National Motorists Association
THE VOICE OF REASON FOR DRIVING FREEDOM

**Written Testimony of Jay Beeber**
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**Pennsylvania Local Government Commission**
**Public Hearing on Automated Enforcement Programs in Pennsylvania**

**May 12, 2025**

Chair Hutchinson, First-Vice Chair Freeman, and members of the Local Government Commission, my name is Jay Beeber, and I am the Executive Director of the National Motorists Association (NMA). On behalf of the over 9 million licensed drivers in the State of Pennsylvania, we thank you for the opportunity to provide this testimony regarding our experience with automated ticketing programs in Pennsylvania and across the United States.

Founded in 1982, the National Motorists Association is a membership-based North American advocacy organization dedicated to protecting motorists' rights and freedoms. We promote traffic laws that are fairly written and reasonably enforced, penalties that distinguish between responsible behavior and truly unsafe driving, and traffic safety achieved through sound engineering, not arbitrary measures designed to generate revenue.

Many of the other witnesses testifying on this subject are likely to extol the virtues of automated ticketing programs. In contrast, the NMA offers an alternative perspective and a word of caution about expanding these programs across the state.

While we share the goal of improving traffic safety on Pennsylvania's roads, we do not believe that automated ticketing cameras are the best or most equitable means to achieve that result. Regardless of the stated intent, a major component of these programs is almost always revenue, creating perverse incentives to operate them for profit rather than public safety. Our core objection is that automated cameras are specifically designed to exploit engineering flaws and minor driver errors. As a result, the vast majority of tickets are issued for violations that could be eliminated through proper engineering solutions—or would not be cited by a live police officer using judgment and discretion.

For the reasons detailed below, we do not believe any of Pennsylvania's automated enforcement programs have proven themselves worthy of expansion. For maximum clarity, I will address each program separately.

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**Speed Camera Programs**
**Automated Enforcement Without Rational Speed Limits Creates Speed Traps, Not Safety**

Before any speed enforcement program—automated or otherwise—is put in place, it is essential that the speed limits being enforced are properly and fairly set. A well-established principle in traffic engineering is that speed limits should be set at or near the 85th percentile speed—the speed at or below which 85% of free-flowing traffic naturally travels. This method reflects the safe and reasonable behavior of the vast majority of drivers and has been shown to promote uniform traffic flow, reduce crash risk, and maintain public trust in traffic laws. Studies across the U.S., including from the Federal Highway Administration, consistently show that arbitrarily lowering speed limits below this natural driving speed does not result in meaningful speed reductions but does increase violations and driver frustration. Worse, it diverts enforcement resources away from targeting truly dangerous behavior.
When speed limits are set too low—out of sync with roadway design and the way safe drivers naturally travel—automated enforcement programs effectively become revenue traps rather than safety tools. This dynamic is at the core of our concern with automated speed camera programs. Current speed camera programs, including Philadelphia's system on Roosevelt Boulevard, primarily ticket drivers not for reckless behavior but for exceeding artificially low limits, turning safe, reasonable drivers into violators. This undermines respect for traffic laws and punishes behavior that poses no real safety risk. The Roosevelt Boulevard Speed Camera Program is a prime example.

**<u>Roosevelt Boulevard Speed Camera Program</u>**

According to the 2024 Roosevelt Boulevard Automated Speed Camera Annual Report, over one million tickets—costing residents more than $111 million—have been issued on this roadway since June 2020, with **no reduction in fatalities or serious injuries**. The table below, taken from page 12 of the annual report, summarizes crashes from 2019 (before the program began) through 2023:

| CRASH SUMMARY ROOSEVELT BLVD | 2019 PERSONS | 2020 PERSONS | 2021 PERSONS | 2022 PERSONS | 2023 PERSONS | Change 2023 vs 2019 |
|---|---|---|---|---|---|---|
| TOTAL FATALITIES | 8 | 14 | 9 | 6 | 11 | 3 |
| TOTAL SERIOUS INJURIES | 28 | 18 | 27 | 22 | 44 | 16 |
| PEDESTRIANS | 1 | 3 | 2 | 2 | 2 | 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **FATALITIES** | | | | | | |
| **PEDESTRIAN** | 6 | 4 | 5 | 2 | 4 | -2 |
| **SERIOUS INJURIES** | | | | | | |
| **CYCLISTS INVOLVED** | 2 | 1 | 4 | 1 | 4 | 2 |
| **CYCLISTS FATALITIES** | 0 | 0 | 1 | 0 | 0 | 0 |
| **CYCLISTS SERIOUS INJURIES** | 0 | 0 | 0 | 1 | 0 | 0 |

As can clearly be seen, total fatalities and serious injuries actually increased on the roadway. Pedestrian and bicyclist fatalities and serious injuries fluctuated slightly but did not change in any significant or sustained way.

Further, according to the data in Appendix A of the annual reports from 2021 through 2024, average speeds, average issued speeds, and highest speeds captured at each location show mixed results. Changes in average speeds ranged from an increase of about 6 mph to a decrease of about 5 mph, with the vast majority of locations showing less than a 2 mph reduction. Although the highest speeds captured declined slightly at most locations, they remained well above reasonable standards—still in the 80 to 100+ mph range. This suggests that while speed cameras may have had some minor effect on extreme speeding, their impact in curbing the most dangerous behavior has been limited.

Despite these modest and inconsistent results, the Philadelphia Parking Authority, which operates the speed camera program, claims it has "*reduced speeding by 93%.*" However, the Authority has provided no data to substantiate this figure. As detailed above, neither average speeds nor the highest recorded speeds have declined by anywhere near that margin. This 93% claim appears to be based on comparing the number of tickets issued recently to the number of warning notices sent during the program's first two months—a comparison that is inherently misleading. Warning notices require no formal review and are generated simply by capturing a vehicle's license plate and matching it to an owner. In contrast, issuing an actual citation requires each alleged violation to be reviewed and approved by a police officer, with many dismissed in the process. Had the initial warning notices been subjected to the same scrutiny, their numbers would have been far lower. Therefore, the claim that speed cameras have "*reduced speeding by 93%*" is not only inaccurate, but it also misrepresents the program's actual impact on driver behavior.

Finally, it is important to note that approximately **91%** of tickets are issued to drivers traveling just **11–19 mph** over the speed limit. While the report only provides data for

this entire range, the *average issued speed* at almost all locations is around **55 mph**. This strongly suggests that most tickets go to drivers exceeding the posted limit by a mere 11–12 mph—not egregious offenders, but ordinary motorists moving at speeds they perceive to be safe and reasonable.

This is highly significant. The posted speed limits of 40 and 45 mph on Roosevelt Boulevard—a long, straight, multi-lane roadway—are unrealistically low based on the road's design. Aside from the 1.5% of drivers traveling at clearly excessive speeds, the reason the vast majority of drivers "speed" here is not because they are scofflaws, but because the roadway itself encourages speeds of 50 mph or more. If the speed limits were set realistically, or the roadway redesigned to naturally self-enforce lower speeds, most violations would disappear overnight. Instead, the government has built a road that invites higher speeds, under-posted the limit, and then installed cameras to penalize drivers for doing exactly what the roadway encourages them to do. This is a textbook example of a speed trap.

Before Pennsylvania considers expanding automated speed enforcement, it must ensure that local jurisdictions first set speed limits according to sound engineering principles – within about 5 mph of the 85th percentile speed. Otherwise, any automated ticketing program will not serve public safety but will simply exploit motorists for profit under the guise of enforcement.

Regardless of one's general opinion about ticketing cameras, there are many other solutions that are at least as effective—if not more so—than automated enforcement. In Riverside, California, one study found that **speed feedback signs** not only reduced speeds more effectively than speed cameras but did so at lower cost. In other studies, field tests using driver feedback signs in Clarksville, Tennessee, and by the Maine Department of Transportation showed impressive results:

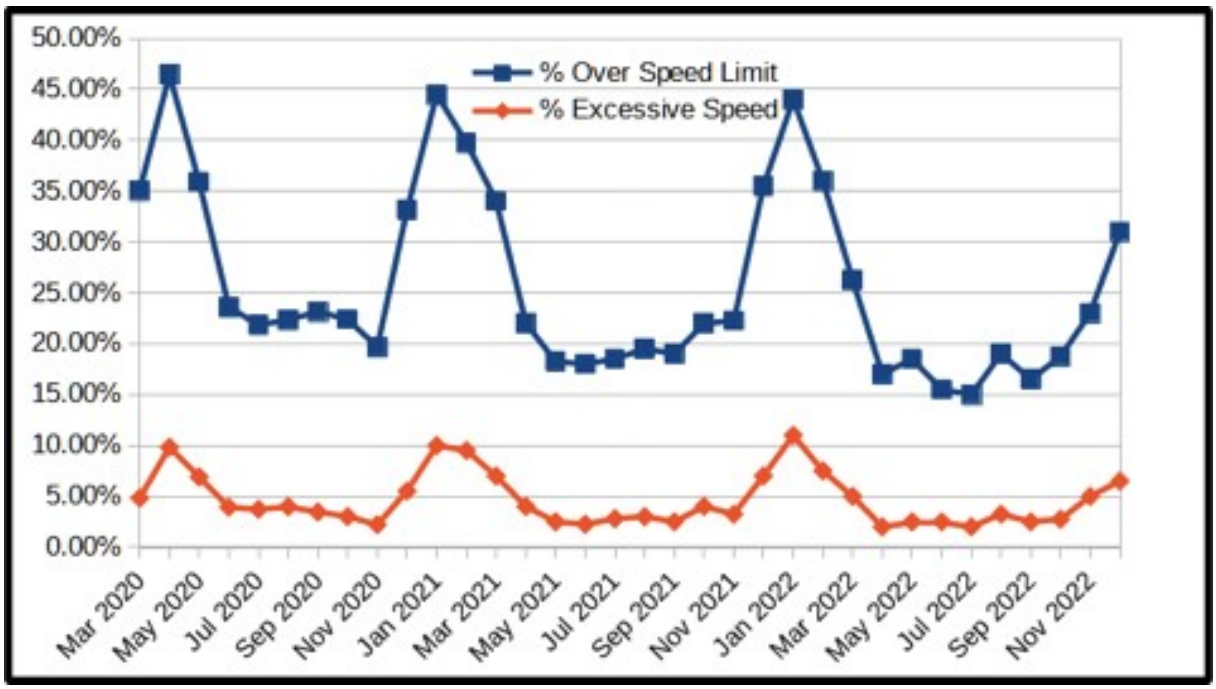
- Average speeds reduced by up to **23%**
- 85th percentile speeds reduced by up to **18%**
- Vehicles traveling 6+ mph over the limit reduced by up to **62%**

These are far better outcomes than those achieved by the Roosevelt Boulevard speed cameras—and importantly, speed feedback signs avoid the economic and equity problems inherent in punitive automated ticketing.

## Speed Cameras in Highway Work Zones

While Pennsylvania's Work Zone Camera Program is less abusive than most, the real answer to any real or perceived problem of speeding in work zones is engineering countermeasures, not ticketing cameras. As shown in the studies reference above, speed feedback signs can have a significant effect on lowering excessive speeds where they are present. Additionally, speed enforcement using live police officers is much more effective against wanton scofflaw behavior than is sending a ticket days or weeks later. Although PennDOT credits speed cameras with a reduction in speeds and crashes where they are used, a review of the Annual Automated Work Zone Speed Enforcement Reports shows little to no safety benefit from the use of speed cameras in work zones.

We compiled the monthly Speed Statistics from each report from the beginning of the program in March 2020 through December 2022. As can be seen from the graph below, there has been virtually no change in either the percentage of drivers traveling over the posted speed limit or the percentage of drivers traveling 11+ mph over the speed limit (excessive speed).

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Further, we conducted a statistical analysis of the speed data, comparing the monthly data from each of the three years. We conducted the following analysis: 1) 2020 vs 2021, 2) 2021 vs 2022, and 3) 2020 vs 2022. We found no statistical difference between any of the three time periods which indicates that any variation in the measured speeds was due to random fluctuation and not due to the presence of the ticketing cameras.

Although the AWZSE report shows a reduction in collisions in 2020 and 2021 compared to 2019, the likely cause of reduced crashes during this time period is the reduction in traffic volume and construction activities during the pandemic years of 2020 and 2021. In fact, crashes in 2021 were significantly higher than 2020, likely due to the increase in highway travel and construction activity as we emerged from pandemic restrictions. Although there was a reduction in crashes in 2022 noted in the annual report, considering that there has been little change in speeds in work zones since introduction of the cameras, this reduction is unlikely due to speed camera enforcement.

Note also that the reports do not provide data on injuries and fatalities. This is likely due to the fact injuries and fatalities to construction workers due to vehicles exceeding the speed limit in work zones is exceedingly rare. The vast majority of these injuries and fatalities are due to an accident involving construction activities and construction equipment, not passing motorists.

From March 2020 through December 2022, PA issued over 1 million automated tickets (both warnings and citations) in work zones. 84% of violators received warning notices and did not received a subsequent citation. This proves the effectiveness of issuing warning notices. In contrast, almost 50% of violators who received an actual citation (2nd time violators) also received a third or subsequent citation. Apparently, issuing an actual monetary citation was less effective than issuing a warning notice.

**Red-Light Camera Programs**

Just as speed cameras fail when enforcing artificially low speed limits, red-light cameras also tend to punish technical violations rather than address genuine safety threats. These programs frequently focus on ticketing drivers for split-second mistakes or minor infractions—rather than the rare, dangerous violations that actually cause crashes. As with speed enforcement, it is the underlying engineering—specifically, traffic signal timing—that determines whether enforcement promotes safety or simply generates revenue. Unfortunately, in too many jurisdictions, red-light camera programs

have become little more than traps designed to exploit common driver behaviors rather than prevent collisions.

Red-light camera enforcement is often touted as a safety measure to prevent serious right-angle crashes. But in reality, most red-light violations do not fall into this high-risk category. Violations generally fall into three main types:

- **Straight-through violations**, where a driver enters the intersection after the light turns red.
- **Rolling right turns**, where a driver fails to fully stop before turning right on red.
- **Left-turn violations**, usually drivers following another car through a turn just after the signal changes.

Each of these has distinct causes and vastly different safety implications.

**Straight-through violations** are further divided into *early-into-red* (within the first second or two) and *late-into-red* violations. Early-into-red violations make up the overwhelming majority of violations ticketed by automated cameras—over 96% in some studies—yet rarely cause crashes, as cross traffic hasn't yet entered the intersection. These often result from poorly timed yellow lights catching drivers in what engineers call the dilemma zone—the area where a driver, when the light turns yellow, cannot stop safely but also cannot enter the intersection before the light turns red. If yellow intervals are set too short for prevailing traffic conditions, this zone widens, forcing well-meaning drivers into unintentional violations.

Additionally, all drivers encounter what's called an indecision zone: the gray area where, when the light turns yellow, it's not immediately clear whether to stop or go. Even careful, prudent drivers will occasionally misjudge and enter an intersection just as the light turns red by tenths of a second—resulting in an automated ticket. Yet, such early-into-red violations are almost never dangerous, as the intersection is typically still clear.

The national standard for calculating yellow intervals—the Kinematic Equation—is meant to eliminate this dilemma zone, but many jurisdictions ignore best practices. Worse, if enforcement is based on tickets for violations occurring just fractions of a second after red, as is common, then programs end up punishing drivers for unavoidable or minor timing errors rather than addressing genuine safety risks.

Because there is no correct yellow light time for all drivers in all situations, engineers must extend the yellow light beyond the minimum time provided by strict adherence to the Kinematic Equation. This engineering tolerance help minimize mistaken entries on red and improves safety for all roadway users. It also decreases ticketing of otherwise safe drivers for unavoidable or minor timing errors.

Even more troubling is the widespread use of red-light cameras to target slow rolling right turns. These account for a large share of camera citations—as high as 98% in some instances—despite posing minimal risk. National data show that right-turn-on-red crashes are extraordinarily rare, accounting for less than 0.05% of all crashes. Even when these right-turn collisions occur, they tend to result in minor or no injuries. Yet, automated enforcement systems issue millions in tickets for these harmless technical violations.

Left-turn violations also often result from engineering shortcomings. Drivers waiting to turn left frequently "follow through" behind other cars after the light changes. This behavior rarely causes accidents but is easy to capture with cameras. At the same time, yellow intervals for left turns are often set even shorter than through movements, creating dilemma zones that force drivers into unintentional violations. The solution to reducing these violations is to set yellow intervals in turning lanes using the Extended Kinematic Equation which takes into account a driver's need to slow down prior to navigating the turn resulting in the need for a longer yellow interval.

Ultimately, the data show that catastrophic red-light-running crashes—those that cause serious injury or death—are almost always caused by drivers entering intersections late into the red, typically 5 seconds or more after the light has changed. These drivers are often impaired, distracted, or fatigued—not people trying to beat the light by a fraction of a second. Automated cameras do little to prevent such severe violations and crashes but are highly effective at mass ticketing drivers for technicalities.

If Pennsylvania wishes to reduce serious red-light-running crashes, the solution lies in proper engineering, not ticketing cameras. Properly timed yellow lights, including an additional time for engineering tolerance, dilemma zone protection technologies that help reduce the indecision zone, and intersection design improvements that make the traffic signal more conspicuous, can prevent violations before they happen. Red-light camera programs, when focused on minor infractions and revenue generation, do little to enhance safety—and much to erode public trust.

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## Recommendations

### Safety Through Engineering, Not Automated Enforcement

Taken together, the experience with automated speed and red-light camera programs shows a consistent pattern: when enforcement is prioritized over sound engineering, the result is mass ticketing of safe drivers, erosion of public trust, and minimal safety gains. Unlike trained police officers who use judgment and discretion, cameras operate with zero tolerance, ticketing safe drivers for minor, technical violations—even when conditions are safe. This erodes public trust and shifts attention away from real crash causes, like impairment, distraction, and aggressive driving.

Pennsylvania has an opportunity to learn from these outcomes and chart a different course. Rather than expanding automated enforcement, the state should focus first on proven engineering solutions—setting speed limits based on established traffic safety principles, redesigning roadways to be self-enforcing at the desired speed, optimizing signal timing to reduce red-light violations, and addressing the real causes of crashes such as impairment and distraction. By putting safety and fairness first, Pennsylvania can improve traffic outcomes without resorting to enforcement strategies that punish ordinary drivers and create perverse financial incentives.

Notwithstanding our recommendation to focus on engineering countermeasures and live police enforcement of traffic laws, should Pennsylvania's leadership decide to allow additional use of automated enforcement in the state, we recommend following these principles when drafting enabling legislation:

### Recommendations for Automated Enforcement Programs

The first step in any successful program is to determine the purpose of that program. For automated enforcement programs, one might ask, if the purpose of the program to:

- Enforce strict compliance with letter of the law?
- Enforce the spirit of the law?
- Solve a specific, identifiable violation problem?
- Solve a specific, identifiable collision problem?

Next, create a mission statement. A good mission statement might be:

*To reduce the number of collisions caused by a particular violation (e.g. red-light violations) at a specific location without unduly targeting the vast majority of otherwise reasonable drivers.*

Basic Principles for Automated Enforcement Programs

- Use automated ticketing as a last resort.
- Implement all reasonable engineering countermeasures first.
- Use the lightest touch possible to achieve your goals.
- Never run (or keep) a profit (voluntarily forgo any excess revenue, including revenue for other safety improvements).
- Issue warning notices for the first violation. Only issue fines for second or subsequent violations.
- When possible, issue warning notices for minor violations that don't present a clear danger to other roadway users.
- Target the outliers – those that are clearly outside the norm of reasonable driver behavior. If you are issuing large numbers of tickets, you are targeting more than just the outliers.
- Don't issue citations for violations that a live officer wouldn't issue tickets for.
- Never pay the vendor based on the number of tickets issued or revenue generated.
- Don't allow the vendor to make any program decisions.
- Don't allow the vendor to evaluate the success/failure of program.
- Decide on what constitutes success and how it will be measured BEFORE implementing the program. Use an independent researcher to evaluate results.
- Implement the lowest fine structure that is likely to encourage compliance.
- Be transparent with data. Post data monthly on the internet. Respond to Public Records Requests quickly and generously.
- Routinely evaluate the data generated to determine if any adjustments in engineering or program operation is necessary.
- Ensure defendants are treated fairly during adjudication and have a reasonable chance to challenge their citation.

**Program Specific Recommendations**

Red Light Camera Programs

- Focus on through violations, not rolling-right-turns or left turn follow-through violations. Consider warning tickets for minor violations.
- Set the yellow interval according to the ITE Recommended Practice with additional time for tolerance. Don't set it at or near the absolute minimum.
- Calculate the yellow interval in turning lanes using the Extended Kinematic Equation.
- Implement dilemma zone protection technology.
- Provide an additional grace period of up to 1.0 second before tickets are issued.

Speed Camera Programs

- Implement traffic calming and other engineering countermeasures to create self-enforcing roadways at the target speed.
- Set the speed limit at the 85th percentile speed of free-flowing traffic.
- Employ speed feedback signs where speed cameras are being used.
- In school zones, ensure drivers are fairly warned of the school zone speed limit and when it is in effect using speed limit flashing beacon arrays and changeable speed limit signs coupled with speed feedback signs. Deploy in-roadway "yield to pedestrian" signs where appropriate.
- Limit school zone and work zone enforcement to only times when school children or roadway workers are present on the roadway.

In conclusion, we wish to reiterate that many other countermeasures exist to improve traffic safety without the need for ticketing cameras and we urge you to consider those options rather than extend and expand Pennsylvania's ticketing camera programs.

Thank you for your consideration.

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