

City of Oakland

Surveillance Impact Report – Automated Speed Safety System

A. Description

“Speed safety system” or “system” means a fixed or mobile radar or laser system or any other electronic automated detection equipment to detect a violation of speed laws and utilizes cameras to obtain a clear photograph of a speeding vehicle's rear license plate. These cameras are only triggered by speeding vehicles. They do not record data unless triggered by a speeding vehicle.

B. Purpose

The City of Oakland, Department of Transportation’s (“Department” or “OakDOT”) mission is to envision, plan, build, operate and maintain a transportation system for the City of Oakland, in partnership with local transit providers and other agencies, and to assure safe, equitable, and sustainable access and mobility for residents, businesses and visitors.

The surveillance technology supports the Department's mission and provides important operational value in the following ways:

The surveillance technology functions to efficiently enforce vehicle speed laws. This use supports the Department's mission to achieve zero traffic-related fatalities (, as traffic enforcement is a critical component of the Safe Systems approach of the Safe Oakland Streets (SOS) initiative. Excessive speed is the leading contributor to traffic collisions causing serious injuries and fatalities, and this surveillance technology is proven to reduce vehicle speeding.

The Department shall use the surveillance technology only for the following authorized purposes:

Authorized Use(s):

1. Enforce speed limits on City streets in accordance with California Vehicle Code sections 22425-22434 (Speed Safety System Pilot Program)
2. Analysis of and reporting on speed enforcement, as required under the Speed Safety System Pilot Program

C. Location

The surveillance technology may be deployed in locations throughout Oakland on the city’s high injury network. The surveillance technology will consist of vendor-owned automated speed enforcement cameras with onboard processing. These cameras will be mounted on city-owned poles (unless through prior arrangement with Pacific Gas

and Electric) at up to 18 locations. The cameras will be distributed among all 7 City Council Districts in the City's High-Injury Network. The cameras use cellular communication to transmit data to backend software that provides access to uploaded photographs, radar readings, and license plate information for authorized users. See Appendix 1 for a list of 18 proposed camera locations.

D. Impact

The use of surveillance technology is intended to support and benefit the residents of Oakland while minimizing and mitigating all costs and impacts to potential civil rights and liberties. OakDOT recognizes that the use of Automated Speed Enforcement (ASE) technology raises privacy concerns, which include potential loss of dignity, discrimination, economic loss, loss of autonomy, loss of liberty, physical harm and loss of trust. The technology has several benefits, including: reductions of serious injuries and fatalities due to speed, as proven in hundreds of cities; removing bias from enforcement of traffic violations and limited contact with uniformed police officers; and improving overall public safety on roadways. Additional potential impacts and safeguards are described in the mitigations section below.

E. Mitigations

The Department has considered the potential impacts and has identified the technical, administrative, and physical protections as mitigating measures:

- *Dignity loss*: Technical safeguards make this impact (e.g., embarrassment and emotional distress) unlikely because ASE cameras take photos of vehicle rear license plates; they do not capture images of drivers or vehicle occupants. Occasionally, images may capture people traveling by foot or by bicycle who are near violating vehicles, but these images are incidental and are purged from the ASE system by the vendor.
- *Discrimination*: Technical safeguards make this impact (i.e., unfair or unethical differential treatment of individuals or denial of civil rights) highly unlikely because ASE enforces speed limits equally to all vehicles. Administrative safeguards make this impact minimal because ASE technology is deployed equally in areas throughout the City where cameras are installed. Cameras will be distributed among all seven Council districts on the City's High-Injury Network.
- *Economic Loss*: Technical safeguards make this impact (i.e., identity theft/misidentification) minimal because the ASE system provides no external access to information identifying individuals, including vehicle owners or drivers.
- *Loss of Autonomy*: Technical safeguards make this impact (i.e., loss of control over decisions on how personal information is used or processed) highly unlikely because the ASE system provides no public access to information identifying

individuals, including vehicle owners or drivers. Moreover, since data is processed mostly by the ASE system, there is minimum human interaction.

- *Loss of Liberty:* Administrative safeguards make this impact (i.e., improper exposure to arrest or detainment due to incomplete or inaccurate data) highly unlikely because speed cameras are tested and calibrated annually before issuing violations. Moreover, speed camera violations are civil, not criminal, and have no impact on a person's criminal records or their driving records.
- *Physical Harm:* Technical safeguards make this impact (i.e., physical harm or death) highly unlikely because the ASE system has no access to information identifying individuals through the DMV system.
- *Loss of Trust:* Technical safeguards make this impact (i.e., breach of implicit or explicit expectations or agreements about the processing of data, or failure to meet subjects' expectation of privacy for information collected) minimal because license plate numbers are used to identify vehicles for purposes of speed violations. The Department limits access to the data to only authorized users.

D. Data Types and Sources

Speed cameras authorized under Assembly Bill 645 may only take photographs of rear license plates after being triggered by a vehicle traveling more than 10MPH over the speed limit. The system then compares license plates against DMV records in order to identify the vehicle's owner, and to issue a warning or citation. Speed cameras may also collect information on average vehicle speeds, and/or the number of vehicles traveling more than 10 MPH over the speed limit.

E. Data Security

OakDOT will secure Personally Identifiable Information (PII) against unauthorized or unlawful processing or disclosure; unwarranted access, manipulation or misuse; and accidental loss, destruction, or damage. Surveillance technology data collected and retained by OakDOT will be protected by the safeguards appropriate for its classification level(s) as defined by the National Institute of Standards and Technology (NIST) security framework 800-53, or equivalent requirements from other major cybersecurity frameworks selected by the department.

OakDOT will ensure compliance with these security standards through the following administrative safeguards: OakDOT will secure any PII against unauthorized access, processing, disclosure, and accidental loss, destruction, or damage. ASE data collected and retained by OakDOT will be protected by the safeguards appropriate for its classification level(s).

To protect ASE data from unauthorized access and control, including misuse, OakDOT will, at minimum, apply the following safeguards:

- Authorized users will use login credentials with MFA, if available, and use complex passwords to access the ASE technology.
- All access to and activity in the ASE system will be logged and be audited.

F. Fiscal Cost

The fiscal cost, such as initial purchase, personnel and other ongoing costs, include:

Number of Budgeted FTE (new & existing) & Classification	The following positions will be used for this technology:		
	<u># of employees</u>	<u>Class #</u>	<u>Job Description</u>
	.05	Project Manager II	Director of Parking & Mobility
	.25	Project Manager I	Speed Safety Program Funding Manager
	3	Public Service Representative	Citation processing
	.5	Hearing Officer	Citation administration; adjudication
	Annual Cost		One-Time Cost
Total Salary & Fringe	\$800,000		
Software			
Hardware/Equipment			
Professional Services	\$1,700,000		
Training			
Other			
Total Cost	\$2,500,000		\$450,000

The Department funds its use and maintenance of the surveillance technology through: Measure BB sales tax dollars and potential grant funding source.

Fiscal Benefits

The Department's use of the surveillance technology yields the following business and operations benefits:

Benefit	Description
Time Savings	Helps staff remotely identify speeding violations at multiple locations, improving effectiveness and efficiency of speed enforcement.
Staff Safety	Enforces speed limits without the potential for in-person traffic stops.

Data Quality	Improves accuracy of data related to vehicles speeding over posted speed limits. Provides data to inform policies and regulations and allows for more immediate data to demonstrate the impacts of various traffic control measures on streets over time.
Other	Provides data regarding effectiveness of speed safety cameras, which will inform future statewide policies regarding ASE

G. Third Party Dependence

OakDOT will rely upon third party technology vendors to install and provide maintenance for the ASE system. All data collected or processed by the surveillance technology will be handled and stored by an outside provider or third-party vendor on an ongoing basis. Vendor selection for ASE is not completed yet. The department will ensure that the selected vendor complies with all data access requirements under the state's Speed Safety Pilot Program by adding them to the final agreement.

H. Alternatives

Speed cameras are the predominant technology used for automated speed enforcement. Prior to AB 645, speed cameras were illegal in the state of California. More than 4,000 people die annually on California roadways, with approximately 30% of fatalities attributable to high speed.

I. Track Record of Other Entities

The surveillance technology is currently utilized by other governmental entities for similar purposes, including nearly 200 communities across the United States. Many peer cities use automated speed enforcement technology as a component of a traffic safety or Vision Zero strategy. For example, New York City has used speed cameras for a decade on their high-injury streets. Their speed cameras have been remarkably effective at reducing speeding: it only took 18 weeks after installation to see a 73% reduction in speeding vehicles at camera locations.

The California State Transportation Agency's "Report of Findings: AB 2363 Zero Traffic Fatalities Task Force," issued in January 2020, concluded that international and domestic studies show that speed safety systems are an effective countermeasure to speeding that can deliver meaningful safety improvements, and identified several policy considerations that speed safety system program guidelines could consider, many of which have been incorporated into AB-645.

In a 2017 study, the National Transportation Safety Board (NTSB) analyzed studies of speed safety system programs, and found they offered significant safety improvements in the forms of reduction in mean speeds, reduction in the likelihood of speeding more than 10 miles per hour over the posted speed limit, and reduction in the likelihood that a crash involved a severe injury or fatality. The same study recommended that all states remove obstacles to speed safety system programs to increase the use of this proven approach.

If you have questions about the development of this report, contact Craig Raphael craphael@oaklandca.gov or 510-238-7229 for guidance. Also, all approved Surveillance Impact Reports will be posted on the PAC Website at: <https://www.oaklandca.gov/boards-and-commissions/privacy-advisory-board>

Appendix 1: Proposed list of 18 potential camera locations

Location (Main Street)	Location (Cross Streets)	Speed Limit	85th Percentile Speed	Number of Daily Vehicles >10 MPH Over Posted Limit	% of Daily Vehicles > 10 MPH Over Posted Limit	Additional Reasoning for ASE
MLK Jr. Way	Between 42nd and 43rd	30 MPH	37 MPH	540	7.43%	High observed speeds with two travel lanes in each direction; uncontrolled crosswalks
Claremont Avenue	Between Hillegass Avenue and College Avenue	30 MPH	37 MPH	636	5.8%	Vehicles speeding to and from SR 24; new addition (2024) to High Injury Network
Foothill Blvd	Between Irving and 24th	25 MPH	29 MPH	252	2.87%	Proximity to speed related collisions; uncontrolled crosswalks
Foothill Blvd.	Between 19th and 20th	30 MPH	33 MPH	203	2.8%	Proximity to speed related collisions; uncontrolled crosswalks; proximity to San Antonio Recreation Area
7th St.	Between Adeline St and Linden St	30 MPH	39 MPH	1760	14.6%	Speeding from vehicles traveling to and from freeways; uncontrolled crossings; proximity to As-Salam Mosque
West Grand	Between Chestnut and Linden	30 MPH	39 MPH	1538	11.7%	High observed speeds from vehicles traveling to and from freeways; preschool on block

Location (Main Street)	Location (Cross Streets)	Speed Limit	85th Percentile Speed	Number of Daily Vehicles >10 MPH Over Posted Limit	% of Daily Vehicles > 10 MPH Over Posted Limit	Additional Reasoning for ASE
Broadway	Between 26th and 27th St	20 MPH	27 MPH	1136	9.20%	Concentration of speed related injury collisions; concentration of pedestrians on Broadway commercial corridor
San Pablo Avenue	Between Athens and Sycamore	25 MPH	32 MPH	585	6.72%	Concentration of speed related injury collisions; uncontrolled crosswalks
7th St.	Between Broadway and Franklin Streets	20 MPH	27 MPH	662	5.2%	Concentration of seniors, children, pedestrians in Chinatown
MacArthur Blvd.	Between Green Acre Road and Enos Ave	30 MPH	38 MPH	667	8.0%	High observed speeds from vehicles traveling to and from I-580; long section of MacArthur without a traffic signal
Fruitvale Avenue	Between Galindo Street and Logan Street	25 MPH	30 MPH	458	3.60%	Uncontrolled crosswalks; proximity to schools, churches
International	Between 40th and 41 st	25 MPH	29 MPH	767	4.9%	High observed speeding from vehicles illegally using the transit lane; concentration of speed-related injury collisions; upcoming capital project

Location (Main Street)	Location (Cross Streets)	Speed Limit	85th Percentile Speed	Number of Daily Vehicles >10 MPH Over Posted Limit	% of Daily Vehicles > 10 MPH Over Posted Limit	Additional Reasoning for ASE
Hegenberger Road	Between Spencer and Hawley	40 MPH	57 MPH	10029	43%	Freeway-like segment with four travel lanes in each direction; proximity to speed-related injury collisions
73rd Avenue	Between Fresno and Krause	35 MPH	41 MPH	1514	6.2%	High observed speed from vehicles adjacent to Markham Elementary and Eastmont Transit Center
Bancroft Ave	Between 86th Ave and Auseon Ave	30 MPH	38 MPH	1247	8.10%	Uncontrolled crosswalks; proximity to schools, churches
98th Avenue	Between Blake Drive and Gould Street	30 MPH	37 MPH	1340	6.6%	Proximity to speed related injury collisions; speeding observed from vehicles traveling to and from I-880
98th Avenue	Between Cherry and Birch	30 MPH	34 MPH	469	3.10%	Adjacent to Elmhurst United Middle School; proximity to speed related injury collisions
Bancroft Ave	Between 65th and 66th	30 MPH	34 MPH	266	2.90%	Uncontrolled crosswalks; proximity to schools, churches

Appendix 2: Site selection analysis

OakDOT based its speed camera site selection off the specifications in AB-645. The chart below explains the agency's response to the bill's criteria.

Speed camera site selection

State Law Specification	OakDOT's Response
Cameras shall be located on a high-injury street, a school zone street, or a street with documented speed racing	All cameras will be located on the high-injury network ; several will be adjacent to schools and in locations with speed-related collisions
Cameras cannot be located on state highways, freeways or expressways	All cameras will be located on city-owned streets (excludes freeways and segments of International and San Pablo Blvd owned by Caltrans)
Cameras should be located in areas that are "geographically and socioeconomically diverse"	Camera locations will be spread throughout Oakland , with at least 1 camera per City Council district
To keep a camera location after 18 months, there must be measurable reductions in speeding behavior	Camera locations will be prioritized in locations with vehicle speeds exceeding 10 MPH over the speed limit

Building off state law as specified above, OakDOT initiated its site selection process with the [2024 High Injury Network](#) (HIN), or street segments in Oakland with the highest density of fatal and severe collisions. The HIN is determined based on three separate mode-specific HINs: pedestrian, bicyclist and motor vehicle. Creating separate HINs allows the pedestrian and bicyclist crash networks to be analyzed distinct from the motorist network, which might otherwise dominate the map. For the purposes of speed camera site selection, the agency prioritized camera placement on streets with two or three overlapping modes. As another prioritization factor, OakDOT also identified street segments with high concentrations of serious and fatal injuries with speed as a primary factor.

Following this initial screening, OakDOT collected data at 43 potential locations for speed cameras in the form of 72-hour tube counts. These 43 locations were narrowed down to 18 proposed locations based on the following criteria:

- Number and percentage of daily vehicles traveling greater than 10 MPH over the speed limit
- Proximity to sensitive land uses (i.e. schools, senior centers, parks, commercial districts, uncontrolled crosswalks)
- Geography (i.e. avoiding concentrating too many cameras in one neighborhood as per AB-645 requirements)
- Planned capital projects
- Initial technical review for installation feasibility

Socioeconomic Characteristics of Selected Locations

Throughout the process of identifying potential camera locations, the city's goal was to minimize harm to historically underserved populations, while recognizing that Oakland's High Injury Network is not evenly distributed, with a higher concentration of streets in the flatlands, which are generally less economically resourced than the hills. As shown below, the range of socioeconomic data of the 18 camera locations varies widely. The socioeconomic characteristics of the 18 locations are close to the city as a whole, while trending slightly below average (i.e.; the 18 locations have a slightly higher number of minority households, households in poverty, unemployed households, etc).

However, this data doesn't account for the fact that the demographics of drivers on a given roadway may differ significantly from the demographics of the surrounding neighborhoods. This may be particularly true for many high injury streets in Oakland, where drivers living in more economically advantaged areas often travel through less economically advantaged areas to get to and from freeways. Many arterial streets where cameras are proposed, including San Pablo Avenue, Fruitvale Avenue, 73rd Avenue, 98th Avenue, Hegenberger Road, and MacArthur Boulevard may fit this pattern. While these numbers are difficult to quantify with available data, they likely bring the socioeconomic characteristics of roadway users closer to the Oakland average.

Socioeconomic Characteristics of 18 Camera Locations vs. Oakland averages*

	Minority Households	Households with Higher Education	Households in Poverty	Unemployed Households	No Car Households
Average of 18 Camera Locations	81.8%	34.4%	18.5%	7.5%	17.2%
Range of 18 Camera Locations	31.7% - 97.6%	8.7% - 84.3%	2.9% - 37.3%	2.4% - 13.5%	2.7% - 47.0%
Oakland	71.0%	48.0%	13.0%	6.0%	15.0%

*1/4 mile buffer around camera locations, matched with weighted average of demographic characteristics of 2022 Census block group data, compared to city as a whole

Geographic Characteristics of Selected Locations

While Oakland is made up of seven City Council districts (with one additional member elected at-large) and nine planning areas, the city's High Injury Network (HIN) is not equally distributed among them. Most of the city's HIN, and especially its modal HIN with two or more modes represented, is in Districts 2, 3, 5, 6 and 7. Cameras were initially distributed by Council District, ensuring one camera per district, for a total of 7. The remaining eleven cameras were selected based on the criteria outlined in the summary above, with the primary factor being percentage of vehicles traveling at excessive speeds. The charts below display the number of cameras by Planning Area and Council District.

Planning Area	Number of Cameras
West Oakland	3
North Oakland/Adams Point	3
Downtown	1
Eastlake/Fruitvale	4
Glenview/Redwood Heights	1
Central East Oakland	6
East Oakland Hills	0
North Oakland Hills	0
Coliseum/Airport	0
Total	18

Council District	Number of Cameras
1	2
2	3
3	4
4	1
5	2
6	2
7	4
Total	18

Appendix 3: Community Outreach

The development of AB-645 and prior bills related to automated speed enforcement included extensive public outreach and engagement with the public and stakeholders concerned with traffic violence throughout California. Oakland specific outreach included consultation with the Bicyclist and Pedestrian Advisory Commission, the Privacy Advisory Commission, and various advocacy groups.

During 2024, Oakland staff briefed City Council along with several commissions on the speed camera program including the Bicyclist and Pedestrian Advisory Commission, the Privacy Advisory Commission, the Mayor's Commission on Aging, and the Commission on Persons with Disabilities. City staff also met with several community and advocacy groups including Bike East Bay, Transport Oakland, Trybe, Communities for Care for Lower Prescott, the Anti-Police Terror Project, the Traffic Violence Rapid Response Group, and the West Oakland Environmental Indicators Project. Some of the key themes and feedback that emerged from these sessions included:

- Support for implementation, along with urgency to begin the program as soon as possible
- A desire to expand the pilot program beyond the 18 locations authorized for Oakland by AB-645
- Concerns around obscured license plates, stolen vehicles and people not paying citations
- A preference for engineering projects over speed cameras, with several participants urging the department to pursue both
- Desire to see program data as soon as possible