth so far with us today. And, of course, I'm Representative Joe Markosek.

Now, with that we'll get started. And we have as our first guest speaker today Major Harvey Cole who's the Director of Bureau of Patrol, Pennsylvania State Police.

Major Cole, if you'd like to take a seat here in front of the mike there, please. There's written testimony in the packets for the members. And, Major Cole, you may proceed when you are ready to do so.

MAJOR COLE: Good morning, everyone. I am Major Harvey Cole, Jr., Director of the Bureau of Patrol for the Pennsylvania State Police. On behalf of Colonel Frank E. Pawlowski, Commissioner of the Pennsylvania State Police, I would like to thank you for the invitation to provide testimony at this hearing concerning automated camera enforcement for speeding violations in work zones.

All traffic enforcement is conducted with the purpose of reducing crashes due to driver error or aggressive driving behaviors. Increased speeds of cars and trucks amplify the severity of crashes when they do occur, and therefore speed enforcement is a priority of the Pennsylvania State Police.

Work zone speed enforcement has specifically become a priority for the department, and new measures were put in place in January of this year to target those behaviors which contribute to crashes, including our unrelenting enforcement of all Vehicle Code laws.

The Pennsylvania State Police are involved with enforcing the Vehicle Code in nearly 200 active work zones. Our policy was changed early this year to target our activities in work zones to focus on only two priorities. The main priority will always be to provide advance notice to oncoming traffic when backlogs occur, which can prevent
the severe crashes that happen when vehicles come quickly upon stopped traffic and are unable to stop in time. When no backlogs exist, our troopers will be conducting enforcement for all violations of the Vehicle Code. This policy is in line with federal rules which were put in place in 2007 for the use of police in work zones as a supplemental safety effort to augment the federally-mandated safety measures required of all work zones.

In 2008 there were 125,712 reportable traffic crashes in Pennsylvania. Of that total, 1422 occurred in work zones, making up roughly 1.13 percent of these reportable crashes. During that same period of time there was 1467 people killed in traffic collisions. Twenty-three persons, 1.56 percent of the total, were killed in work zones at the time of the collision, and two of those killed were construction zone workers. The goal of the state police is to continue to reduce these collisions and deaths through our aggressive enforcement measures.

The proposal to provide automated speed enforcement in work zones across the Commonwealth states the noble purpose of trying to reduce crashes associated with excessive speed. On face value this appears to be in line with law enforcement's goals for crash reduction. However, existing laws would make the use of camera-based enforcement a near impossibility. The use of radar for speed
enforcement is currently limited to use only by the Pennsylvania State Police, and not even local police can use this effective tool in their own speed enforcement efforts. Therefore, any radar-based camera system would only be available to State Police, even though there are work zones throughout the Commonwealth which are being manned by local police for enforcement efforts.

The other type of camera-based enforcement system utilizes time/distance computations to determine a speed of a particular vehicle. The distance between the two points necessary to determine speed must be measured exactly and the equipment used must be approved as a speed timing device by the Pennsylvania Department of Transportation.

Even if these measures were put in place, the resulting photographic evidence would not identify a particular driver of a vehicle, only the vehicle itself through a picture of a registration plate. Current laws require that an officer issuing a citation to a violator must be able to positively identify the defendant in court as the person who was operating the vehicle at the time the violation occurred. The officer becomes a witness for the Commonwealth's prosecution and is subject to cross-examination by the defendant in furtherance of the due process clause of the Constitution's Fourteenth Amendment.

Unfortunately, there are no such safeguards in place when the witness is merely a photograph of a vehicle and identification is made of the defendant through ownership and registration records on file with the Department of Transportation.

Another concern for the State Police is the methods used to actually deploy the cameras. One method is to mount the camera system inside a vehicle and park it along the side of the road to detect speeding vehicles which pass by, either occupied or not. The unintended consequence of this method is that the vehicle being used to deploy the camera becomes a stationary object which could be struck by passing motorists and provides an impediment to the safe flow of traffic.

The same thing is true with cameras which would need to be affixed to a pole or other permanent object. They are another obstacle within the work zone which drivers must negotiate past at highway speeds.

Although State Police marked cars are used currently for detecting violators in work zones, they have the advantage of emergency lighting and a high degree of visibility through reflective markings that other vehicles do not possess, along with a driver at the wheel who has been trained to perform work zone monitoring and evasive driving maneuvers when necessary.

Speed enforcement, while critical to crash
reduction, is only one aspect of the overall enforcement efforts of police. There are many other violations present which can be termed as aggressive driving, as well as persons who are under the influence of alcohol or drugs, and criminals who use the highways of the Commonwealth to further their illegal goals. All of these present dangers to the motoring public, but the unfortunate reality is that enforcement of these other violations is impossible by utilizing camera-based systems.

For example, in a single work zone in York County in April and May of this year, there were 1157 traffic citations issued for various violations of the Vehicle Code. However, there were also 27 DUI arrests made, 20 criminal arrests under our SHIELD program, and 59 motorists assisted which occurred solely within this work zone. None of these arrests or assists would have been possible with camera-based enforcement and the disabled motorists could potentially have created more crashes if a police officer were not present to resolve the situation with expedience by providing traffic control until the vehicle was removed.

Furthermore, if camera enforcement had been present, the drivers who were intoxicated may well have received a citation in the mail but would have continued to drive under the influence. From their perspective, I can
assume that this would not be a bad trade-off, but it certainly does nothing to enhance highway safety from an enforcement perspective.

Although camera-based enforcement currently occurs in the City of Philadelphia for certain intersections with red lights, moving to a statewide solution of speed enforcement using similar methods is quite a leap. The proposal would provide for a fine of $\$ 100$ which is far less than the current fines for speeding in an active work zone which have an automatically doubled fine in place. It also proposes to assess no points to a driver's license record. With reduced fines and no further penalty involving the point system, I question whether any of these citations will have the deterrent effect that a real citation issued by a police officer at the time of the violation has on the motoring public.

Speed enforcement has traditionally been used for the reduction of speed-related crashes, and it should remain so even if this proposal is initiated. Any alteration to that strategy usurps the very purpose of speed enforcement, and the perception of the public becomes such that it is merely a method of collection of funds for the Commonwealth without any real penalty for those who would violate the laws.

In conclusion, on behalf of Colonel Pawlowski
and the entire Pennsylvania state Police, I again want to thank you for the opportunity to address your committee. I will be happy to answer any questions you may have.

CHAIRMAN MARKOSEK: Okay. Major, thank you very much. Before we go to questions, you know, I indicated earlier that some of the best and brightest would be trickling in, and they have.

Representative Kate Harper is here,
Representative Kathy Watson, Representative Dick Hess, Representative Tony Payton and Representative Tim Solobay from Washington County is here.

So any questions? Representative Ron Miller from York County.

REPRESENTATIVE MILLER: Thank you, Mr. Chairman. Major, I'm from York County so this statistic on the work zone violations that were issued in a two-month period, 1157, that's almost 200 a day, is this published somehow that the public knows it? Because one of the complaints that my office gets often is that, you know, people are speeding through work zones and nobody's paying attention, and this certainly indicates otherwise.

MAJOR COLE: Actually, there was some media attention on that. It was reported at least twice. It was two articles in the local paper.

REPRESENTATIVE MILLER: Is this type of data
published for our highway systems on the state Police web site or somewhere?

MAJOR COLE: Not per se as the work zone, but it is as far as the number of citations and type of arrests. Yes, we do have it published.

REPRESENTATIVE MILLER: Thank you. Thank you, Mr. Chairman.

CHAIRMAN MARKOSEK: I had a question myself about lidar. Is that something you're using now or could you give us a little background?

MAJOR COLE: No. We would like to have that tool. No, we are not able to use lidar or moving radar at this time due to legislation or statute. We're not able.

We would like to have stationary radar -- not stationary radar -- lidar and moving radar. It would enhance our enforcement of traffic. And we're one of two states that are not using lidar. The surrounding states are all using lidar and moving radar. So we're kind of lagging in that aspect.

CHAIRMAN MARKOSEK: For the information of the members and perhaps others, could you give us the definition of what lidar actually is.

MAJOR COLE: I'd be more than happy to. Lidar is light detection and ranging. It sends out an infrared laser beam rather than a radio wave. Our stationary radar that we use, we can only use stationary radar, and that is a radio detection and ranging which sends out a radio wave and it sends out -- the beacon that it sends out, it's a cone shape, it's very large and it goes out wide. With the lidar it's very streamlined. It's infrared and it's like a laser. And it's more accurate, a lot more accurate. Well, the radar that we have, it's accurate, but this can now -- you can aim it at the vehicle itself and get a quicker reading, a lot quicker reading than you would have with our systems that we have now because of the funnel that it sends out.

And you might have a few cars that's in that funnel and now the trooper has to determine which vehicle it is. And more or less with the lidar it's a lot more accuracy, a quicker target accuracy. More or less you point it and because of its streamline you point it at the vehicle and you get a quick read, a lot quicker. You can identify the vehicle a lot quicker.

Speed is calculated by the length of time it takes the beam to reflect off the vehicle and return to the unit. A laser beam, like I said, is very narrow. At a thousand feet the laser beam is about 3 to 4 feet wide, and at 500 feet the beam is only 18 inches wide. This allows the officer to easily target a specific vehicle, thus providing a superior target acquisition.

In addition, lidar sends out many laser pulses
in a short amount of time collecting multiple distances. A lidar takes several hundred distance samples in less than a half a second so it's extremely accurate versus -- and the moving radar, moving radar uses the same fundamentals as the Doppler principles that we have presently. Moving radar allows the officer to determine the speed of a vehicle moving toward or away from the police vehicle while the vehicle is in motion. With moving radar the unit factors in the movement of the police vehicle.

I'll give you an example. A police officer driving at 50 miles an hour and the vehicle is moving in front of him pulling away and the radar gun detects the target moving vehicle moving away at 20 miles an hour. Therefore the vehicle is going 70 miles per hour. So as it's moving it can give a read.

CHAIRMAN MARKOSEK: It sounds like to me it's much more accurate. And how would you compare that to speed cameras as technology and which one could do a better job?

MAJOR COLE: Well, what you have here is you have the troopers that are actually there. Okay. The legislation doesn't allow us to enforce the speed camera because we're not present for the speed camera to identify the driver.

And there's where you're going to have the problems versus here. I mean with these enforcement tools,
you're there, you're identifying the driver, issuing the driver a citation, warning or whatever it might be. You're there and you're identifying the driver.

CHAIRMAN MARKOSEK: Representative Paul Costa. REPRESENTATIVE COSTA: Thank you, Mr. Chairman. Major, first of all, thank you for testifying this morning. Radar detectors, would they work on lidars? I know they're illegal.

MAJOR COLE: No. Because of the quick action of the lidar, it's really not going to help them at all. REPRESENTATIVE COSTA: Thank you. CHAIRMAN MARKOSEK: Representative Ron Miller. REPRESENTATIVE MILLER: Mr. Chairman, just a quick clarification. My quick math, I was off by an order of magnitude of 10 . So it's 20 citations per day, not approaching 200.

CHAIRMAN MARKOSEK: Representative Kathy Watson. REPRESENTATIVE WATSON: Thank you, Mr. Chairman. And thank you, Major. You were mentioning with the lidar though and you referred to the fact we are one of two states. The reason for that is simply a lack of legislation that would permit the use? Is it because it would require a budget expense for new equipment or is it because someone has determined and thinks that this isn't a good way to go? Do you have any knowledge as to what the reason
is we are only one of two?

MAJOR COLE: Well, I can say that the moving radar we consider to be radar as though what we have now stationary radar. Lidar is a little different. It is my state police opinion that, you know, a statute, a change of statute would work to allow us to operate moving radar.

And lidar could come under that too. There would be some discussion, but $I$ think lidar also could come under that as a radar to be approved as a speed timing device and we could use it.

I do have some information. Amendments to Title 67, Chapter 105, Pennsylvania Code, those amendments would authorize the State Police to use both lidar and moving radar. As it currently stands, the State Police cannot use lidar and moving radar absent action by the General Assembly and the Department of Transportation.

I hope that answers your question.

REPRESENTATIVE WATSON: Yes. And a follow-up then might be, am I correct though there are times where because of topography radar, as you would use it, really doesn't work? Would it be that it would be better to have a combination of tools available, lidar versus radar?

And, of course, I might add that if the locals had the opportunity for radar, they might solve some of your problems before people got to the interstates.

MAJOR COLE: And we do -- the State Police do support the local departments using radar -- to use radar. Twofold, with the -- right now with the radar that we have, it has to be stationary so the trooper has to sit at a location effectively to run radar. With moving radar, you know, the trooper can be moving, doing two things, actually patrolling and actually monitoring the speed of traffic. So, you know, we're getting two jobs done versus one. We're doing the traffic enforcement plus the trooper is out there doing patrol, he's monitoring -- and monitoring traffic.

With the lidar still, you know, has quick acquisition with the target so we really could use these tools. It would enhance us. And we are lagging when it comes to traffic enforcement with radar versus the other states.

REPRESENTATIVE WATSON: And my final question then, what I'm hearing from your answer, am I correct, that another benefit might be that, whereas, you have to then take a trooper from the complement and his job is to sit there stationary to do this, he in effect -- and therefore you have one less on the road?

You're saying with the new technology you're on the road, in other words, doing two jobs for one. So I'm guessing if I'm shorthanded or if I have a lighter complement, it's more useful because you can do two things
at once.

MAJOR COLE: Well worded. Very helpful.
REPRESENTATIVE WATSON: All right. Thank you. Thank you, Mr. Chairman.

CHAIRMAN MARKOSEK: You're welcome. Representative Paul Costa.

REPRESENTATIVE COSTA: Thank you. Major, again, is it possible for some of the members to come and see the comparison between the radar and lidar?

MAJOR COLE: Yes.

REPRESENTATIVE COSTA: And see the difference between the two?

MAJOR COLE: Sure. A demonstration was done some time ago. We would be more than happy to provide a demonstration at a certain time period, demonstrate the lidar and moving radar.

REPRESENTATIVE COSTA: After that can you give me one of those red and blue lights? Thank you.

CHAIRMAN MARKOSEK: Representative Geist's analyst Greg Grasa has a question.

MR. GRASA: Thank you, Major, for coming. I understand you're the main man when it comes to speed enforcement in the Commonwealth. So since you're here, I just want you to reassure me.

I travel a considerable distance every day for
ten years, and antidotally I've observed that the motoring public has become a little more aggressive in that time and maybe a little more cavalier about their obeying the speed limit or not obeying the speed limit.

Do you feel right now that the state police has a handle on this and is it an increasing problem and do you feel the state police patrol has a handle on it?

MAJOR COLE: Well, $I$ think it is an increasing problem. I think the volume of traffic now, when you look at ten years ago and you look at now, you know, the amount of vehicles that are on the road versus back ten years, and it continues to increase. You know, at one time it was like, you know, a family was just a one-car family, and now just about everybody that has a driver's license has a car.

But, you know, it has increased in volume. And now the state police -- not only are people driving at high speeds or speeding, now we're really looking at aggressive drivers. There's a lot of violations of aggressive driving that contribute to accidents, you know, improper lane changing, people don't have time, they got to get there, get there, and those type of violations, and we're really taking enforcement action in aggressive driving.

So I think we do have a handle on it. It looks very good. Our stats as far as reduction of traffic accidents, last year for 2007 we showed a decrease. I don't
have the number, but we showed a decrease in traffic accidents, fatal accidents. So everything as far as our enforcement it seems to be we're getting good results. And obviously we want to continue that. And if we have these extra tools, $I$ think that that would only enhance it.

MR. GRASA: But you don't see any manpower problems as far as patrolling our highways?

MAJOR COLE: We always like to have more manpower. But again, sir, you know, we are handling the situation. And you can see by our results, you know, as far as the reduction in the traffic accidents that we have -- you know, we are getting the job done. But obviously we would love to have more manpower.

MR. GRASA: What's your perspective on creating the highway patrol again? At one time Pennsylvania had a highway patrol that was exclusively devoted to that task. MAJOR COLE: I think where we're at is fine in how we're doing business. When you look at the turnpike, I mean you can kind of say that the turnpike, that is more or less structured as a highway patrol because generally it's all patrol, it's all traffic enforcement for the most part, and it works well there. But in the counties obviously we do a lot of criminal investigations and things like that so we wouldn't be able to do that. But we do have a lot of details and the majority of them are federally funded that
we do specifically traffic enforcement.
MR. GRASA: Thanks.
CHAIRMAN MARKOSEK: Just a reminder to the
guests. If they could please put their cell phones on
vibrate, that would help.
Representative Tony Payton.
REPRESENTATIVE PAYTON: Thank you, Mr. Chairman.
Thank you, Major, for your testimony. I believe that you
guys are doing well on the turnpike. From my perspective at
least, from Valley Forge to Harrisburg the last couple of
months I've been cited about three times. I'm working on my
speed control.
In your opinion you said that camera enforcement
of speed in the work zones would be impossible to enforce?
MAJOR COLE: It would be impossible for us to
enforce and use it as an enforcement tool. Okay? I think,
you know, even just the mere sign of putting that this area
is enforced by camera is going to slow a majority of the
people down. Okay. But I think, you know, what we have in
place, I think it gets the job done, slows traffic down and
we're taking the right measures.
Camera enforcement is not going to get that DUI,
that person that's driving DUI or recklessly. All it's
going to pick up is that person that's speeding. And so
what do we solve, the message we've gotten to them -- and we
can't enforce it at this point. So, you know, the way legislation is, if there's a change in legislation, we could, and we could use this as an added tool and we would use it. But as it stands now we just can't use it.

REPRESENTATIVE PAYTON: Wouldn't necessarily make the roads safer by virtue of not catching those folks who are recklessly driving?

MAJOR COLE: Yes.

REPRESENTATIVE PAYTON: Now, I do see a sign
that speed is enforced by aircraft?
MAJOR COLE: Yes.
REPRESENTATIVE PAYTON: Is that right?
MAJOR COLE: Yes.
REPRESENTATIVE PAYTON: Thank you.
CHAIRMAN MARKOSEK: Representatives Mike Gerber and Mike Carroll have arrived, as well as Representative Longietti. And Representative John Siptroth has a question. REPRESENTATIVE SIPTROTH: Thank you very much, Mr. Chairman. And thank you for your testimony.

Do you have any idea what the cost would be for utilization of cameras in work zones on an individual basis or across the construction season? Would it require a change in the uniform traffic control devices that we now use in Pennsylvania for setting up traffic patterns for construction?

And the second question, from what I'm gathering from your testimony you're not a big fan of this proposal.

MAJOR COLE: I haven't done any research on the cost. And $I$ guess you might say I'm not so much a big fan at this point. I would -- you know, we would gladly, PSP, accept this if legislation would provide the PSP the vehicle to use it as an enforcement tool, okay, that it would be accredited as a speed timing device, which it is not. We'd have to get those measures in place and we could use it. And it would be a tool.

We would supplement our enforcement efforts with this. We could use it in school zones, construction zones. We could use it to supplement, but, you know, what we have in place now $I$ think is very effective.

I just wanted to share something with you as far as stats from January -- for the year of 2008, we're talking about manpower -- in the year of 2008 in the construction zones itself we issued 8,867 citations, 7,359 warnings. We arrested 105 DUI, driving under the influence. We dedicated 85,320 hours to construction zones.

And from January to May 31st of this year we've issued 4,051 citations, 1,989 warnings, arrested 51 DUI operators and we've mandated 19,290 man hours.

REPRESENTATIVE SIPTROTH: I thank you for those statistics. I find enormous value in you being present in
the work zones.

And one other question, Mr. Chairman. Unfortunately, I have to leave. Maybe someone can ask this of PennDOT. I have a real problem with the light that indicates when a work zone is an active work zone and so many times that is left flashing and it slows the traffic pattern down.

And I think that's an issue we should really take up with PennDOT and some means should be in place in the contracts, if they're awarded a contract that somebody is responsible for activating and deactivating those lights when construction workers are present. I think there should be some sort of penalty that we impose on those particular contractors that are not activating and deactivating the lights at the appropriate times. Thank you very much.

CHAIRMAN MARKOSEK: Okay. Thank you. We'll have PennDOT address that.

Okay. Seeing no other questions, Major, a very good job.

MAJOR COLE: Thank you very much.
CHAIRMAN MARKOSEK: Thank you for your testimony. It's great information and we appreciate you coming by.

Our next folks to testify, we'll hear from Mr. Adam Tuton, Senior Vice President, American Traffic

Solutions. Mr. Tuton. He's sitting over here because of the display. So, Mr. Tuton, when you're ready, you may proceed.

MR. TUTON: Mr. Chairman and members, thank you for the opportunity to present in front of you again.

Clearly we're all talking about giving State Police access to tools that would make their job easier. Clearly there are issues that need to be addressed in terms of legislation, but what $I$ thought I'd do is walk you through some of the experience in other areas of the country, some of the technology and a case study from another city.

Speed is something that kills obviously. The faster you drive, the harder you hit, the more damage to you, the more people get killed. And speed is a main factor. Thirty-one percent of all fatal crashes in the U.S., about a thousand people are dying every month in the U.S. from traffic collisions.

It's also very possible it costs over $\$ 40$ billion in unintended consequences from loss of productivity, in addition to fire rescue, all the emergency services, plus the insurance costs. So it's a big issue nationwide, and many more cities already use red light cameras around the country and are implementing the speed enforcement as well in work zones.

In Illinois they have a speed zone -- work zone speed enforcement program, and this just shows the average miles per hour vehicles over the speed limit when there's no enforcement versus electronic sign versus police cars versus all the speed enforcement. And this is the University of Illinois. It shows --

CHAIRMAN MARKOSEK: Excuse me. I don't know that the folks can hear. You need to pull the mike a little closer. Okay.

MR. TUTON: The speed enforcement, the automated enforcement device is the most effective of all the other deterrents.

We don't -- we do not advocate to replace police officers with any type of automated enforcement. That's never been the case. This is a tool and any tool is used with other tools to give them the maximum results. The system of automated enforcement has never replaced an officer. They do an important job and they do a very important job with regard to a DUI and drug enforcement and other things that they are so well trained to do.

In Scottsdale, Arizona, on the 101 Freeway there was a pilot project that lasted for nine months that showed on the freeway at six locations in the pilot project a very significant reduction in collisions of 54 percent. Property damage and injury crashes were reduced by 56 percent. And
all types of crashes were reduced. This graphic really shows on a time line exactly what happened during that pilot program.

As you can see, there was a warning period from January to March of 2006 and the violation rates were low while the cameras were operational. Then there was the full enforcement program for a year, and you can see the violation rates were low. When they turned the cameras off and covered them up, you can see that the violation rates of people speeding at 76 miles or greater rose by 1047 percent. Then when they turned the camera systems back on you can see that compliance was immediately returned to the previous levels.

It is this kind of ever-present awareness that there is speed enforcement in addition to a very active public awareness campaign in which the public was very much forewarned by signage and public awareness in the media that this program had such a success.

In Seattle a recent public opinion poll done by the city in support of different types of speed enforcement in different areas, including school zones, construction zones, busy arterial streets and major intersections, showed a very high level of support for speed enforcement and it ranges here from 74 to 85 percent.

The Insurance Institute for Highway Safety has
done public opinion results, and they testified here as well just as recently as last year, they did opinion polls for speed enforcement in Montgomery County, Maryland, and Scottsdale, Arizona. You can see the results of favorability in terms of speed enforcement ranging from 62 to 77 percent. So there's high awareness of speed cameras and it's high awareness of speed problems, and targeting roads has a high support for the usage.

This next slide shows a map of the United States and they have the cities and states listed with pointers to show where speed enforcement is being used. Whereas red light cameras are used in 26 states in the country and over 400 cities, there are over 40 -- 45 cities in the U.S. now and four states that are using some method of speed enforcement, whether it be fixed enforcement on neighborhood streets, school zones, construction zones or statewide. Washington State DOT has a statewide construction zone speed enforcement program, as does Illinois, and Arizona has a statewide program.

Whereas, the issue of the type of technology can be debated, there are many types of speed enforcement technologies. There are radar. There are lidar. There are fixed site using time over distance sensors. The issue really is you fit the technology to the particular situation.

Many of the issues brought up by the Pennsylvania State Police can be addressed, but we agree that the legislation is needed.

This is a picture of what a fixed-site speed camera looks like. It looks just like a regular camera that's on a pole. You also can have a low-speed camera that's in a van or in a police car or in a movable trailer like a speed enforcement trailer that you already use. So there are various different types of deployments that can be implemented very effectively.

This is a sample image of a vehicle. In 23 of 26 states the violation is taken from the back of the vehicle and not of the driver. This addresses privacy concerns that come up. But it is also shown that speed enforcement against the registered owner is every bit as effective as those that take pictures of the drivers and issue points.

This is another image. This is one of the license plate.

Now I wanted to walk through an example of case studies from a city called Mesa, Arizona, which is one of our clients. This is at Rhodes Junior High School. This was a scene of a fatal pedestrian collision. A child was hit right in front of the high school. And for several years they attempted to implement signage changes, flashing
light changes, other sorts of treatments. Eventually they moved towards a photo enforcement system.

This is a very high-volume, six-lane road with a raised median. It has a very high traffic count on a daily basis. It also has an automated flashing light system that changes the speed limit from 35 miles an hour to 45 miles an hour. So from 7:30 a.m. to 4:30 on school days the lights are all flashing the speed limit is 35. All other times it goes to 45 miles.

At the initial benchmark in October of 2005, the average speed of vehicles was 46.6. After the implementation of photo enforcement as of September of '08, the speed of all vehicles in the school zone dropped 10 miles an hour, which is a phenomenal amount, 21 percent, and there have been no fatalities and no collisions since then.

This chart shows types of things they did in advance of implementing photo enforcement. It includes static signs, much more intense manual police enforcement, driver speed feedback signs, yellow flashing lights, and then ultimately they added photo enforcement, and you can see the drop in the speed most dramatically as shown here.

So the net effect is you can drop the speed as dramatically as is shown here. A typical Chevy Tahoe would stop 61 feet sooner or 3.6 car lengths. That's enough to save the person's life that they may hit. So overall driver
behavior changes were significant, and there have been no speed-related collisions to date in the school zone.

Finally, this shows the violation counts which started very high. The yellow bars are in school zone time and the blue bars are the non-school time. It shows a marked decrease. And this graphic is very much similar to the violation rates that you saw in the Philadelphia light program.

I'd be happy to take any questions that the members may have.

CHAIRMAN MARKOSEK: Thank you. Representative Costa.

REPRESENTATIVE COSTA: Thank you, Mr. Chairman. Thank you for testifying. On your Scottsdale example, you put the cameras on and speeding went down. You took them away, speeding went up. You put the cameras back up, speeding went down. Wouldn't it be a lot more cheaper for the Commonwealth to put blank cameras up?

MR. TUTON: Just dummy cameras you mean?
REPRESENTATIVE COSTA: Yes.
MR. TUTON: Well, the answer is no. You could do some dummy cameras.

And that's with a sign. With the signage alone, you're only going to get a limited effect for a very limited period of time. When people know there's no enforcement to back it
up, the threat of enforcement, their behaviors will not change for the duration.

REPRESENTATIVE COSTA: But according to the study are you telling me there was enforcement for the extended periods?

MR. TUTON: Yes, there was enforcement. During the warning period there was warning letters for a month or two, and then during the enforcement period there was real live enforcement. Then they completely shut the program down, covered the cameras and let people know there was no more enforcement. And then they uncovered them and started --

REPRESENTATIVE COSTA: I wasn't aware of that. Thank you very much.

CHAIRMAN MARKOSEK: Okay. Representative Tim Solobay.

REPRESENTATIVE SOLOBAY: Thank you, Mr. Chairman.

The question about the red light intersection cameras, the safety concerns, there's an individual that many of us get e-mails from on a regular basis, very opposed to the -- that is very opposed to the intersection cameras. And my question is the statistical data that you get, does this show that those are very effective in what they do and pretty much downplays a lot of the criticism that's received
about those?

MR. TUTON: Yes. There is a vocal minority out there, but in reality there are 400 -plus cities in the U.S. that use red light cameras and speed cameras and to a great, great success. The number is very reduced collisions and the total number of violations are greatly reduced with the use of these cameras.

And the evidence is right here in the Philadelphia program which has not only had in the first days of their program a 96 percent reduction in violations but also a significant reduction in collisions and injuries. The evidence is that they do work.

REPRESENTATIVE SOLOBAY: Thank you.
CHAIRMAN MARKOSEK: Representative Mark Longietti.

REPRESENTATIVE LONGIETTI: Thank you, Mr. Chairman. A question on the enforcement side. My district is right on the border with Ohio. And one of the municipalities in Ohio got red light cameras and began to fine drivers for violations. Eventually that was challenged and they stepped away from doing that program.

I'm just curious if you have any light to shed on the fact that, as $I$ understand it, the driver does not get identified. Are there enforcement issues that you have seen because of the fact that the driver is not identified?

MR. TUTON: In states where there's the right legislative treatment, these issues are dealt with. Again, in 23 of the 26 states the legislation implemented at either a local or a state level makes the violation the owner liability violation. And so to the extent that the statute is in place and makes it very clear on what remedies there are in terms of processing those violations, it's very straightforward and streamlined.

In some states even those that are registered owner violations there is an opportunity to nominate a driver or another person as the driver and to transfer the liability. And you can certainly do that in this situation. It all depends on what the Legislature decides to do with its legislation.

REPRESENTATIVE LONGIETTI: From your experience then the states where it has worked, is it because it's in the nature of this is a civil penalty fine, no points are assessed, it's not a criminal type offense even though it might be a low-level summary offense? Is that how it works?

MR. TUTON: That's the majority of the states and that's, you know, in our experience the best states are where it's a registered owner violation, not a driver violation and it is a civil penalty.

REPRESENTATIVE LONGIETTI: Thank you.
CHAIRMAN MARKOSEK: Any other questions? Adam,
thank you.

MR. TUTON: Thank you very much.
CHAIRMAN MARKOSEK: We appreciate it very much. It's good information.

Next we have PennDOT. Scott Christie, who's the Deputy Secretary for Highway Administration, a new job for him, a former district engineer here in the local area, and Glenn Rowe who's the Acting Director, Bureau of Highway Safety and Traffic Engineering.

While they're getting ready, I just want the members to know that we do have testimony submitted by Dr. Simon Washington, Professor, Department of Civil and Environment Engineering, Arizona State University. He couldn't make it here today so he did submit testimony.

So with that, Gentlemen, you may proceed when you're ready.

MR. CHRISTIE: Thank you, Mr. Chairman. And thank you, other members of the committee as well.

The Department of Transportation was asked to provide testimony to the House Transportation Committee regarding automated speed enforcement technology. We were asked specifically to comment on how current Pennsylvania laws treat speeding in work zones and school zones, provide some available statistics regarding the number of citations issued and fatalities related to speeding violations in
these zones, and to comment on automated speed technology legislation such as what was enacted in the state of Maryland.

I'll provide a bit of background and some summary of current laws, and then I'll turn it over to Glenn to go over some of our crash statistics and the other state legislation.

As a bit of background, in Pennsylvania the full automated speed enforcement without the presence of an officer is not allowed by current law and would require legislation. That was discussed by the Pennsylvania State Police. The only related exception right now for fully automated enforcement is in Title 753115 which is the automated red light enforcement for first class cities.

Also, there is in Title 748117 where the Turnpike Commission is authorized to utilize automated process to detect violations of its toll collection system. And this is a civil process. It's not really a citation but provides for collection of tolls and administrative fees.

PennDOT does utilize State Police enforcement assistance on select work zone projects as part of a MOU or memorandum of understanding between the agencies. And the primary purpose, as discussed by the State Police, is to warn those motorists approaching a work zone to slow down and prevent potential work zone-related crashes, especially
when traffic queues are involved because those are some of the more deadly crashes that do occur.

In 2008 PennDOT expended $\$ 7.3$ million for this assistance on construction and maintenance projects, and during those efforts over 8800 citations and 7300 warnings were issued. And there were 105 DUI arrests as part of this work zone assistance as well. And funding for this, for your information, does come from the individual construction projects, or, in the case of a maintenance project, it comes from our maintenance fund.

But I do have a -- for those that are interested, I do have a breakdown of the money. Of the 7.3 million, 700,000 was from the maintenance funds and about 6.6 million were from the construction funds. And if you're looking at the construction funds, the maintenance funds, the breakdown of federal and state would be about 5.3 million would be federal dollars and about 2 million state dollars.

Related to the current laws, there are several current laws in Title 75 dealing with the speeding in work zones and school zones as follows: Section 1535 is the schedule of the convictions and points, including school zones and work zones. Section 3326 is where you have the double fines in the work zones and in highway safety corridors. Section 3365 is the special speed limitations
that include the school zones and the active work zones. And Section 3368 is where the speed timing devices would be utilized.

And I'll turn it over to Glenn to go over the crash statistics and the other ones.

MR. ROWE: Thank you, Deputy Secretary Christie. I'll be sharing some facts and some of the numbers here on crashes. And some of it will be redundant, but it reinforces the previous two presentations.

In 2008 we have 25,000 -- a little over 25,000 injuries and unfortunately 1,468 people lost their lives on highways in Pennsylvania in that year. Out of the work zones, 1,422 crashes, 23 fatalities, as the Major reported. In school zones to the best of our knowledge, and this is based on the records that are submitted by the police who report these, 230 crashes in school zones, and 1 fatality. And that's when the school zone is activated.

We did find some records that showed that there were school zone crashes on Saturdays and Sundays, which I think is incorrect, and we subtracted those out. So that's why I say to the best of our knowledge this is what we have for school zones.

When we look at speed-related crashes, there's actually two types of violations. One is driving too fast for conditions and the other is speeding. Driving too fast for conditions, 18 percent of the crashes, 20 percent of the fatalities in 2008; and speeding consisted of 2 percent of the crashes and 12 percent of the fatalities.

In work zones in 2008, driving too fast for conditions was a prime factor for 23 percent of the crashes, 17 percent of the fatalities; and speeding was a prime factor for 1 percent of the crashes and none of the fatalities.

For school zones in 2008, driving too fast for conditions was the contributing factor for 11 percent of the crashes and none of the fatalities. Speeding was a prime factor for 2 percent of the crashes and the only fatality on record that occurred in a school zone.

The Chairman asked us to look at other states and also Maryland legislation. What we found, and this was consistent with what Mr. Tuton presented, was the vast majority of speed enforcement it's really locally based across the country. A few states do have a statewide law. So it's community-based and most of it is red light running enforcement.

According to the Institute of Highway Safety, in May 2009, 428 local communities had a red light camera program. Forty-nine local communities had a speed camera program. As you heard, Arizona also used speed cameras on all their state roads. Illinois, Oregon and Washington use
speed cameras in work zones, and I understand Illinois and Oregon also have a caveat in their law that requires a uniformed officer to be present in the work zone.

Maryland does have an existing law, and it is geared primarily towards residential streets with speed limits 35 mile per hour or less and school zones.

We did take a look at Maryland's legislation which will go into effect October 1st, 2009, and this authorizes speed monitoring in school zones and work zones across the state. Local jurisdictions, right now I understand it's exclusive to a couple counties, but it's going to allow any of the counties to approve speed cameras if they authorize the law.

In work zones speed cameras may be placed along expressways with controlled access where there's speed limits greater than 45 miles per hour. They cannot use speed cameras in major bridges or tunnels. A citation would only be issued if the driver is exceeding the speed limit by more than 12 miles per hour. They must have conspicuous signing to give advance notice to the drivers.

And upon implementation of the program, as you heard in the previous presentations, they normally have a window of warnings and they would have to have a $30-\mathrm{day}$ window. Fines cannot exceed $\$ 40$, and that would be set by the district court.

So with that $I$ will turn it back to the Deputy Secretary to give final comments on speed enforcement.

MR. CHRISTIE: Thanks, Glenn. What I guess I'm going to call this is the three C's, comments, considerations and challenges as we're going forward.

First, related to the automated speed enforcement, there are studies on speed enforcement such as by the Insurance Institute for Highway Safety that does document the effectiveness of speed cameras in reducing highway speeds and crashes. And there's a lot of it, but we cited some examples such as there's a June 2004 evaluation of the United Kingdom's extensive speed camera network which showed that the number of vehicles exceeding the speed limit dropped 71 percent at fixed camera sites and 24 percent at mobile camera sites. And speeding 15 miles per hour or more above the limit fell 80 percent at the fixed sites and 28 percent at mobile sites.

There's also a 2006 Cochrane Collaboration, which is an international organization, where they -- their review is referenced in the Insurance Institute for Highway Safety document that states that data from 21 studies found crash reductions ranging from 14 to 72 percent for all crashes and 40 to 45 percent for crashes involving fatalities and serious injuries at the sites where they were using the automated speed enforcement.

And there obviously have been documented benefits to using this technology, but there are also some challenges and issues as we look to do any kind of implementation.

First, what was mentioned by the State Police is that there are various legal restrictions, including constitutional, legislation and evidentiary issues that have to be resolved. There's also the perceived lack of fairness that was discussed that the vehicle owner is identified but not the driver; also, that the perception that these automated systems are just being used to generate revenue rather than to improve safety. So it's critical that speed cameras be used to deter unsafe speed in high-risk environments where there are crashes and consequences of an increased fatality occurring.

The speed cameras do have to be accurate. There will have to be processes in place to ensure that the equipment and the issued citations are accurate and that we don't undermine public confidence.

Speed cameras really -- it was commented by the State Police, the speed cameras really shouldn't be substituted for human enforcement because there are a lot of other violations like aggressive driving behaviors, DUIs, drugs and other violations, while speed cameras are only able to look at the speed itself.

There are some additional concerns related to school zones. First, the school zones are not consistent across the country. Driver compliance with a 15-mile-per-hour speed limit in a school zone is challenging and is low. Speed limits in school zones vary by time of day, by day of the week, and by the holidays, so that's also a challenge. School speed limits can be posted on static signs or flashing warning signs, and when it's posted on static signs it's a challenge for the driver to understand whether you're within the operational hours of the speed limit.

And now all -- currently not all school zone speed limits meet the requirement that some students walk to school. Some schools have made a decision to bus all the students which then would void the justification for an existing school zone speed limit.

There are some other considerations that I'd like to close with. One is that -- I think it was mentioned by the State Police as well, that the legislation should really only authorize the use of the technology and not mandate it. It would make it a tool for the State Police. Hopefully the legislation would tie into applicable Title 75 laws regarding the citations. One area would be what would be the tolerance that the technology would be using. For example, 10 miles or 12 miles over the speed limit.

The speed camera owner or the administrator would have to be identified. There's also a lot of vendors that might be qualified to provide the technology and the Commonwealth procurement process would have to comply with that.

We would look at the revenues collected should be used to support the operations of these systems. There would have to be a systematic -- in our opinion, systematic process for site selection to be developed so we don't make an arbitrary, capricious decision just to put it at any given location. The location should be targeted where there's a safety concern. And at selected sites the posted speed limit would need to be verified for compliance with traffic engineering principles and standards or it wouldn't be valid.

And, in conclusion, as everyone knows, the implementation of any new initiative requires funding and it requires resources. And you well know PennDOT currently is focused very heavily on maintaining the roads and bridges right now, and we would be concerned with any redirection of resources for the department if we were looking to implement any kind of new technology.

And thank you for the opportunity, and we'd be happy to answer any questions.

CHAIRMAN MARKOSEK: Okay. Thank you. I have
two quick questions, and $I$ know Representative Carroll has a question.

First of all, I guess the first one would be for you, Mr. Christie, the second one for Mr. Rowe. Representative Siptroth had asked a question about numerous complaints or whatever about shutting off the work zone lights and construction in progress kind of lights that many of us run across.

And then the other question I have for Mr. Rowe. You mentioned the tallies in work zones being 23 last year. Were they the workers or do you know how many of those were workers and how many of those were the drivers or passengers traveling through the work zones?

Maybe Mr. Christie could answer that first.
MR. CHRISTIE: Sure. With regard to the lights, the activated lights, that is an issue that as the district executive of District 8 your concern with that it is appropriately activated and deactivated in work zones. That's actually targeted with our construction inspection crews to make sure that they go out and work diligently with the contractor to make sure they do that appropriately.

We will go back out statewide and make sure that that's highlighted and duly noted, those comments that it isn't being done appropriately, and we'll make sure that happens.

CHAIRMAN MARKOSEK: Thank you. Mr. Rowe.
MR. ROWE: I don't have that statistic on hand, but I think the Major did comment about 3 were workers. I think that was in his testimony looking back right now.

CHAIRMAN MARKOSEK: So the majority of those 23 were drivers and passengers moving through there and having accidents in the construction zones?

MR. ROWE: Typically, yes.
CHAIRMAN MARKOSEK: Representative Mike Carroll. REPRESENTATIVE CARROLL: Thank you, Mr. Chairman.

The City of Philadelphia is really the only jurisdiction in the state that has the red light cameras. Could you walk through for me, one of you, what the process is from the taking of the picture to the notification of the defendant, to the Philadelphia Traffic Court's disposition -- I assume that's where it goes -- and then notification by the traffic court to the Commonwealth, if there even is any. Can you walk me through that process?

CHAIRMAN MARKOSEK: Actually, I think that might be a better question for the previous --

MR. CHRISTIE: Yeah. We can work with the State Police to get that.

REPRESENTATIVE CARROLL: Let me ask the question differently. Does the Commonwealth even get notified of the

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    disposition of the citation with traffic court? Does
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    PennDOT even get a notification?
    MR. CHRISTIE: No. It turns out to basically be a fine, and it's issued to the driver or the owner of the vehicle. I do know that the City of Philadelphia does have a third party who basically operates the cameras for them, does the processing and sends out the citations.

REPRESENTATIVE CARROLL: So you don't know if there's interaction between Philadelphia and the Commonwealth and PennDOT?

MR. CHRISTIE: Our interaction is that they do provide us statistics because we are interested in seeing how effective the cameras are.

REPRESENTATIVE CARROLL: And that's something that's similar with the Turnpike Commission and PennDOT with respect to the toll booths?

MR. CHRISTIE: That's correct.

REPRESENTATIVE CARROLL: Okay. Thank you.
CHAIRMAN MARKOSEK: Okay. Anything else? Does the staff have any questions? Okay.

Gentlemen, thank you very much. It was very good testimony. We learned a lot from you that we have to digest. We appreciate all the testifiers very much. Thank you very much.

Just for the members, there will be no

|  | Page 48 |
| :---: | :---: |
| 1 | additional meetings this week. We had sent an e-mail out |
| 2 | about a potential meeting to occur. But $I$ want to thank |
| 3 | everybody, and the meeting is adjourned. Thank you. |
| 4 | (Whereupon, the hearing was concluded at 10:50 |
| 5 | a.m.) |
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