



February 1st, 2022

Department of Public Safety
City Council Briefing Document
Traffic Safety Camera Briefing

Executive Summary

Denver is continually working to become a more walkable, bikeable and safe environment for residents in all transportation modes and across all abilities. The use of Traffic Safety Cameras including Red Light and Speed Safety Cameras supports our efforts to provide a safe multimodal, multi-ability environment. As Denver is a Vision Zero city, we have committed to a goal of zero traffic-related deaths and serious injuries by 2030. Photo enforcement is a key component in our Vision Zero plan.

Background

Denver works to thoughtfully use Traffic Safety Camera technology. Decisions on placement of our 4 red light safety camera approaches and 5 speed safety radar vans are determined through a variety of factors including complaints from residents on speed issues, compliance data, and restricted speed zones to protect sensitive populations in school zones, CDOT and other street/highway construction zones. Reduced speed works to limit the severity and number of crashes. Traffic calming measures, including speed reduction tools like photo radar, are often requested by neighborhoods and constituents to improve safety and quality of life.

Photo red light technology has reduced crashes at intersections where the technology is deployed. For example, at the high-use intersection of 6th and Lincoln:

- Total crashes have decreased 52%
- Side impact crashes have decreased 75%
- Injury crashes have decreased 80%

High traffic speeds increase the risk of a crash as well as risk of serious injury or death. The presence of photo radar vans significantly reduced excessive speeders. The presence of the van for five consecutive days results in an average 21% reduction in excessive speeding (vehicles traveling 10+ MPH over the posted speed limit).

This technology acts as a force multiplier, allowing police officers to be more effectively deployed while still addressing traffic enforcement concerns. Tickets for red light violations are also difficult for an officer to issue and pose a safety risk to officers since they too must run a red light to ticket after witnessing the infraction. Red light cameras also keep crosswalks safe and clear for disabled and aging populations.

Department of Public Safety
1331 Cherokee St. #302 | Denver, CO 80204
www.denvergov.org/safety
p. 720-913-6020 | f. 720-913-7028

Denver's Process for Issuing Photo Enforcement Citations

Issuance of Citation

When a Photo Enforcement incident is captured, the vendor performs the back-end processing by preparing each citation for review. They match the license plate with information provided by NCIC and attach all captured images relating to this incident. This process takes about 7 to 10 working days. Red Light incidents are then placed into a queue for DPD review. All incidents are reviewed for a violation by the DPD. (NOTE: As required by state law, for photo radar citations, each van must be staffed with an officer. Additionally, DPD requires that the photo enforcement agent in the van accurately estimate the vehicle's speed within +/- 5mph in order for a citation to be issued. This is the same requirement as a radar-certified police officer issuing citations via radar gun.) Not all incidents captured are violations.

Since Photo Speed citations are witnessed and annotated by the operator at the time that the incident occurred, these Notices of Violation (NOV) are immediately issued to the first registered owner of the vehicle after processing.¹ They do not go through additional DPD review as they would with Red Light. Throughout this entire process, the vendor has no authority to approve or reject an incident. NOV's were mandated by City Council as an advisement to the first registered owner of the vehicle that there has been a violation involving their vehicle. It gives the owner three options: send in a copy of their "not pictured driver" affidavit with a copy of their driver's license; plead not guilty, set it for final hearing and waive their right for process service; or pay the fine.² The "respond by date" on the notice of violation is 15 days after the mailing date. If we do not receive any correspondence from the person 5 days after the respond by date, we send them a reminder notice (Failure to Respond).

If correspondence is still not received after 45 days from the date of violation, we issue a Penalty Assessment Notice (PAN) to be served upon the person via personal service or certified mail.³ If the person is successfully served, the PAN contains the date upon which the person needs to respond in court (Court Date). At this phase, the person is still given the same options they had on the NOV but is now compelled by law to respond. If the person does not respond by this date, the PAN is filed in the Denver County Court by the DPD and a default judgment is placed on the citation. If the person responds by the court date and chooses to set it for final hearing, they are allowed to do so and is

¹ Although Notices of Violation (NOV) are official documents from the City and County of Denver, the citizen is not obligated to respond to this notice.

² During the NOV phase, the Photo Enforcement unit exercises "presumptiveness" – the registered owner of the vehicle is presumed to be the driver of the vehicle. Since Colorado is a driver liability state, the driver of the vehicle has to be the person in violation.

³ The Penalty Assessment Notice is a legal document charging the named person of the violation. The person is then, by law, required to respond.

given the opportunity defend their plea in front of a judge. If the person is found guilty and chooses not to pay the fine, the citation is sent to collections 30 days after the judgment has been made.

Right to Grieve/Review

Upon receipt of the NOV, in addition to the 3 options they are provided as stated above, the person is also given every opportunity to review the citation for accuracy, if need be, with the assistance of a Photo Enforcement agent.

- a. The NOV contains instructions on how to view their violation on-line providing them with 11-megapixel images captured by the cameras; and for Red Light violations, a 10-second video of the violation as it occurs is also available.
- b. The notice also provides the person a phone number if they have any questions regarding their violation. This phone number is answered by employees of the Photo Enforcement Unit, as employed by the City and County of Denver. We do this to ensure that the person can feel confident that their citation is legitimate and that they are getting the information directly from the unit.
- c. If the person has any issue or concern regarding the identity of the driver, we encourage the citizen to send us a copy of their driver's license (option 2 on NOV). If the reviewing officer still believes in the identity of the driver, we give the person an opportunity for an "in-person review" at our facility. We make it clear to the person that this "in-person review" does not guarantee the cancellation of a citation.
- d. If after the "in-person review" the officer still believes in the identity of the driver, the person is given the option to set for final hearing.

Right to Appeal if dissatisfied with outcomes

At this point, they are given the option to set the case for final hearing and plead their case to a judge. This then becomes a court matter and the court process is then followed.

Violations Data

Photo Red Light: 07-01-19 to 06-31-21

- Detected 178,221
- Issued 129,477
- 72.65%

Reasons for Non-Issuance include: Temporary Plates, Driver Avoidance, Driver Blocked (Exterior), Driver ID (Motorcycle Helmet), Driver Image Not Captured (Equipment), Flash Malfunction, DMV (No Hit), No Plate, Plate Misread, Plate Not Captured, Plate Obstructed, Police Officer Citation Issued, Poor Driver Image, Scene Images Not Captured, Unable to read Plate, Unclear Scene Images

Photo Speed: 07-01-19 to 06-31-21

- Detected 107,110
- Issued 70,154
- 65.50%

Reasons for Non-Issuance are similar to Photo Red Light, but also include: Observation Error, Cross-Offs, Operator Error (Rejected Enforcements), Equipment Malfunction & Weather.

Additional Materials

Please see Frequently Asked Questions (FAQs) included at the end of this document.

Points of Contact

Elise Rahn
Community & Government Affairs Manager
Department of Public Safety
Elise.Rahn@denvergov.org
720.636.3306

Ted Porras
Photo Enforcement Unit Operational Supervisor
Denver Police Department
Ted.Porras@denvergov.org
720.271.6907

FAQs

Q: Has the City evaluated vehicle clearance time (yellow light timing) as a tool for traffic safety?

A: Several intersections are under study right now to measure the change in stop-bar violations by varying the yellow time. We are several months away from completing data collection and analyzing the results but can share that information once available.

Additionally, an outside study indicated a slight decrease in rear-end crashes but an increase in both broadside and overall crashes when the clearance interval times are greater than Institute of Transportation Engineers (ITE) recommended guidelines. Crash rates across the board were lower when the yellow + all red time was less than the ITE recommended total clearance time.

In the past, a very limited study was done at several Denver intersections. That limited review showed the violation rate initially decreased when we went from a 3.0 sec yellow to the ITE calculation. Our next follow up about a year and a half later showed rates returned to or exceeded the before condition violation rate.

Q: What is the effect of lengthening yellow light timing at intersections?

A: Increasing the yellow time alters the traffic signal operation to be more forgiving to vehicles traveling faster than the posted speed limit as they clear the intersection. At the four photo enforced intersections, the yellow and all-red times were updated just prior to activating the photo enforcement equipment.

If our yellow timing was too short, we'd expect to see a higher than average number of rear-end crashes. The following table compares a handful of locations, but in all cases illustrated our signals are below the statewide average for rear-end crashes. Also shown is information with respect to broadside crashes, which tend to cause the most damage. Our red light safety camera locations show broadside crashes that are relatively close to the statewide average whereas our non-enforced locations show a higher than average rate for broadside crashes.

	% crashes broadside	% broadside difference from statewide average	% crashes rear-end	% rear-end difference from statewide average
Statewide Average	10.5%	--	57.4%	--
<i>Enforced Intersections:</i>				
Lincoln & 6th Ave	14.5%	4.0%	18.2%	-39.2%

Kalamath & 6th Ave	17.6%	7.1%	38.9%	-18.5%
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Non-Enforced Intersections:

Lincoln - 8th Ave	5.8%	-4.7%	17.7%	-39.7%
Broadway - 8th Ave	32.7%	22.2%	8.2%	-49.2%

Q: What is the current length of yellow light signals at city intersections? At the 4 photo enforced intersections specifically?

A: All traffic signals in CCD have a yellow time that range from 3.0 to 5.0 seconds. All signals also have an all-red time that ranges from 2.0 to 4.0 seconds.

Federal guidelines (as described in the Manual on Uniform Traffic Control Devices) state that “A yellow change interval should have a minimum duration of 3 seconds and a maximum duration of 6 seconds. The longer intervals should only be reserved for use on approaches with higher speeds.”

Specifically, the interval timing at our photo enforced approaches are:

SB Speer Blvd-8th Ave: WB Approach
 Yellow - 4.0 seconds
 All-red - 2.0 seconds

Kalamath St – 6th Ave: EB Approach
 Yellow - 4.0 seconds
 All-red - 2.0 seconds

Lincoln -6th Ave: EB Approach
 Yellow - 3.5 seconds
 All-red - 3.5 seconds

NB Quebec St-36th Ave: NB Approach
 Yellow - 5.0 seconds
 All-red - 2.0 seconds

Q: What other engineering improvements have you made at intersections for traffic safety?

A: Improvements at intersections include:

- Installation of two or more overhead indications. This improves the visibility of traffic signals to drivers (i.e. cone of vision).
- Upgrade lights from 8” diameter to 12” diameter to increase visibility
- Upgrade lights from incandescent bulbs to LED (brighter and faster turn-on/turn off time)
- Left-turn arrows or left-turn on green arrow only signals

- Improved signal timing to reduce unnecessary breaks in traffic flow (signal timing coordination of 200-300 signals per year).

Q: Can you demonstrate that photo enforcement is effective in improving traffic safety?

A: Data tracking on the photo enforcement programs occurs regularly, including reports provided by the vendor and compiled by DPD and Department of Transportation and Infrastructure. The technologies have demonstrated an impact on speeds and crashes. The presence of photo radar vans has been shown to significantly reduce excessive speeding where it is deployed. The presence of the van for 5 consecutive days results in a 21% reduction in excessive speeding (vehicles traveling 10+ MPH over the speed limit). Around 75% of red-light violations are first-time violations, indicating that most violations are not by repeat offenders and behavior is being changed at that intersection. In addition, crashes at photo enforced intersections have decreased. For example, at the high-use intersection of 6th and Lincoln, total crashes have decreased 38%, side impact crashes have decreased 62% and injury crashes have decreased 60%.

Q: How is photo enforcement revenue used?

A: As with all fine revenue – including traffic tickets written by an officer – dollars flow into the General Fund. Historically we have done this for two policy reasons: tying revenues to a specific purpose may limit the amount of funds available for that purpose or create concerns that fines are only being generated to increase revenue for that purpose, and having the most flexibility possible in general fund revenues allows us to be nimble during changing economic conditions and make funding decisions based on priorities each year. Since our overall goal is traffic safety and compliance with traffic laws, revenues should ideally decrease over time as more people begin to comply with the law. Photo red light revenues have been trending down over the last several years, indicating that red light violations are decreasing at those photo enforced intersections as intended. State statute also mandates that fine revenue may not be used to pay for the equipment used for detecting violations. Though these revenues are not separated for a specific purpose, additional available resources in the General Fund have been used in recent years to significantly expand multi-modal safety options in the city including enhanced crosswalks, intersection safety improvements, Vision Zero related safety studies and improvements, upgrade and replacement of traffic signals, and neighborhood traffic calming measures.

Q: What procedures are used to ensure violations are accurate?

A: In the case of photo radar, a live person from the photo enforcement unit (PEU) is inside the vehicle monitoring all captured incidents. PEU personnel go through the same training on use of radar as radar-certified uniformed officers and, like uniformed officers issuing tickets, our policy is that the PEU agent must accurately estimate a vehicle's speed within +/- 5 MPH in order for a citation to be issued. All photo red light citations are reviewed by a live DPD PEU agent to determine if a violation truly occurred. Notices of violation are issued to the first registered owner of a vehicle and the owner has multiple options for reviewing the incident captured for accuracy and contesting the violation, including moving to a court date. Not all violations detected are issued. In fact, from 2019-2021, 72.65% of red light safety camera violations detected were issued and 65.50% of detected speed safety camera

violations were issued. Reasons for non-issuance include poor driver image, plate obstructed, unclear scene images, and observation error.

Q: Some outlets have reported these tickets are not “real” and do not need to be paid. Is this true?

A: While the state legislature has limited maximum fines associated with photo red light violations to \$75 and photo speed violation to \$40 (\$80 if in a school zone) and has mandated that no points may be issued against a license for the violations, they are nonetheless real traffic violations. As directed by City Council, Denver first issues a Notice of Violation as an advisement with a request to respond within 15 days. If no action is taken by the vehicle owner after 45 days, a Penalty Assessment Notice (PAN) will be served via personal service or certified mail. A PAN is a legal document charging the person named and the vehicle owner is compelled by law to respond to this PAN.

Q: How do stop line/stop bar violations work?

A: Stop line violations (crossing the white bar at a crosswalk or curb line) are only issued when the front tires of a vehicle have completely crossed the white stop line. This type of violation results in a \$40.00 fine. If a vehicle’s two rear tires have crossed the white stop line, the fine is set at \$75.00. Drivers are free to turn right on red, but only after coming to a complete stop behind the stop line first. The use of stop line violations were discussed at great length by the Denver City Council in 2011 and was maintained in Denver Revised Municipal Code to preserve a safe space for pedestrians, bicyclists, children and those with abilities impaired to cross without fear of being hit by vehicle traffic. In 2021, 27% of photo red light violations were stop line violations.

Q: How do you ensure appropriate signage is in place?

A: State statute mandates that signage warning of enforcement must be placed in a conspicuous place not fewer than 300 feet (for radar) or not fewer than 200 feet and not more than 500 feet (for red light) before the technology is in use. The statute also mandates minimum sign lettering size. In response to requests from City Council last year, Denver updated our temporary signage to be on stands 5’-7’ high to be more prominently in driver sight line.

