



Legislative Report
OUTCOME EVALUATION:
Fixed Photo Radar System
City of Portland
2017-2019

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Questions?

To request a copy of this report, e-mail fixedspeedsafetycamera@portlandoregon.gov.

For questions (or to share comments) about the City's Fixed Speed Safety Camera Program or this report, please contact the Program Specialist, Traffic Safety Education and Enforcement, Portland Bureau of Transportation at 503-823-5821 or e-mail fixedspeedsafetycamera@portlandoregon.gov.

For technical issues related to the camera operations or a violation notice processed via photo radar in the City of Portland, contact the City's vendor's Photo Enforcement Hotline at 503-221-0415 or 1-800-799-7082.

For questions related to the City's Vision Zero Action Plan, e-mail VisionZero@portlandoregon.gov

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Executive Summary

For over two decades, the City of Portland (“City”) has been a leader in utilizing automated enforcement tools to bolster transportation safety. Portland Police Bureau (PPB) started its mobile speed van program in 1996 and initiated its red-light running program in 2000. Portland Bureau of Transportation (PBOT) initiated the City’s fixed speed safety camera program as part of its Vision Zero landscape in 2016 and anticipates leveraging red light/speed dual enforcement at intersections (HB 2409) as the City expands its automated enforcement suite.

Three of the four fixed speed safety camera systems were in place by April of 2017. Early 2018 marked the final installation of the fourth fixed speed safety cameras along NE Marine Drive. In 2018, the City conducted a telephone survey that queried Portlanders about speeding and photo enforcement. In general, the survey results trended positively for photo enforcement of speeds on the high crash network. PBOT will continue to analyze the telephone survey results and monitor public acceptance through the release of future online surveys.

Looking at the approximate average among all eight locations, the number of drivers speeding remains much lower than the “before” speed studies conducted prior to photo enforcement operation. Comparing the change among the “before” speed study and the most recent speed counts, there is an overall 57% decrease in the number of cars traveling over the posted speed limit; 85% decrease in numbers of drivers travelling more than 10 mph over the posted speed. A reduction in the 85th percentiles speeds supports the role that photo enforcement can play in managing speeds by supplementing a context-sensitive approach that emphasizes crash history and the presence of people walking and bicycling.

The City’s Vision Zero Action Plan aims to eliminate deaths and serious injuries on Portland streets in part by reducing the risks that speeding poses to all road users on the City’s high crash network. Complementing engineering, education and encouragement facets of transportation planning and operations, fixed speed safety cameras are among the safety tools in the City’s enforcement toolkit to reduce the risks of speeding in an equitable, data-driven and accountable manner.



Reporting Mandate

Chapter 721, 2015 Oregon Revised Statutes (ORS) specifies the use and reporting requirements of the City of Portland's fixed photo radar system, referred to by the Portland Bureau of Transportation (PBOT) as fixed speed safety cameras. The City shall provide an outcome evaluation once each odd-numbered year to the Legislative Assembly. This report shall include the following sections:

- (a) The effect of the operation of the fixed photo radar system on traffic safety;
- (b) The degree of public acceptance of the operation of the fixed photo radar system; and
- (c) The process of administering the use of the fixed photo radar system.

While used to great effect in other cities throughout the country, readers are cautioned that this report captures a program that is still in its nascent stages of operation. It is premature to evaluate the crash data, preliminary or otherwise, since the camera systems have been operating for less than three years. However, comparison of the "before" and after speed counts near the fixed photo radar system are indicators of positively influencing speed reduction through automated enforcement.

Overview: Portland's Fixed Speed Safety Camera Program

In 2015, HB 2621 granted the City the authority to implement fixed photo radar (i.e., fixed speed safety cameras). The fixed speed safety cameras must be placed on “urban high crash corridors”, as defined by state law. Approved by City Council in May of 2016, the City implemented its fixed speed cameras on four of the City's High Crash Network (HCN) corridors¹ as a two-year Vision Zero speed action that addresses the role speed plays in crash severity.

The Portland Bureau of Transportation (PBOT) coordinated and implemented a Memorandum of Understanding (MOU) among Portland Police Bureau (PPB), PBOT and the Multnomah County Circuit Court (4th Judicial District, Oregon Judicial Department) to promote collaboration regarding the City's automated enforcement programs. The City amended² PPB's photo radar (i.e., mobile speed van) service agreement to install and operate eight camera systems. Any fixed speed revenue beyond the costs will be dedicated to investing in traffic safety of the HCN corridors.

Four (4) High Crash Corridors: Eight (8) Fixed Speed Safety Cameras

A camera system enforces each direction of travel. Thus, there are a total of eight systems among four HCN streets. Three safety camera systems were operational upon publication of the previous 2017 report.³ Those locations include:

- Southwest Beaverton-Hillsdale Highway (east of SW 39th Ave);
- SE 122nd Avenue (between SE Holgate Boulevard and SE Foster Road); and
- SE Division Street (east of SE 148th Avenue).

¹ The four HCN streets where the fixed speed safety cameras are located are among ten corridors identified as “urban high crash corridors” as defined in ORS Chapter 721 and captured in City Ordinance 187727 (May 4, 2016). City Ordinance 187727 and exhibits (include finding of ten roadways, MOU, amends the photo radar contract to include fixed speed) can be found at <https://efiles.portlandoregon.gov/Record/9121107/> and <https://efiles.portlandoregon.gov/Record/9121110>.

² Ibid.

³ Previously reported, please refer to the *Legislative Report OUTCOME EVALUATION: Fixed Photo Radar System City of Portland (2015-2017)* biennial report (2017) for an overview of the other three locations: SW Beaverton-Hillsdale Highway, SE 122nd Avenue, and SE Division Street. A copy of the 2017 biennial report can be found at <https://www.portlandoregon.gov/transportation/70763>



Table (1) summarizes the locations and enforcement start dates of each system including the fourth systems most recently installed along NE Marine Drive. The next section of this report provides a more detailed overview of NE Marine Drive camera systems.

WARNING BEGIN DATE	CITATION BEGIN DATE	GENERAL LOCATION DESCRIPTION FIXED SPEED SAFETY CAMERAS
August 25, 2016	September 24, 2016	SW Beaverton-Hillsdale Highway (westbound, eastbound) Between Hillsdale Town Center and SW Shattuck Road, the nearest intersection is SW 35th Avenue between SW 39th Avenue and SW Dosch Road. These systems are attached to existing poles.
March 6, 2017	April 5, 2017	SE 122 Avenue (northbound, southbound) (between SE Foster Road and SE Holgate Blvd) Southbound is near SE Steele Street; and northbound is near SE Reedway Street. The camera systems are on new metal poles; the speed reader boards are attached to existing wood poles.
March 6, 2017	April 5, 2017	SE Division Street (westbound, eastbound) (between SE 148th Ave and 162 nd Ave) Just east of SE 148th Ave near SE 151st Ave. The camera systems are on new metal poles; the speed reader boards are attached to existing wood poles.
February 20, 2018	March 22, 2018	NE Marine Drive (eastbound, westbound) Eastbound (EB) is just west of NE 33rd Drive; and westbound (WB) is west of NE 138 th Avenue but east of SE 122 nd Avenue. The EB system is attached to City-owned (wood) poles. The WB systems are attached to a utility-owned wood pole. Coordination with the Multnomah County Drainage District (MCDD) and regional utility company was extensive due to the levee.
September 25, 2018	October 10, 2018	NE Marine Drive (eastbound) Interim warning period during the first two weeks following the speed reduction from 40 mph to 35 mph along this segment of NE Marine Drive.

Table 1. An overview of the City's fixed speed safety cameras' dates of operation and description of where each system is located.

NE Marine Drive (Eastbound, Westbound)

NE Marine Drive is one of thirty streets among the City's High Crash Network (HCN). Lane departure crashes along NE Marine Drive are three times higher on NE Marine Drive than the Citywide percentage, 19% *versus* 5.5%. The fixed speed safety camera systems are among numerous safety improvements⁴ completed or planned along Marine Drive. The City's fixed speed systems enforce each direction of travel along the respective high crash street: NE Marine Drive's eastbound system is near the intersection of NE 33rd Drive; and the westbound system is located near NE 138th Avenue.

Planning around the levee

Since NE Marine Drive is located on a levee, plans review required coordination with and approval by Multnomah County Drainage District (MCDD).⁵ To minimize impact to the levee, the City utilized existing poles. The eastbound location leveraged a City-owned pole. A regional utility firm, Portland General Electric (PGE), permitted the use of its poles for the westbound location. Since the devices are electrified and require grounding,⁶ installation of the systems required MCDD review and approval.

System Components

Each system is comprised of a fixed speed safety camera system and its accompanying speed reader board (SRB). The SRB is a digital sign that displays a driver's current rate of speed providing immediate feedback and is placed 100 to 400 yards in advance of the camera system. In addition to the SRB, there is a "TRAFFIC LAWS PHOTO ENFORCED" sign and a speed limit sign. Figure (1) shows imagery of an SRB assembly and the Marine Drive fixed speed safety camera systems.

Camera system components includes a speed detection system (inclusive of radar antennae), front/rear cameras and front/rear flashes. The fixed speed safety camera system detects when drivers exceed the posted speed limit and photographs the driver and the vehicle's front and rear license plates.

⁴ To learn more about other improvements along NE Marine Drive - such as rumble striping in 2019 - visit <https://www.portlandoregon.gov/transportation/59283>. An overview of safety projects can be viewed on maps (2018, 2019) found at <https://www.portlandoregon.gov/transportation/68873>.

⁵ To learn more about the levee, consider visiting MCDD's websites at <http://www.mcdd.org/levee-accreditation/what-is-a-levee/> and <http://www.mcdd.org/your-drainage-district/>

⁶ Since grounding rods permeate the soil of the levee, MCDD review and approval was required. The devices are grounded because they are electrified. As with any electrified or energized pole in the right of way, the devices pose an electrical hazard. Only licensed professionals should access any component of any of the system's devices and attachments.



Figure 1. Photos, NE Marine Drive's speed reader board assembly and camera systems.

On left, the speed reader board (SRB) assembly (grouping of the speed limit sign, SRB and "traffic laws photo enforced" sign) in advance of the westbound fixed speed safety camera on NE Marine Drive. Center, the Fixed Speed Safety Camera System enforcing NE Marine Drive eastbound (near NE 33rd Drive). On right, the fixed speed system enforcing NE Marine Drive westbound (near NE 138th Avenue). The camera images show the front and rear cameras with front and rear adjoining flashes.

Warning periods and enforcement

Both systems were installed early 2018 and operationalized in February of 2018. As noted earlier in Table (1), activation of the 30-day warning period started on Tuesday, February 20th. During a warning period, warning letters are mailed to those who receive a notice of speed violation. The citation period commenced on March 22, 2018.

Several months later, the Oregon Department of Transportation (ODOT) approved a speed reduction along NE Marine Drive west of NE 33rd Drive. Figure (2) illustrates the segment where the approved speed reduction lowered the posted speed of 40 mph to 35 mph. The eastbound camera system is within this segment of speed reduction. To support this transition, PBOT directed an interim two-week warning period from September 25, 2018 to October 9, 2018 (inclusive) for the eastbound enforced direction.



The NE Marine Drive fixed speed safety cameras completed the fourth location of the pilot program under the City's Vision Zero speed action item. The next section expands on the City's traffic safety efforts and how its fixed speed safety cameras complement speed reduction efforts.

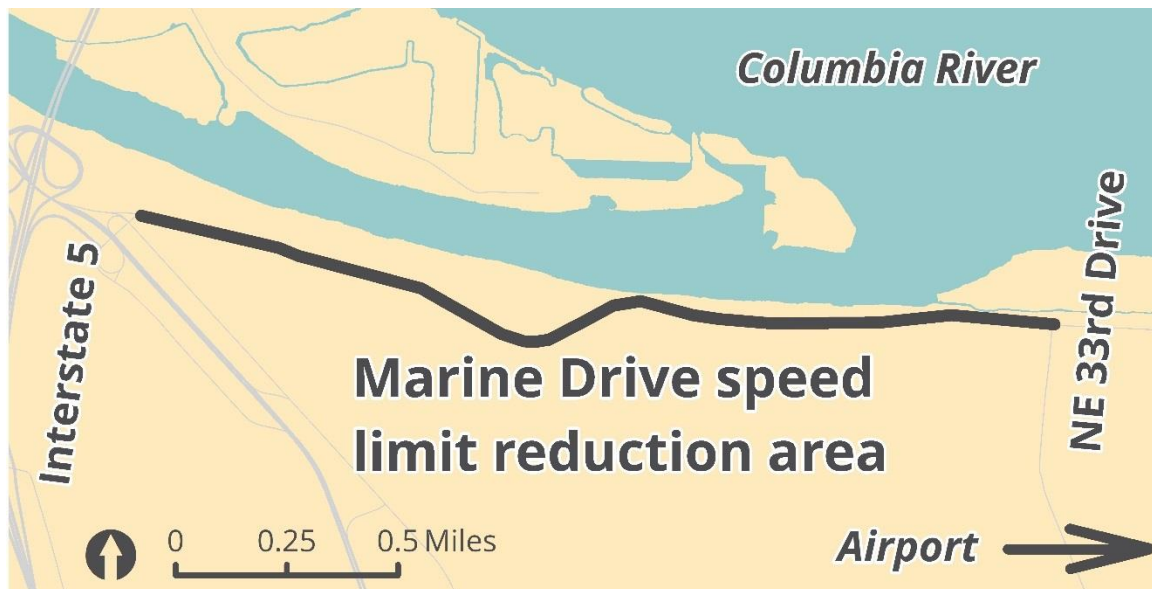


Figure 2. ODOT approved a speed reduction from 40 mph to 35 mph along this segment of NE Marine Drive. (graphic credit: Matt Kelly, PBOT)

There were 140 total reported crashes along this segment from 2012 to 2016: 0 fatalities, 6 people seriously injured, 35 people moderately injured, and 64 people with minor injuries. The eastbound camera system is located west of NE 33rd Drive. An interim two-week warning period went into effect for the eastbound direction when speed signs were swapped on September 25, 2018.

Traffic safety

The City is committed to saving lives and reducing injuries to all people using its transportation system through its action plan, Vision Zero. The 2035 Transportation System Plan (TSP) safety transportation goal states:

The City achieves the standard of zero traffic-related fatalities and serious injuries. Transportation safety impacts the livability of a city and the comfort and security of those using City streets. Comprehensive efforts to improve transportation safety through equity, engineering, education, enforcement and evaluation will be used to eliminate traffic-related fatalities and serious injuries from Portland's transportation system.⁷

The Vision Zero Action Plan outlines numerous actions to eliminate all traffic deaths and serious injuries. Action items include tasks to mitigate dangerous behaviors and speeding. Implementing a fixed speed safety camera program is among the speed action items.

S.1: Vision Zero Speed Action Item

The fixed speed safety camera program⁸ is one of many components comprising the Vision Zero Action Plan⁹ to address the role that speed¹⁰ plays in crash severity. The fixed speed safety cameras are located on four of the City's high crash corridors. The City's High Crash Network (HCN) streets¹¹ represent eight percent of Portland roadways but *account for 57 percent of deadly crashes*.

Speeding is unsafe for all road users. PBOT aims to encourage drivers to slow down on its HCN and other streets as part of its *Vision Zero* effort to eliminate traffic deaths from the City's roads.

⁷ Page 16, *2035 Transportation System Plan* (May 2018). The TSP guides investments to maintain and improve the livability of Portland. TSP documents are located at <https://www.portlandoregon.gov/transportation/77358>.

⁸ Information about the City's Fixed Speed Safety Cameras is located on PBOT's website at <https://www.portlandoregon.gov/TRANSPORTATION/70763>.

⁹ The fixed speed safety camera Vision Zero pilot is speed action item S1. Visit <https://www.portlandoregon.gov/transportation/71737> to view the actions item and respective performance measures.

¹⁰ A visual interactive of factors involved in deadly traffic crashes can be found at <https://www.portlandoregon.gov/transportation/trafficdeaths/>.

¹¹ To learn more about the thirty intersections and thirty streets that comprise the High Crash Network, visit <https://www.portlandoregon.gov/transportation/54892>.

Decreasing the number of vehicles speeding

Speed studies (also referred to as speed counts) were conducted along the street segments enforced by the fixed speed camera systems. A “before” speed study captures speed counts before operation of the fixed speed systems. The second speed study is conducted before the warning period ends. Speed counts thereafter are conducted at least once annually.

Overall, speeds along the segments near the respective camera systems show a general decrease in the number of drivers speeding. As time passes, the number of drivers speeding remains much lower than the “before” speed studies conducted prior to operation.

- Looking at the approximate average among all eight locations, there was an initial 61% decrease in the number of cars traveling over the posted speed limit; 87% decrease in numbers of drivers travelling more than 10 mph over the posted speed.
- Comparing the change among the before speed study and the most recent speed counts, there is an overall 57% decrease in the number of cars traveling over the posted speed limit; 85% decrease in numbers of drivers travelling more than 10 mph over the posted speed.

Table (2) shows the percentage change in the number of drivers speeding above the posted speed limit and the number of drivers speeding more than 10 mph between the “before” and the subsequent “after” speed counts. Figure (3) shows the changes in the volume of speeders.

The speed counts also demonstrated a reduction in the 85th percentiles.¹² Table (3) shows the posted speed limit and the 85th percentile speeds resulting from the myriad of speed counts. The reduction in 85th percentiles is a positive trend demonstrating a reduction in speeds. Photo enforcement of speeds supplements a context-sensitive approach that emphasizes crash history and the presence of people walking and bicycling.¹³

Speed studies are an essential component to monitoring and evaluating the program. As operations continue and the program matures, speed studies will be an enduring component of the program. Speed analysis will inform how the City monitors its program and where photo enforcement of speeds may be most effective.

¹² Manual on Uniform Traffic Control Devices (MUTCD, 2009) defines the 85th percentile as “the speed at or below which 85 percent of the motor vehicles travel.”

¹³ Speed limits using a context-sensitive approach that emphasizes crash history and the presence of people walking and bicycling is an emerging national best practice.



Percentage change comparing speed counts (dates range from July 2016 through January 2019) Percentages show a decrease	% Reduction		
	before study & after study #1	before study & after study #2	before study & after study #3
BEAVERTON-HILLSDALE HWY EASTBOUND			
All speeders	63%	70%	62%
"Top-end" speeding	94%	93%	92%
BEAVERTON-HILLSDALE HWY WESTBOUND			
All speeders	58%	68%	57%
"Top-end" speeding	88%	92%	86%
DIVISION EASTBOUND			
All speeders	37%	40%	Forthcoming spring 2019
"Top-end" speeding	64%	65%	Forthcoming spring 2019
DIVISION WESTBOUND			
All speeders	57%	63%	Forthcoming spring 2019
"Top-end" speeding	79%	85%	Forthcoming spring 2019
SE 122ND AVE NORTHBOUND			
All speeders	69%	70%	Forthcoming spring 2019
"Top-end" speeding	92%	96%	Forthcoming spring 2019
SE 122ND AVE SOUTHBOUND			
All speeders	67%	67%	Forthcoming spring 2019
"Top-end" speeding	92%	93%	Forthcoming spring 2019
NE MARINE DR EASTBOUND (IVO 33RD)			
All speeders	72%	54%	
"Top-end" speeding	97%	90%	
NE MARINE DR WESTBOUND (IVO 138)			
All speeders	67%	45%	
"Top-end" speeding	90%	71%	

Table 2. All locations continue to demonstrate a reduction in both overall speeding ("all speeders" travelling 1 or mph over) and those driving greater than 10 mph over the posted speed limit ("top-end").

The percentages reflect the percentage reduction in the number of drivers exceeding the speed limit when comparing subsequent speed studies with the initial "before" speed count.

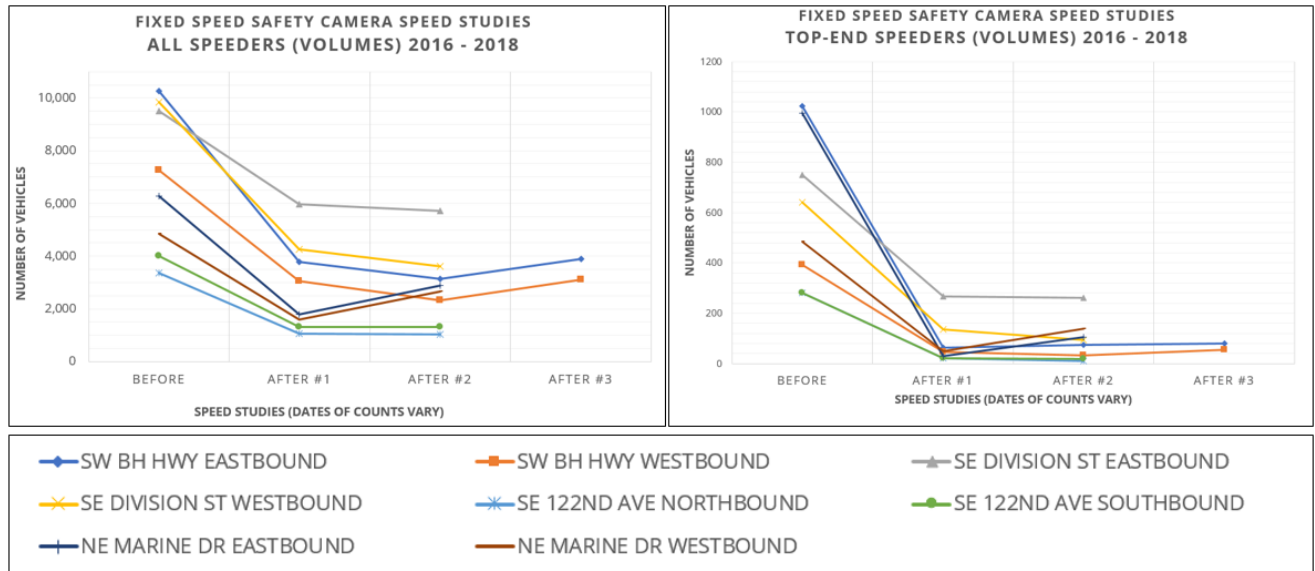


Figure 3. Reduction in volumes of speeders.

When comparing subsequent speed studies with the initial “before” speed count, all locations demonstrate a reduction in the number of drivers speeding at least 1 mph or greater above the speed limit (on left) and a reduction in the number of vehicles travelling greater than 10 mph when comparing subsequent speed studies with the initial “before” speed count (on right).

Before and after speed studies (2016-2018, varies)			85th percentile speed (mph)			
LOCATION	DIRECTION ENFORCED	Posted Speed	BEFORE	AFTER #1	AFTER #2	AFTER #3
SW Beaverton-Hillsdale Highway	Eastbound	40 mph	48	42	42	42
	Westbound		46	42	41	42
SE Division Street	Eastbound	Before: 35 mph	42	34	35	
	Westbound	After: 30 mph	41	32	32	
SE 122nd Avenue	Northbound	35 mph	42	36	36	
	Southbound		41	36	36	
NE Marine Drive	Eastbound	Before: 40 mph After #1: 40 mph After #2: 35 mph	50	42	39	
	Westbound	45 mph	53	46	48	

Table 3. The speed studies surrounding the fixed speed camera systems show a reduction in the 85th percentile of speeds.

Demonstrating a reduction in speed is key. Photo enforcement of speeds supplements a context-sensitive approach that emphasizes crash history and the presence of people walking and bicycling.

Public acceptance

Survey

PBOT solicited consultant DHM Research¹⁴ to conduct a telephone survey to, in part, measure the acceptance of photo enforcement of speeding. From December 11-14, 2018, DHM Research conducted a 12-minute telephone survey of 400 residents¹⁵ in the City of Portland. Of those surveyed, the survey¹⁶ outcome reports:

- Two-thirds are familiar with photo radar. A majority are aware of fixed speed. However, more Portlanders are far more familiar with the City programs that started during the late 90s: red-light cameras and mobile speed vans.
- Three-quarters of Portlanders support using fixed speed safety cameras on streets with high crash rates. Of those, people of all income levels support the use of fixed speed safety cameras. Support, however, is lowest among residents with the highest incomes.
- Those who support the use of fixed speed safety cameras believe they are reliable, unbiased, and help reduce speeding and crashes.

Portlanders surveyed think that speed laws are either adequately enforced or should be enforced more. Although they are less certain about whether PBOT should use fixed speed safety cameras more (or less), an overwhelming number support the use of fixed speed safety cameras on streets with high crash rates.

General perceptions of speeding and traffic safety

Nearly all residents surveyed agree that speeding is unsafe and increases the risk of crashes. Of the 89% who agreed that speeding is unsafe, 66% strongly agree. When asked about enforcing the speeding laws as an effective mechanism to reduce speed, 76% agreed with this statement; and 71% agreed that reducing speeds is an effective way to improve

¹⁴ DHM Research project manager, Anne Buzzini, and DHM research associate, Eddie Szamborski, led this research effort via Task Work Order 31001120-2 (flexible services contract with Davis, Hibbitts and Midghall, Inc.). Special thanks to the Portlanders who took the time to anonymously participate in this telephone survey.

¹⁵ The sample size of 400 is a sufficient sample size to assess resident opinions generally and to review findings by multiple subgroups, including age, gender, and area of the city. The margin of error for this survey is +/- 4.9%. To help supplement the telephone survey, PBOT will conduct an on-line survey later in 2019 to expand community feedback.

¹⁶ The final report, *PBOT Speeding Reduction Survey* (DHM Research, December 2018) and supporting survey documents and data are available either on the PBOT website or by request.



traffic safety. Figure (4) shows the extent to which respondents agreed with the statements that speeding is unsafe, that enforcing laws can reduce speeding, and that speed reduction as a way to improve traffic safety.

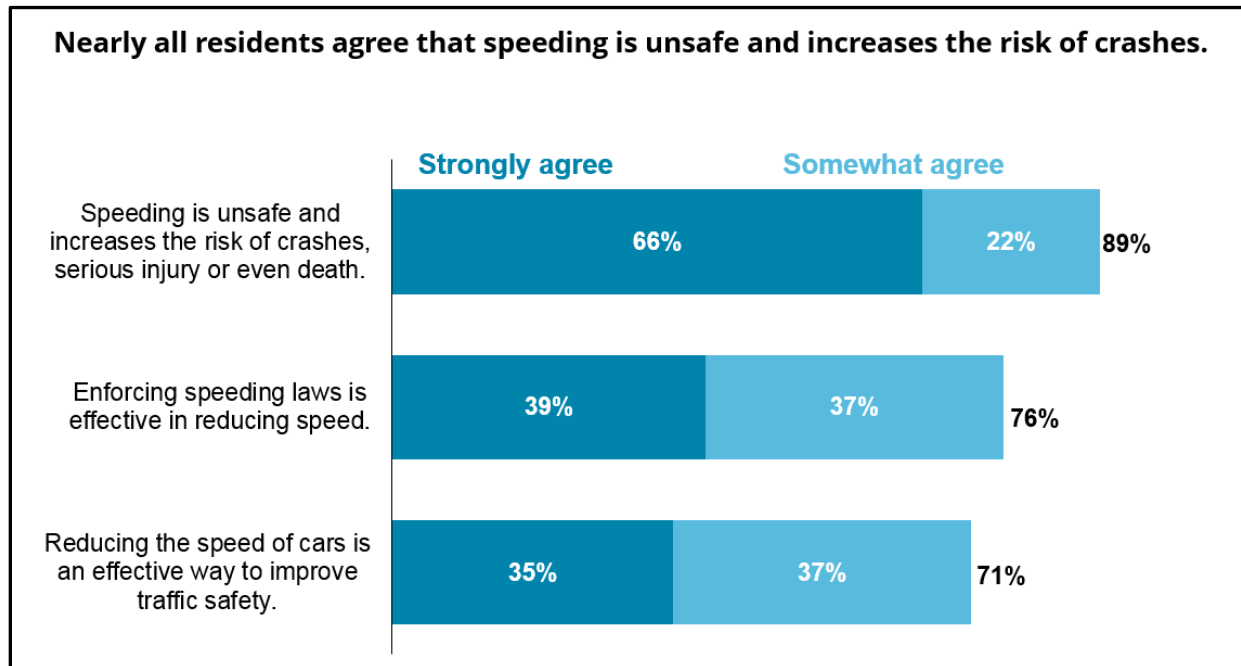


Figure 4. Nearly all residents surveyed agree that speeding is unsafe and increases the risk of crashes. (PBOT Speeding Reduction Survey, DHM Research, December 2018)

When asked about driving a “few miles faster”, Portlanders were more likely to agree than disagree that driving a few miles faster than the speed limit does not have a “big impact on traffic safety”. Younger residents and men are more likely to agree. However, residents 65 and older and those who identify living with a disability are more likely to disagree.

Portlanders were also asked whether “enforcing speed limits is more about making money than keeping people safe.” As shown in Figure (5), Portlanders were more likely to disagree that enforcing speed limits is “more about making money than safety.” However, 40% of respondents agree that enforcing speed limits is more about making money instead of safety.

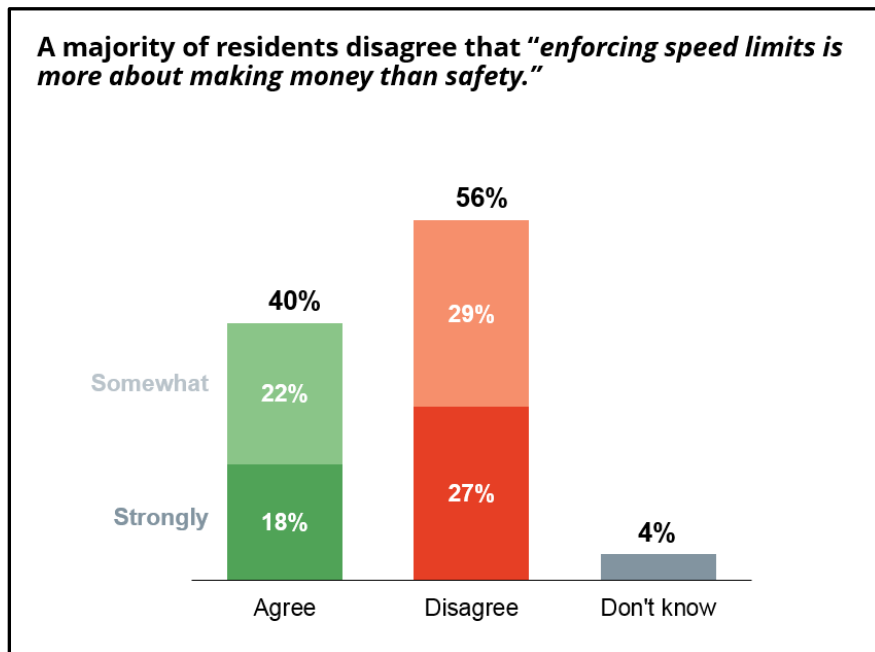


Figure 5. The survey showed that a majority of residents (56%) disagree that “enforcing speed limits is more about making money than safety.” (PBOT Speeding Reduction Survey, DHM Research, December 2018)

Awareness of photo enforcement

People are most aware of red-light cameras, followed by the mobile speed vans and fixed speed safety cameras. Comparing those who drive and those do not typically drive, 88% of drivers and 71% of non-drivers (i.e., use transit, walk, bike) are familiar with the mobile speed vans. In contrast, the difference is more subtle among these two groups when it comes to fixed speed safety cameras: 65% and 58%, respectively. The level of awareness associated with red light running and the mobile speed vans is unsurprising given their inception two decades earlier.

Prior to asking survey participants about photo enforcement, they were asked a general question about traffic enforcement: “Do you think the City of Portland enforces traffic laws too little, about the right amount, or too much?” Most believe that the traffic laws are enforced about the right amount. Residents 55 and older are more likely to say that the City enforces traffic laws too little (45% compared with 35% of those under the age of 55). Few residents, however, think that speeding laws in the city are enforced too much—just 6%.

When asked whether the City uses fixed speed safety cameras to ticket speeding drivers too little, about the right amount, or too much, Portlanders were much more likely to



respond that they did not know. As Figure (6) demonstrates, at least one out of four residents do not know whether the City uses fixed speed safety cameras too little or too much. However, residents in West Portland and the Inner Southeast were more likely to respond “don’t know” compared with residents in East Portland (35% and 32% compared with 19%, respectively).

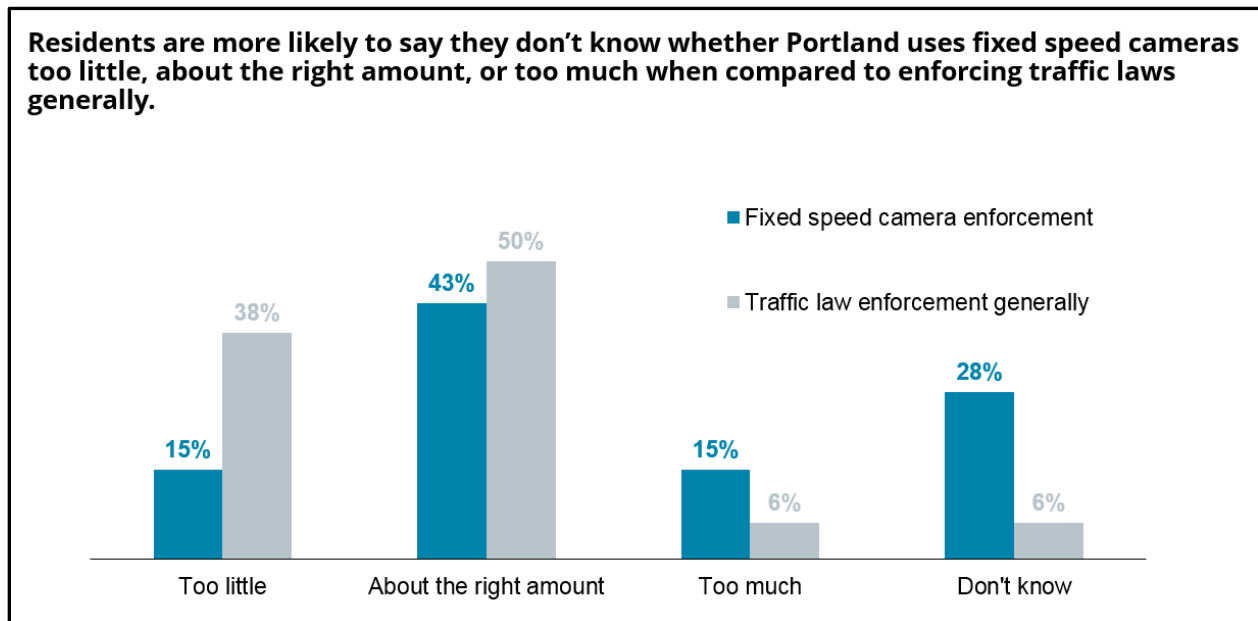


Figure 6. Residents are more likely to say they don’t know whether Portland uses fixed speed cameras too little, about the right amount, or too much when compared to enforcing traffic laws generally. (PBOT Speeding Reduction Survey, DHM Research, December 2018)

Acceptance of photo enforcement

Three-quarters of residents support the fixed speed safety cameras. Portlanders were asked whether they support or oppose using fixed speed safety cameras to ticket drivers who speed on streets with high crash rates. Figure (7) reflects these responses: 44% strongly support the use of fixed speed on high crash streets while only 12% strongly oppose.¹⁷ Compared to other groups, women as well as residents 55 and older strongly support fixed speed safety cameras.

¹⁷ The 2018 telephone survey outcome was in-line with an earlier 2016 on-line survey, “Your Experiences on Portland’s Streets” (located online at <https://www.surveymonkey.com/results/SM-69MNTPQM/>)

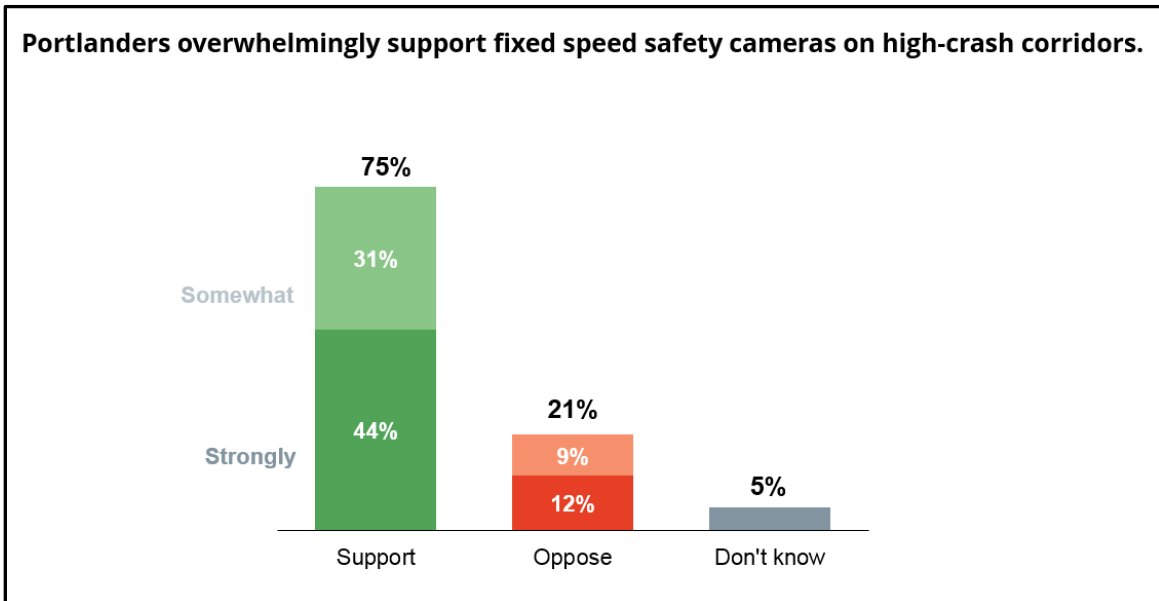


Figure 7. Portlanders overwhelmingly support fixed speed safety cameras streets with high-crash rates. Of the 400 surveyed, 298 Portlanders (or 75%) expressed support for the fixed speed safety cameras. (PBOT Speeding Reduction Survey, DHM Research, December 2018)

Support for fixed speed safety cameras: Why or why not

Of the 400 surveyed, 298 Portlanders (or 75%) expressed support for the fixed speed safety cameras. These Portlanders were then asked why they supported fixed speed safety cameras to enforce speed limits on streets with high crash rates. The open-ended question solicited numerous reasons.¹⁸ The most mentioned are listed here in descending frequency with the most common responses accumulated listed first:

- Reduces speeding
- Increases awareness
- Safety
- Effective
- Reduces crashes
- Reduces reliance on police
- Catches traffic violators

¹⁸ The reasons listed here to this open-ended query are among many more that can be found in the “verbatim file” as part of the *PBOT Speed Reduction Survey*, DHM Research (December 2018). This data may be available either on the PBOT website or by request.

Examples of comments shared by those who responded as supportive:

- “Anything that can be done to reduce speed would be worthwhile.”
- “If you can reduce speeding it makes the streets safer.”
- “We have a lot of kids running around; having fixed speed safety cameras can bring the accidental rate down.”
- “I do not want people speeding on my street.”
- “There was a fatal accident...so anything to do to stop speeding, anything that controls that, I'm for it.”
- “It's the right thing to do. I mean if you're speeding, it's hazardous. There's a speed limit for a reason, you should follow it.”
- “You shouldn't be speeding regardless if there's a cop there or not.”

Portlanders who expressed opposition to using fixed speed safety cameras to enforce speed limits offered the following reasons:

- “I totally disagree with photo enforcement. I think there's a certain amount of shame when a cop pulls you over. We need to be shamed in society in order to behave.”
- “I've gotten a ticket and they are sneaky. They make you just not go that way and use other streets.”
- “Because they malfunction. They should give out more warnings; it's just a money maker.”
- “I don't think it's fair. There are reasons for everything. A camera can't explain that. When you go to court, they don't want to hear you.”
- “It would be much less expensive for a van to be parked there.”¹⁹

Fairness

Survey participants were asked about the fairness of enforcing traffic laws. One question focused on enforcement by a law enforcement officer issuing tickets; and a second question focused on the use of photo enforcement of the traffic laws.

Overall, as illustrated in Figure (8), over 40% of Portlanders surveyed felt that the traditional enforcement and photo enforcement are fair.²⁰ Those who answered a “1” or “2” (i.e., very

¹⁹ Ibid.

²⁰ The survey results show no notable differences among race and ethnicity between people of color and white residents with respect to the fairness of these two methods. However, people of color were analyzed together, and that some groups may hold different opinions not represented in the telephone survey research. As stated in the DHM survey report, this is a limitation of the sample size and the representation of racial and ethnic groups in the City of Portland; these results should not



fair or fair) or, alternatively, a “4” or “5” (i.e., unfair or very unfair) about photo enforcement of traffic laws were provided an opportunity to share why.²¹ Responses such as “not accurate, reliable” and “officers are more accountable” emerged among the most mentioned phrases as to why photo enforcement is unfair. However, “unbiased” or “fair” emerged as the most mentioned reason as to why photo enforcement is viewed as fair.

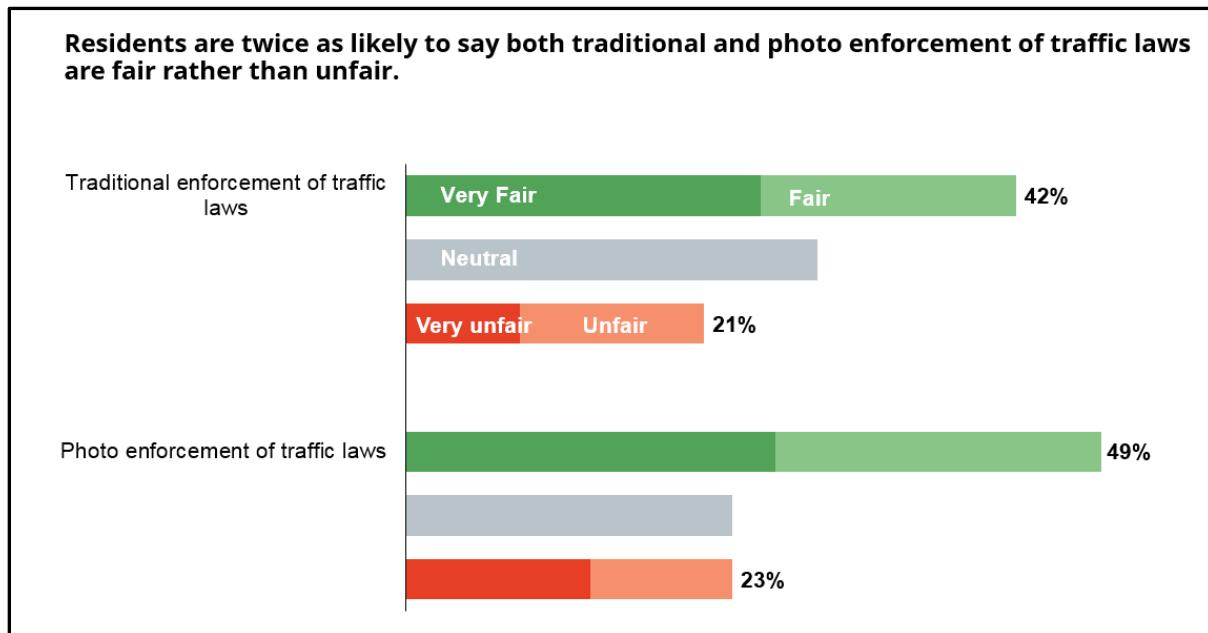


Figure 8. Survey question about fairness of traditional and photo enforcement. (PBOT Speeding Reduction Survey, DHM Research, December 2018)

Enforcement of the traffic laws is viewed as fair in Portland. Of those ranking a “3” (neutral), 29% rated traditional enforcement a “3” and 23% rated photo enforcement as a “3”. As to rating a “4” or “5” (unfair and very unfair), 21% felt this way about traditional law enforcement while 23% felt that way about photo enforcement. As this graph shows, however, 49% feel that photo enforcement of traffic laws is fair.

In general, the survey results trended positively for photo enforcement of speeds on the high crash network. The City’s Vision Zero Action Plan aims to eliminate deaths and serious injuries on Portland streets in part by reducing the risks that speeding poses to all road users on the City’s high crash network. PBOT will continue to analyze the telephone survey results and monitor public acceptance through the release of future online surveys.

be used to invalidate personal experiences. (PBOT Speeding Reduction Survey, DHM Research, December 2018)

²¹ The survey’s “verbatim file” captures the reasons in response to this open-ended survey question. (PBOT Speeding Reduction Survey, DHM Research, December 2018) This data may be available either on the PBOT website or by request.

Other outreach

Prior to operation of the NE Marine Drive cameras, PBOT staff provided an update to the Portland Freight Committee in May 2017 and the Oregon Trucking Association's Safety Roundtable in December 2017. Property owners adjacent to the cameras and speed reader boards were notified by mail. Staff e-mailed neighborhood associations in the area as well the Columbia Business Association. Staff mailed 16,300 postcards, as seen in Figure (9), to NE Marine Drive residences and businesses;²² and staff conducted face-to-face engagements with numerous businesses in the surrounding areas.

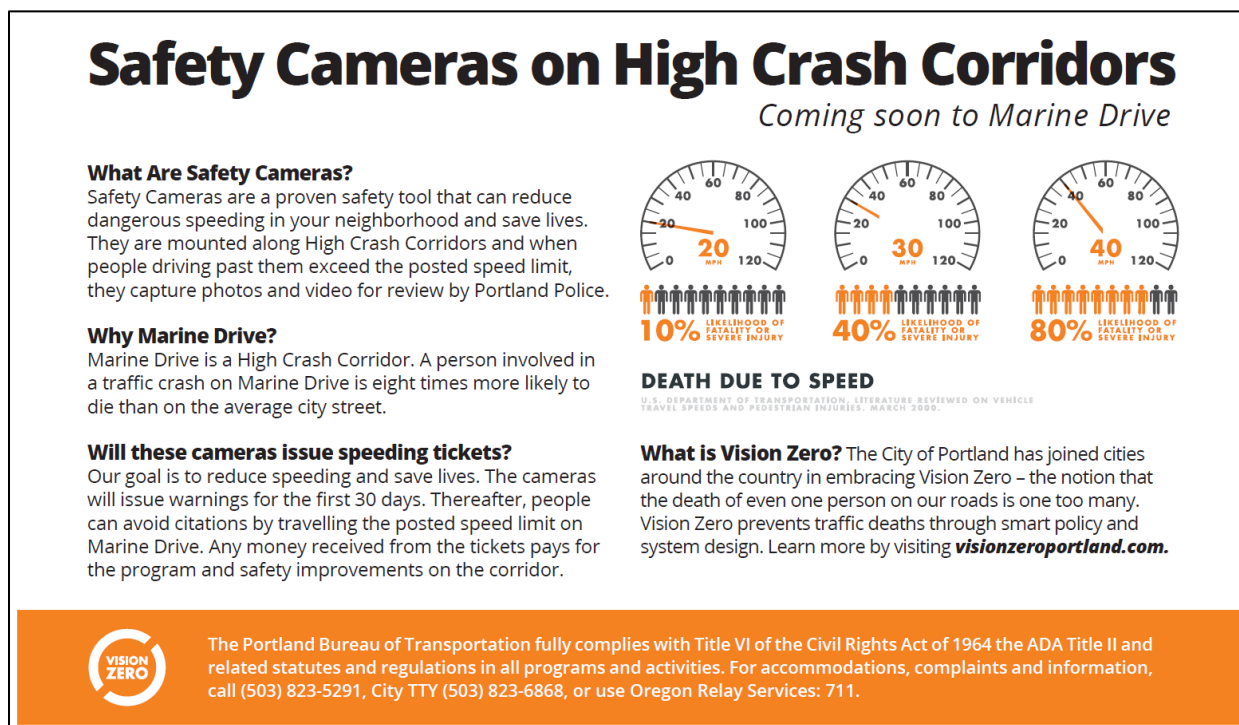


Figure 9. Postcard mailed in advance of NE Marine Drive camera activation.

Illustration of the postcard mailed out to 16,300 businesses and residences near each of the NE Marine Drive fixed speed safety cameras.

²² The postcard mailings may have reached an estimated 1,937 businesses and 14,312 residences.

PBOT safety staff also tabled events throughout the year to support Vision Zero messaging. Examples of 2018 Vision Zero tabling events include:

- Portland Community College NE Campus Bike Fair (May 2)
- Legacy Emanuel Field, N Williams + Vancouver on N Graham (June 16)
- Unthank Park (August 18)
- Festival of Nations PBOT Safety Talk (September 16)
- Neighborhood Association meeting at Ron Russell Middle School (November 5)
- World Day of Remembrance event at Portland Community College (PCC) SE Campus (November 15)
- World Day of Remembrance event with Families for Safe Streets, The Street Trust, and Legacy (November 18)

PBOT and PPB staff shared information about the City's automated enforcement programs during the following venues:

- Portland Public School (PPS) bus driver training event (April 13, 2018);
- East Portland Neighborhood Association Land Use and Transportation Committee (October 10, 2018); and
- Pedestrian Advisory Committee (October 16, 2018).

NE Marine Drive News Releases

The PBOT public information office (PIO) published press releases and shared posts on social media. Media or social articles released by PBOT PIO include:

- Installation of the Fixed speed safety cameras planned along NE Marine Drive... has started...(Facebook post released on January 29, 2018, updated February 1, 2018)²³
- *News Release: Speed Safety Cameras on NE Marine Drive High Crash Corridor start issuing warnings on Tuesday* (February 19, 2018)²⁴
- *News Release: Speed Safety Cameras on NE Marine Drive to start issuing tickets on Thursday* (March 21, 2018)²⁵
- *News Release: PBOT to reduce speed limit on NE Marine Drive high crash corridor, between I-5 and NE 33rd Drive - Eastbound safety cameras near 33rd Drive to issue warnings for two weeks* (Sept. 24, 2018)²⁶

²³ <https://business.facebook.com/PBOTInfo/posts/1603599406382828>

²⁴ <https://content.govdelivery.com/accounts/ORPORTLAND/bulletins/1db453d>

²⁵ <https://content.govdelivery.com/accounts/ORPORTLAND/bulletins/1e3eed5> or <https://www.portlandoregon.gov/transportation/article/677527>

²⁶ <https://www.portlandoregon.gov/transportation/article/699334?archive=2018-10>

Administration Process

PBOT appreciates the positive working relationship among its professional partners, PPB and Multnomah County Circuit Court (“Court”), to holistically administer the fixed photo radar system. The vendor, City staff and Courts play important roles striving to ensure quality assurance, objectivity and timely processing.

PBOT, PPB, and Court staff meet quarterly and continue to collaborate as outlined in its Fixed Speed Safety Camera MOU to best meet the increase in citation volume stemming from the new Fixed Speed Safety Camera program.

The Court, PPB, and photo radar vendor, Conduent, aided PBOT when it conducted a third-party review of photo enforcement to identify opportunities for improvement. The resulting research and observations made during the review will aid the City in developing photo enforcement best practices.

This final section provides an overview of the administrative framework, violation processing, and program costs.

Traffic safety class option for photo radar violations

The Portland Police Bureau began to offer a traffic safety class option in September 2016 for red light running photo enforcement violations and photo radar speeding violations. The class option²⁷ expanded and incorporated fixed speed safety camera speeding violations starting July 2018. The traffic safety class option for photo enforcement violators is available to those who do not have a prior red light running or speeding violation and have not previously attended the photo enforcement traffic safety class. The per person class registration fee varies depending on the type of moving violation (but is typically less than the presumptive fine²⁸).

²⁷ If an eligible driver chooses instead to enroll in the traffic safety class, successful completion of the class must be done within a required timeline (typically requiring attendance within 45 days of the violation date) to allow for the driver’s citation number to be submitted back to the Court and dismissed. Thus, if the eligible driver completes the class in a timely manner, the conviction is waived (including the violation’s presumptive fine).

²⁸ The typical fine for speeding is \$170. Speeding 11-20 mph over the speed limit is a “Class C” violation. A “Class C” violation has a presumptive fine of \$165 plus a surcharge of \$5.00; a minimum fine of \$85 (plus \$5.00 surcharge); and a maximum fine (individuals) of \$500 (plus a \$5.00 surcharge). Schedule of fines on violations can be found at <http://www.courts.oregon.gov/Pages/fees.aspx>.



Violation processing

The administrative process of fixed photo radar enforcement includes citation processing and issuance, delivery, payment, and adjudication. The vendor, Conduent, captures and processes the violations through a multi-step process that can take several days. After retrieving the digital data of each business day, the vendor ensures that the image and correlating data meet quality control standards and criteria. After screening, a request is sent to the Law Enforcement Telecommunication System (NLETS) and the Oregon Department of Motor Vehicles (DMV) if a license plate can be identified (front and/or rear license plate). In return, the vendor receives the registered owner and vehicle information.

Review criteria includes, but is not necessarily limited to, gender match, clarity of plate, glare on windshield, car obstruction, vehicle match failure or obstruction of either vehicle or driver. Evidence of violations that do not withstand this test do not result in citation issuance. Upon approval by law enforcement, the violation is printed and mailed. Table (4) shows the number of warnings mailed during the warning periods. Table (5) shows the number of violations mailed since 2016.

WARNINGS			
FIXED SPEED SAFETY CAMERA			
2016			
August 25 - September 24	SW Beaverton Hillsdale Highway	Eastbound	895
		Westbound	345
		Total warnings	1240
2017			
March 6 - April 4	SE 122nd Avenue	Northbound	413
		Southbound	517
		Total warnings	930
	SE Division Street	Eastbound	2571
		Westbound	2687
		Total warnings	5258
2018			
February 20 - March 21	NE Marine Drive	Eastbound	448
		Westbound	373
		Total warnings	821
September 25 - October 9	NE Marine Drive	Eastbound	408
		Total warnings	408

Table 4. Warning letters mailed (2016-2018) (Data source: Conduent)



Fixed Speed Violations Mailed (by year)						
2016				BH Hwy	Total	
September 24 - 30				289	289	
October 1 - 31				1109	1109	
November 1 - 30				993	993	
December 1- 31				616	616	
2016 Total					3007	
2017		122nd	Division	BH Hwy	Total	
January 1 - 31				605	605	
February 1 - 28				865	865	
March 1 - 31				1105	1105	
April 1 - 30		701	3659	842	5202	
May 1 - 31		726	4108	127	4961	
June 1 - 30		571	3456	151	4178	
July 1 - 31		669	4074	788	5531	
August 1 - 31		620	3702	1325	5647	
September 1 - 30		516	2754	899	4169	
October 1 - 31		409	2640	740	3789	
November 1 - 30		326	2096	765	3187	
December 1- 31		330	1989	683	3002	
2017 Total					42241	
2018		Marine	122nd	Division	BH Hwy	Total
January 1- 31			292	1847	603	2742
February 1 - 28			236	1567	612	2415
March 1 - 31	218	263	1964	862	3307	
April 1 - 30	607	298	1864	827	3596	
May 1 - 31	680	309	2103	892	3984	
June 1 - 30	670	341	2297	976	4284	
July 1 - 31	688	354	2672	987	4701	
August 1 - 31	663	345	2414	886	4308	
September 1- 30	497	266	2025	677	3465	
October 1 - 31	717	221	1508	628	3074	
November 1 - 30	840	235	1590	702	3367	
December 1 - 31	202	201	1196	621	2220	
2018 Total					41463	

Table 5. Fixed speed safety camera speeding violations mailed. (Data source: Conduent)

Weather conditions, equipment repair, and road construction projects may reduce the number of speeding events captured by photo radar. Speeding violations are reviewed to meet quality control standards and criteria. After law enforcement review and approval, violations are mailed.



The registered owner has 60 days to respond to a photo radar citation and is afforded the same rights as any defendant with a traffic violation. The citation is processed by the Multnomah County Circuit Court which is part of the Oregon court system. As such, the registered owner who has received a citation has several options to dispose the citation:

1. Payment
 - a. By mail,
 - b. Over the counter, or
 - c. Online;
2. Request for trial, and subsequent dismissal;
3. Request for trial, and subsequent conviction;
4. Violation Bureau Reduction over the counter (administrative reductions administered by the Clerk);
5. Certificate of Innocence (private party); or
6. Affidavit of Non-Liability (government, business).

If the registered owner was not driving the vehicle when the violation occurred, the owner may file a Certificate of Innocence (a government agency or business may file an Affidavit of Non-liability) with the Court. Upon receipt of a properly completed Certificate of Innocence, the Court dismisses the citation, but a Portland police officer subsequently reviews the Certificates of Innocence for accuracy. The Affidavits of Non-liability are also dismissed by the Court. However, the speeding violation associated with the Affidavit of Non-liability is subsequently issued to the driver identified in the affidavit.

When law enforcement receives the Certificates of Innocence and receives a certificate refuting fault, PPB looks at the violation photo and compares it to the Oregon Department of Motor Vehicles (DMV) driver license photo of the registered owner. The officer's decision is based on comparing photos. If it appears the driver in the violation is one of the registered owners, PPB will reissue the citation. When there is any doubt pertaining to whether a driver is the registered owner, or issues of clarity persist, the reviewing officer will dismiss the ticket.

The following section, Fixed Speed Filings and Dispositions, discloses how the fixed speed cases were disposed in Court – how they were paid or, if dismissed, for what reason.



Fixed Speed Filings and Dispositions

Cases Filed

In 2017, there were a total of 86,249 photo enforcement cases filed in Multnomah County Circuit Court.²⁹ Of those, fixed speed comprised 41,661 (or 48%) of the cases. Photo radar (i.e., mobile speed van) amounted to 35,645 (or 40%) cases filed and photo red light comprised 9,943 (or 12%) of cases filed in 2017. Figure (10) illustrates the breakdown of the photo enforcement cases filed in 2017.

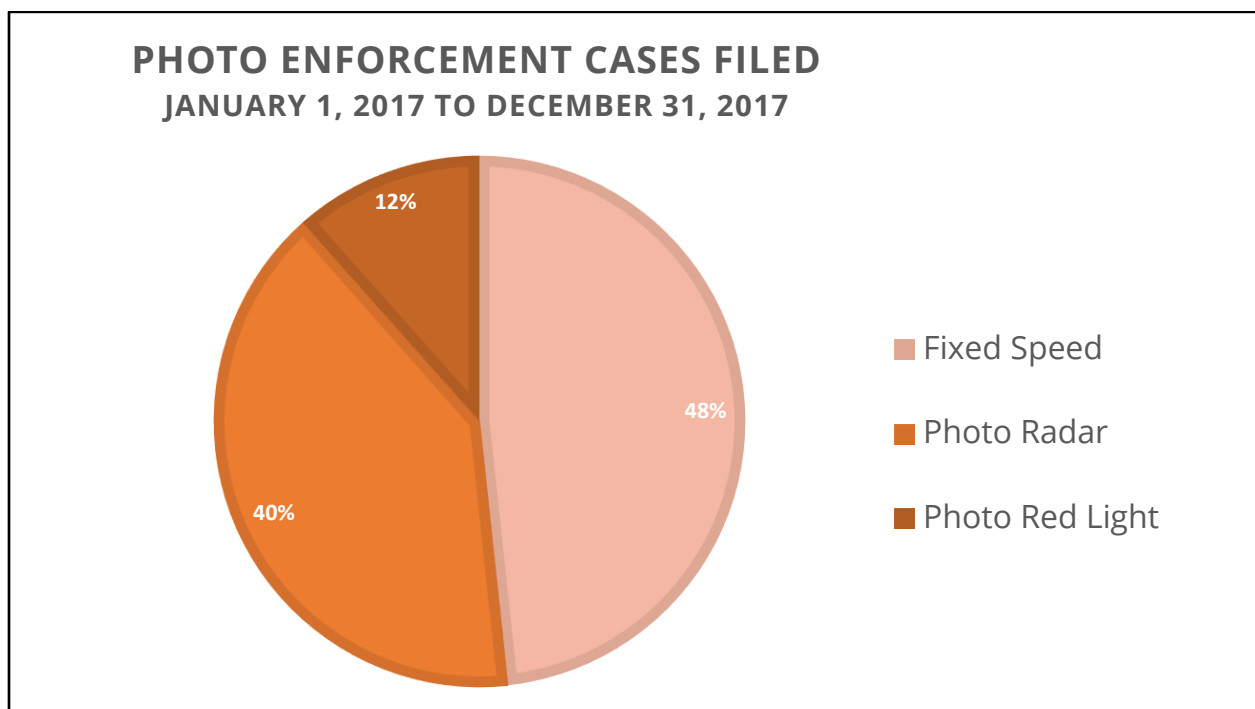


Figure 10. All photo enforcement cases filed in 2017. (Data source: Multnomah County Circuit Court)

Fixed speed comprised the most photo enforcement cases filed in Multnomah County Circuit Court during 2017. Of the total 86,249 cases filed, 41,661 (or 48%) were fixed speed. This was followed by photo radar (i.e., mobile speed van) and photo red light (40%, 12%).

²⁹ Photo enforcement filings and dispositions (2017) data was made available upon request and released by the Multnomah County Circuit Court on June 13, 2018. Court data for 2018 was not available during the writing of this report.

Cases by disposition type

Of the 41,661 fixed speed cases filed, a majority were convicted and a third were dismissed. Figure (11) illustrates the fixed speed cases categorized by disposition type. Most of the fixed speed cases were disposed of as follows:

- “Failure to appear” - 9,153 cases (22% of fixed speed cases filed) were convicted due to a failure to appear (e.g., failing to call, pay online, or come to court to take care of the case results in a default conviction).
- “Violation judge” - Those who appeared for trial or wrote a letter to the court and resulted in a conviction by a judge³⁰ comprised 3,416 cases (8.2%).
- “Convicted” - 1,984 (or 4.8%) cases which were paid in full by mailing a check to the court.
- “Convicted- ePay” - 4,458 (or 10.7%) cases for which the fine was paid in full on-line.
- “Convicted-Violation Bureau” - 9,616 cases (or 23% of fixed speed cases filed) is entered by court staff when a defendant appears at the counter (or over the phone) and is eligible for a reduction based on the Violation Bureau Schedule and one’s previous driving record.
- “Dismissals” – Dismissals amounted to 12,717 (or 31%) of fixed speed cases. The next section explains the reasons.
- “Other” - consists of "acquitted", "deferred" and "no disposition". For example, 297 (0.7%) cases had no final resolution in 2017.

³⁰ There are two scenarios in which a defendant may have communicated with a judge: (1) appeared for trial or (2) wrote a letter to the court. To clarify, it is possible that a defendant may have received a reduced fine despite the conviction.



FIXED SPEED CASES BY DISPOSITION TYPE

JANUARY 1, 2017 TO DECEMBER 31, 2017

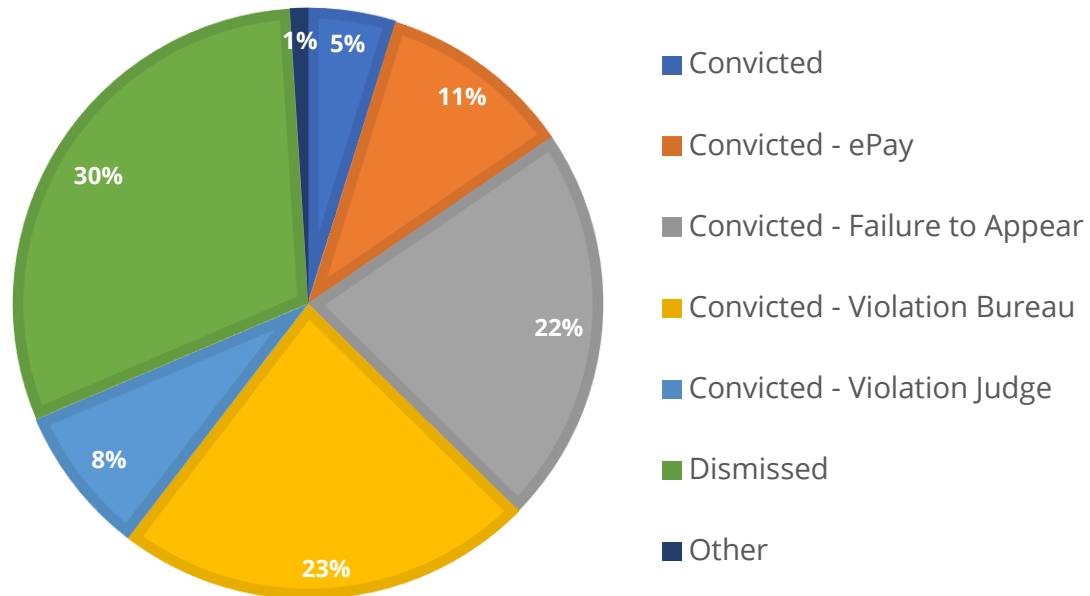


Figure 11. Fixed speed cases by disposition type. (Data source: Multnomah County Circuit Court)

Disposition of fixed speed cases as a percentage of all fixed speed cases filed with the Multnomah County Circuit Court.

Dismissals

Of the 41,661 fixed speed cases filed in 2017, 30% (or 12,717) of the fixed speed cases were dismissed. There are myriad of reasons why a case is dismissed.

Certificate of Innocence (COI) and Affidavit of Non-liability (AFNL) constitute 79% of the dismissal rate. COIs amounted to 8,175 fixed speed cases (or 64% of the fixed speed dismissal rate); and AFNLs made up 1,935 of the fixed speed cases (or 15% of the fixed speed dismissal rate) in 2017. Those cases that are undeliverable due to a lack of a valid address are dismissed. The 1,600 undeliverable fixed speed cases amounted to 13% of the dismissed cases. 303 fixed speed cases (2%) were dismissed during trial and 640 fixed speed cases (5%) were dismissed for other reasons (e.g., the issuing agency may request dismissal with the Court for any number of reasons). Figure (12) shows the percentage breakdown of the dismissal types.



The traffic safety class³¹ was made available to those eligible drivers with fixed speed violations starting in July 2018. Eligibility depends on whether the driver has already attended the photo radar traffic safety class or received a speeding or red-light running violation within the past three years. Table (6) shows that almost 3,000 eligible drivers who received a fixed speed violation attended the traffic safety class during its initial six months (July to December 2018). Therefore, when 2018 court data is released later in 2019, fixed speed dismissals will also include the reason “class”.

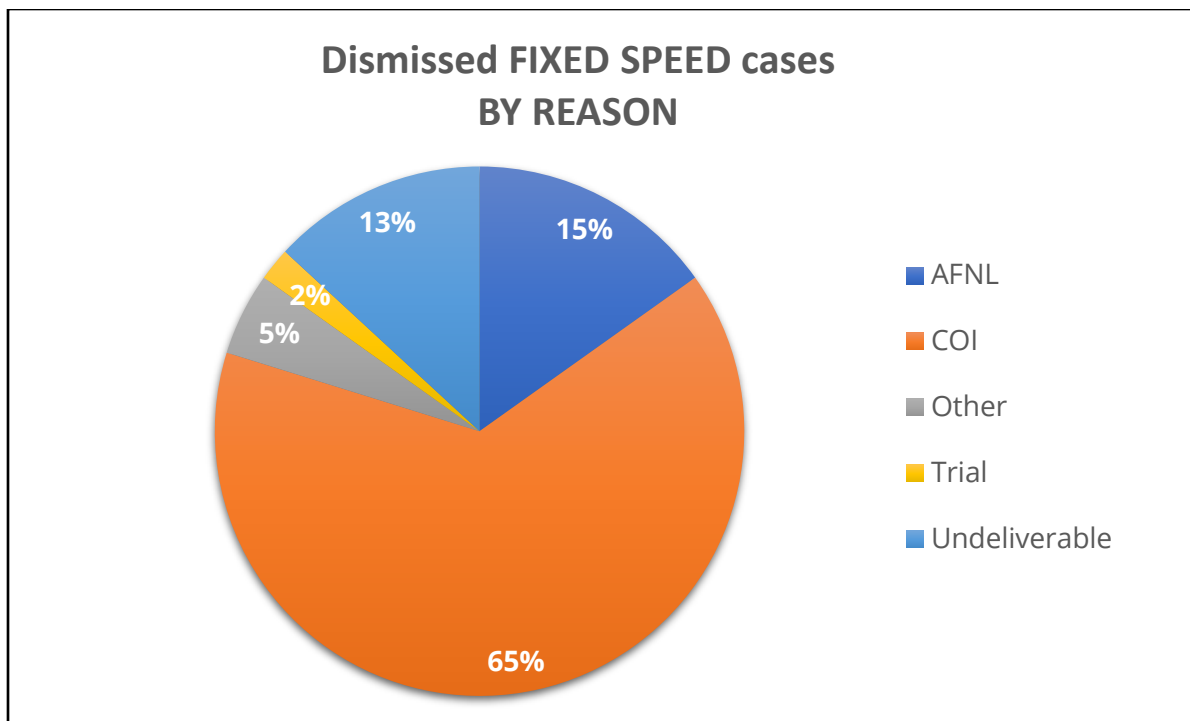


Figure 12. Dismissed fixed speed cases by reason. (Data source: Multnomah County Circuit Court)

A total of 12,717 fixed speed cases were dismissed for the following reasons: 65% as Certificates of Innocence (COI); 15% as Affidavits of Non-liability (AFNL); 13% as undeliverable (e.g., due to a lack of a valid address); 2% as dismissed during trial; and 5% for other reasons (e.g., the issuing agency may request dismissal with the Court for any number of reasons). (Reasons “death” and “class” have been excluded from this graph since they are less than 1%.) (Data source: Multnomah County Circuit Court)

³¹ The Portland Police Bureau began to offer a traffic safety class option in September 2016 for red light running photo enforcement violations and photo radar speeding violations. The class option expanded and incorporated fixed speed safety camera speeding violations starting July 2018. The traffic safety class option for photo enforcement violators is available to those who do not have a prior red light running or speeding violation and have not previously attended the photo enforcement traffic safety class. The per person class registration fee varies depending on the type of moving violation (but is typically less than the presumptive fine).



Traffic Safety Class Option (FS)

July	114
August	473
September	728
October	642
November	482
December	553
FS Total (2018)	2992

Table 6. Traffic safety class attendance by fixed speed eligible (July – December 2018) (Source: PPB)

Starting in July 2018, the traffic safety class option was formally available to those eligible drivers who received a fixed speed violation. Of those fixed speed defendants eligible to take the traffic safety class, almost 3,000 attended from July to December 2018.

Program Costs

Program costs associated with the administration and operation of the fixed speed safety camera program includes vendor fees and City administrative costs. There is a fixed fee (i.e., monthly flat-rate lease of \$3,195 per camera per direction enforced). The variable fee depends on the number of violation fines paid through the court or fees paid for the traffic safety class. The vendor does not collect a variable fee on any violation that is dismissed or otherwise unpaid. Figures (13) and (14) as well as Tables (7) and (8) demonstrate the rate of payment of violations paid. About half of the traffic violations mailed are paid within the first five months. Not all violations will be paid due to dismissals.

The City's administration costs include law enforcement work effort (e.g., review and approval of violations; court appearance), PBOT staff time (e.g., engineer reviews, GIS support), permits (e.g., street opening permit) and other costs (e.g., survey, post card mailings). Table (9) shows program costs and revenue.

However, these administration costs shown in Table (9) do not include the costs experienced by the Court. The Court expends a significant amount of time processing the fixed speed safety camera citations, even when they ultimately result in a dismissal. The court's process includes: monitoring initial court appearance dates to apply default judgments should a defendant not take action on their citation; assisting defendant's at the public counter and over the phone; processing incoming mail including Certificates of



Innocence, Affidavits of Non-Liability, and mail pleas; setting trials and subpoenaing officers and defendants to appear at the time of trial; processing set-over requests filed by both officers and defendants if the trial date conflicts with their schedule; and communicating with the Department of Motor Vehicles to report convictions and remove license sanctions when appropriate. Additionally, if a defendant has completed the traffic safety class, the court must process notifications of compliance and enter a judgment of dismissal on each eligible case. Judicial resources are also required to conduct trials and open court, as well as review requests submitted by mail.

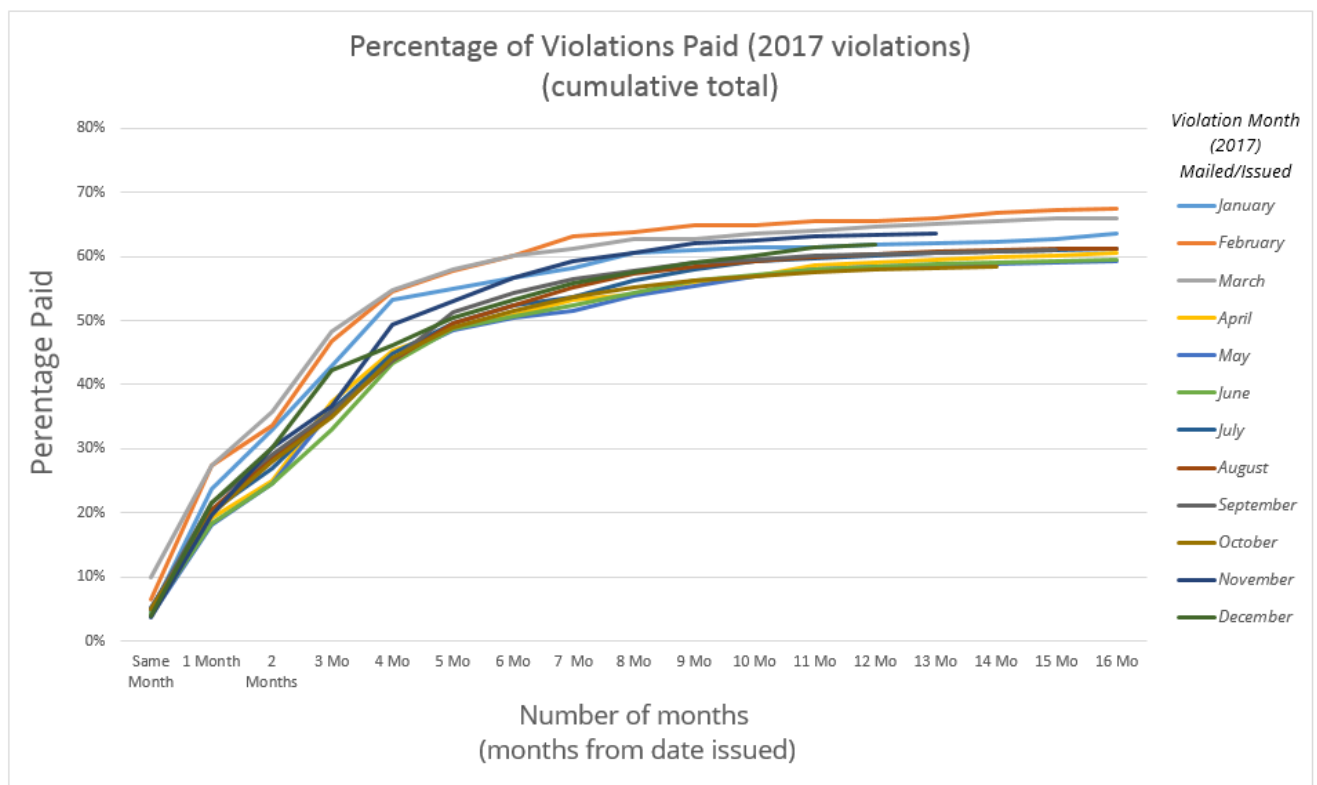


Figure 13. Cumulative total or violations paid (2017 violations) (Data source: Conduent mailing and payment data)



Relationship among the date of speeding violation and its disposition (via some form of payment) with the Courts. Vendor does not invoice a variable fee for citations that are dismissed (e.g., COI, AFNL, judge).		TOTAL CITATIONS PAID (PER MONTHLY INVOICE)															Total PAID per citation month	Total MAILED per citation month	Percentage of monthly mailed that are PAID		
		2016			2017																
OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC							
Citation Month (speeding violation took place)	Two (2) cameras	September-16	61	26	38	29	19	11	6	6	3	3	0	0	1	0	0	203	289	70%	
		October-16	97	207	89	161	64	68	30	19	15	17	8	6	5	3	1	790	1,109	71%	
		November-16		77	191	66	144	76	55	17	11	18	10	1	2	5	0	673	993	68%	
		December-16			2	48	95	37	96	47	32	17	11	5	3	0	2	0	395	616	64%
		January-17				2	28	116	55	61	62	11	10	9	14	3	3	0	374	605	62%
		February-17						56	181	53	114	67	29	20	26	5	10	0	561	865	65%
	Six (6) cameras	March-17							110	193	92	138	72	35	24	13	17	0	694	1,105	63%
		April-17								200	793	307	645	411	180	107	126	49	2,818	5,202	54%
		May-17									197	707	313	565	399	229	96	46	2,552	4,961	51%
		June-17										182	580	266	353	428	229	82	2,120	4,178	51%
		July-17											286	835	365	500	493	258	2,737	5,531	49%
		August-17												281	877	456	378	481	2,473	5,647	44%
		September-17													212	689	322	278	1,501	4,169	36%
		October-17														185	568	305	1,058	3,789	28%
	November-17															120	506	626	3,187	20%	
	December-17																117	117	3,002	4%	
Monthly totals																					
Citations paid per invoice		158	312	368	379	436	597	645	1,332	1,458	1,984	2,445	2,460	2,623	2,372	2,123	19,692	45,248	44%		

Table 7. Percentage of monthly violations mailed paid. (Data source: Conduent mailing and payment data)

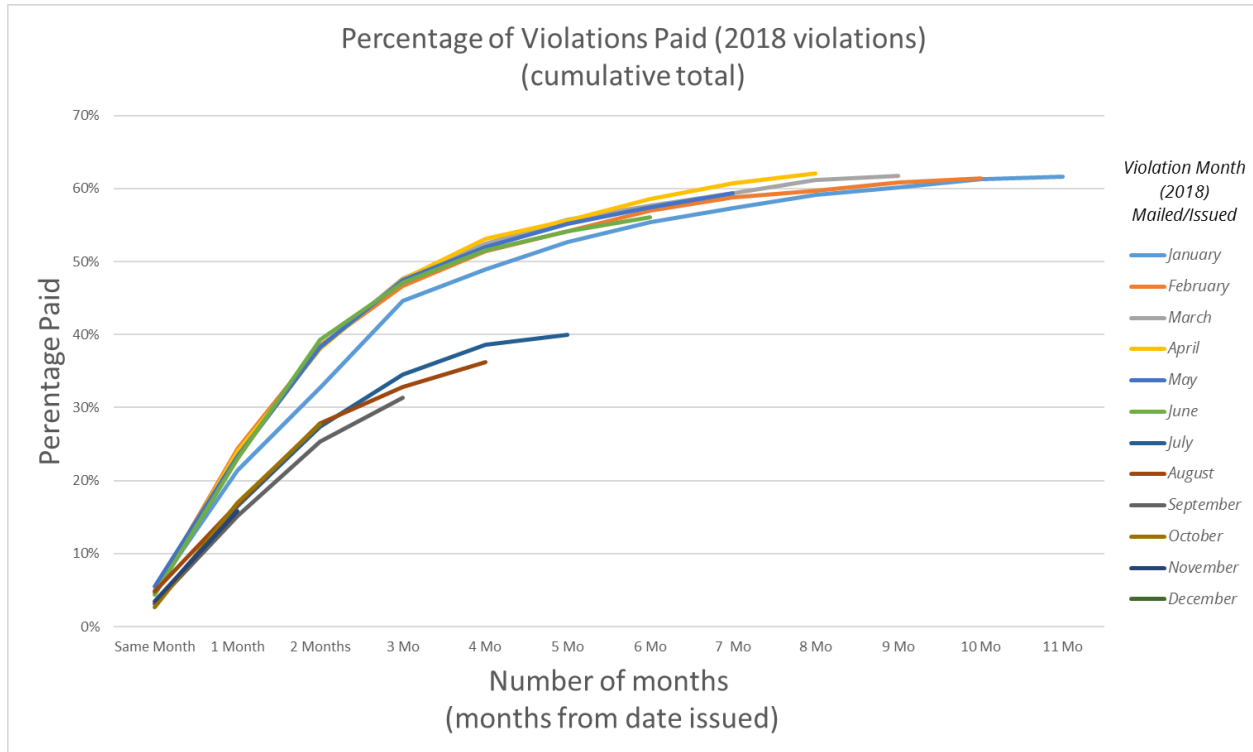


Figure 14. Cumulative total or violations paid (2018 violations) (Data source: Conduent mailing and payment data)



Relationship among the date of speeding violation and its disposition (via some form of payment) with the Courts. Vendor does not invoice a variable fee for citations that are dismissed (e.g., COI, AFNL, judge).		TOTAL CITATIONS PAID (PER MONTHLY INVOICE)												Total PAID per citation month	Total MAILED per citation month	Percentage of monthly mailed that are PAID		
		2018																
		JAN	FEB	MAR	APR	MAY	JUN	JUL*	AUG	SEPT	OCT	NOV	DEC				CLASS	
Citation Month (speeding violation took place)	Two (2) cameras	September-16	0	0	0	1	1	1	0	0	0	0	0	1		207	289	72%
		October-16	1	3	6	1	4	2	0	0	1	0	1	3		812	1,109	73%
		November-16	2	4	5	4	1	1	0	0	0	0	1	1		692	993	70%
		December-16	1	0	2	5	1	0	1	1	1	1	2	0		410	616	67%
		January-17	2	1	2	3	4	1	1	1	2	1	0	0		392	605	65%
		February-17	5	0	5	7	3	2	2	2	0	0	3	1		591	865	68%
	Six (6) cameras	March-17	9	5	7	3	6	5	0	2	3	1	3	0		738	1,105	67%
		April-17	99	42	88	27	25	19	14	15	14	7	16	6		3,190	5,202	61%
		May-17	123	74	73	49	25	16	10	12	7	11	10	10		2,972	4,961	60%
		June-17	72	74	81	41	36	15	19	12	10	3	4	4		2,491	4,178	60%
		July-17	163	72	143	93	71	24	25	17	20	13	12	4		3,394	5,531	61%
		August-17	322	159	165	115	67	48	39	19	28	7	14	6		3,462	5,647	61%
		September-17	334	313	134	88	56	51	23	20	10	10	14	4		2,558	4,169	61%
		October-17	269	344	181	96	86	56	38	27	22	17	10	6		2,210	3,789	58%
		November-17	334	211	404	113	116	86	42	43	19	19	6	8		2,027	3,187	64%
		December-17	530	258	363	119	130	84	73	51	50	33	35	16		1,859	3,002	62%
		January-18	134	451	311	329	117	102	76	51	50	29	29	12		1,691	2,742	62%
	Eight (8) cameras	February-18		117	471	341	199	113	67	69	44	20	28	15		1,484	2,415	61%
		March-18			151	616	497	312	160	106	65	55	61	19		2,042	3,307	62%
		April-18				170	691	509	339	201	90	105	79	48		2,232	3,596	62%
		May-18					221	707	598	365	182	126	87	78		2,364	3,984	59%
		June-18						186	798	698	334	192	110	84		2,402	4,284	56%
		July-18							147	629	510	338	189	67	114	1,994	4,701	42%
		August-18								206	517	478	213	145	473	2,032	4,308	47%
		September-18									109	417	351	208	728	1,813	3,465	52%
		October-18										82	440	331	642	1,495	3,074	49%
		November-18											117	415	482	1,014	3,367	30%
		Dec-18												91	553	644	2,220	29%
Monthly totals																		
Citations paid per invoice		2,400	2,128	2,592	2,221	2,357	2,340	2,472	2,547	2,088	1,965	1,835	1,583	2,992	49,212	86,711	57%	

Table 8. Percentage of monthly mailed paid. (Data source: Conduent mailing and payment data)

For example, as of December 2018, 64% of the November 2017 violations were paid. Dismissals are not captured in this table but would explain one of the reasons why a violation mailed may go unpaid.

Most of the fine revenue generated by the cameras and paid through the Court goes to the State of Oregon's General Fund (approximately 70%). The fines are disposed as follows. Section 153.633 (1) states that \$60 (or the amount of the fine if the fine is less than \$60) is initially payable to the state prior to any other distribution of the fine. Section 153.640 (2)(a) further directs that the \$60 (or less) amount be deposited in the Criminal Fine Account. Of the remaining fine amount, Section 153.640(2)(b) and (c) state that 50% is payable to the local government and 50% is payable to the state.

Remaining funds (i.e., the 50% payable to the local government) are used to pay for operation and maintenance of the program. Any additional revenue beyond system costs is



dedicated by statute to traffic safety;³² the City will reinvest in safety projects for all modes on High Crash Corridors such as installation of safety infrastructure, safety education and outreach and evaluation.³³

FIXED SPEED SAFETY CAMERA PROGRAM (January 2017 - December 2018)	AMOUNT (USD)
Costs and Revenue	
Vendor costs (fixed fee; variable fee based on fines paid and class fees)	(-) 1,327,802
Court revenue (fines paid through the Court)	(+) 1,407,059
Traffic Safety Class (class fee collected)	(+) 96,165
Subtotal	(+) 175,422
PPB work effort	(-) 221,947
PBOT work effort	(-) 255,982
Project administration and outreach costs (e.g., copy/print/bind/mail services; translation services; speed studies; program review; survey; permits)	(-) 39,687
Subtotal PBOT program administration costs	(-) 517,616
Program cost total	342,194

Table 9. Cost and revenue of the Fixed Speed Safety Camera Program.

Covering the calendar years of 2017 and 2018, this table shows the cost and revenue of the fixed speed safety camera program that is posted in the City's accounting system.

³² Of those remaining amounts paid, Section 3, Chapter 721 (ORS 2015) states it "may be used only for costs of operating and maintaining fixed photo radar units in urban high crash corridors...and for improving traffic safety for all modes of transportation."

³³ Memorandum of Understanding between the Portland Police Bureau, The Portland Bureau of Transportation, and the Multnomah County Circuit Court Regarding Automated Enforcement Programs in the City of Portland, Exhibit B, Ordinance 187727, p. 5.



Conclusion

Complementing engineering, education and encouragement facets of transportation planning and operations, fixed speed safety cameras are among the safety tools in the City's enforcement toolkit to reduce the risks of speeding in an equitable, data-driven and accountable manner.