CITY OF OAKLAND

MEMORANDUM

TO:	Darren Allison, Interim Chief of Police	**FROM:**	Frederick Shavies, Acting Captain, Ceasefire Section
SUBJECT:	Gunshot Location Detection System (ShotSpotter) – 2023 Annual Report	**DATE:**	March 27, 2024

Background

Oakland Municipal Code (OMC) 9.64.040: Surveillance Technology "Oversight following City Council approval" requires that for each approved surveillance technology item, city staff must present a written annual surveillance report for Privacy Advisory Commission (PAC). After review by the Privacy Advisory Commission, city staff shall submit the annual surveillance report to the City Council. The PAC shall recommend to the City Council that:

- The benefits to the community of the surveillance technology outweigh the costs and that civil liberties and civil rights are safeguarded.
- That use of the surveillance technology cease; or
- Propose modifications to the corresponding surveillance use policy that will resolve the concerns.

The PAC recommended adoption of OPD Department General Order (DGO) I-20: "Gunshot Location Detection System" at their October 3, 2019 meeting; the report was presented to the City Council on November 19, 2019 and adopted by the City Council via Resolution No. 87937 C.M.S. DGO I-20 requires that OPD provide an annual report to the Chief of Police, the Privacy Advisory Commission (PAC), and the City Council.

2023 Data Details

A. A description of how the surveillance technology was used, including the type and quantity of data gathered or analyzed by the technology:

From the "Surveillance Impact Use Report for the Gunshot Location Detection System:"

Part 1 – How the System Works: "The GLD system sensors are designed to detect gunshots based on their acoustic signature (e.g., broad-frequency, impulsiveness and loudness). The utilization of multiple sensors at different distances from a gunshot sound allows the system not only to capture the sound but assign a probability that it is a gunshot and triangulate its precise location based on time difference of arrival. If the machine classifier in the "ShotSpotter Cloud" determines it is likely a gunshot based on computer-learning algorithms, the system will pull a short audio snippet from the sensors that detected it and send it to human analysts at the ShotSpotter Incident Review Center at its headquarters in Newark, CA. The analysts perform an auditory and visual assessment of the audio waveform to make a final determination as part of a two-phased classification process. If confirmed as a gunshot, an alert is published containing

information such as street address, number of rounds fired, and a short audio snippet of the gunfire event– all within 60 seconds of the trigger pull (29 seconds on average)."

From Section 2: Proposed Purpose: "The purpose of GLD is to enable OPD to provide a higher level of the service to the community related to shootings. The system detects, locates and alerts officers of virtually all gunshots in a coverage area in less than 60 seconds enabling officers to respond to and investigate gunshots incidents they would not have known about and to respond to them much more rapidly than waiting for a 911 call. Personnel can better respond to gunshot activity and respond to possible armed individuals as well as to possible gunshot victims through this important real-time data."

ShotSpotter technology was used in the following ways/with the following outcomes in 2023:

- *The number of times ShotSpotter technology was requested: ShotSpotter alerted OPD to 8,318 gunshot incidents from January 1 – December 31, 2023. Of those alerts**, 8,318 (99%) were not called in by the community as a 415GS call type (shots fired),** and OPD would not have known about them nor have been able to respond in a timely fashion. This information is based on an analysis of calls within 15 minutes and 1,000 feet of a ShotSpotter alert.*
- *ShotSpotter led police to **199 shooting cases, 29 of which were Homicide and 170 were Assault with a Firearm.** OPD was able to provide and coordinate immediate emergency medical response on these shooting cases; OPD personnel believe that several of these victims survived the shootings specifically because of the quick response and subsequent medical attention. In some instances, OPD and medical response occurred within less than two minutes of the ShotSpotter activation. The ShotSpotter alert was within 10 minutes and 1,000 feet of the location where the victim was found. Furthermore, staff believe that there were many more cases where OPD responded to activations and found shooting victims – and where critical medical attention was provided. The 199 cases cited here are the ones where OPD and ShotSpotter staff can conclusively cite the response to the ShotSpotter activations.*
- *ShotSpotter activations led OPD to **181 cases where their vehicle and/or dwelling was hit by gunfire. Of these 181 cases, 93 victims were present but not hit by gunfire, and an additional 88 were listed as victims because the property belonged to them.***
- *1,870 crime incident reports (22% of total activations)*
  - *987 (53%) of these incidents resulted in OPD Crime Lab requests for further firearm forensic analysis.*
- *ShotSpotter provided the following additional reports in relation to specific ShotSpotter activations:*
  - *Twenty detailed forensic reports*
  - *Court preparation for four cases*
  - *Investigative Lead Summary: 367*

B. Whether and how often data acquired through the use of the surveillance technology was shared with outside entities, the name of any recipient entity, the type(s) of data disclosed, under what legal standard(s) the information was disclosed, and the justification for the disclosure(s):

The following agencies have been provided log-in access to the ShotSpotter System for ongoing usage:

1. *OPD and the Oakland Housing Authority Police Department entered into a Memorandum of Understanding (MOU) in 2012, following City Council approval, to fund the initial ShotSpotter program in areas of the City and near OHA buildings known for higher levels of gunshots. This MOU allows OPD to share access to the ShotSpotter cloud-based portal with OHA PD personnel (see **Attachment C**).*

The Oakland Housing Authority Police Department has ongoing log-in access and does not make written requests for access. However, OPD is currently amending the ShotSpotter Use Policy to include Oakland Housing Authority Police Department as an Authorized User.

DGO I-20 Section B – 1. "Authorized Use" states:

The Chief of Police or designee shall provide necessary training and/or technical assistance for GLD usage. Only OPD personnel shall be granted access to OPD's GLD System. The GLD system shall only be used for locating gunshots. The system shall never be used to record human conversations except where such conversations are unintentionally recorded in connection with gunshot recordings.

Separate from ongoing login access, DGO I-20 provides rules for sharing ShotSpotter System data with outside agencies. Section C–3 of DGO I-20: "GUNSHOT LOCATION DETECTION SYSTEM" – "Releasing or Sharing GLD System Data," states:

"GLD system data may be shared only with other law enforcement or prosecutorial agencies based on a need to know or a right to know, or as otherwise required by law, using the following procedures:

1. *The agency makes a written request for the ShotSpotter data that includes:*
   a. *The name of the requesting agency.*
   b. *The name of the individual making the request.*
   c. *The need for obtaining the information.*
2. *The request is reviewed by the Bureau of Services Deputy Chief/ Deputy Director or designee and approved before the request is fulfilled.*
3. *The approved request is retained on file and shall be included in the annual report.*

OPD did not provide specific ShotSpotter data to outside law enforcement agencies in 2023. However, OPD investigators in the Criminal Investigations Division and or other sections of OPD such as the Ceasefire Section regularly communicate with personnel from other law enforcement agencies on interjurisdictional investigations; these forms of collaboration may involve discussions related to shootings where OPD became informed from ShotSpotter activations. ShotSpotter activations many times may lead to evidence gathering (e.g., victims, witnesses, finding bullet casings, firearms); OPD may share information about evidence (e.g., that bullet casings or other evidence were found in a particular area at a particular time).

C. Where applicable, a breakdown of what physical objects the surveillance technology hardware was installed upon; using general descriptive terms so as not to reveal the specific location of such hardware; for surveillance technology software, a breakdown of what data sources the surveillance technology was applied to:

OPD has contracted with ShotSpotter to install GLD sensors in different areas (phases) in several parts of the city. The total coverage area for the current ShotSpotter system comprises 18.17 square miles or approximately 32 percent of the city land size (55.93). OPD has chosen to install the sensors in areas most prone to gunshots based upon historical data. Many areas in East and West Oakland now benefit from the GLD system.

Most sensors are placed approximately 30 feet above ground level to maximize sound triangulation to fixed structures (e.g., buildings); at this altitude, the sensors can only record limited street-level human voice sounds. Furthermore, ShotSpotter only retains the audio for one second prior to a gun shot, and one second after.

D. Where applicable, a breakdown of where the surveillance technology was deployed geographically, by each police area in the relevant year:

Attachment A *to this report provides the geographic areas of the City of Oakland that comprise the three ShotSpotter "phases" or areas covered under the current OPD-ShotSpotter contract. These areas intersect with all six official OPD Police Areas with a focus on areas where gunfire has historically occurred with greater regularity.* ***Attachment B*** *to this report is a weekly public ShotSpotter Activation Report for the week; this later report highlights areas of Oakland where ShotSpotter alerts have most recently occurred.*

E. A summary of community complaints or concerns about the surveillance technology, and an analysis of the technology's adopted use policy and whether it is adequate in protecting civil rights and civil liberties. The analysis shall also identify the race of each person that was subject to the technology's use. The Privacy Advisory Commission may waive this requirement upon making a determination that the probative value in gathering this information to evaluate the technology's impact on privacy interests is outweighed by the City's administrative burden in collecting or verifying this information and the potential greater invasiveness in capturing such data. If the Privacy Advisory Commission makes such a determination, written findings in support of the determination shall be included in the annual report submitted for City Council review.

Staff reached out to each City Council office to ask about possible community complaints or concerns related to this surveillance technology. No community complaints or concerns were communicated to staff.

OPD is not able to provide the race of each person connected to each activation since shooting suspects are often unknown. Many times, there is data regarding the race of shooting victims or witnesses (may be self-reported); however, this data is not captured in the same system as ShotSpotter and the administrative burden (8,318 total 2023

activations) to constantly connect the two disparate datasets would overwhelm staff capacity. OPD therefore recommends that the PAC makes the determination, that the administrative burden in collecting or verifying this information as well as the associated potential greater invasiveness in capturing such data outweighs the benefit.

F. The results of any internal audits, any information about violations or potential violations of the Surveillance Use Policy, and any actions taken in response unless the release of such information is prohibited by law, including but not limited to confidential personnel file information:

New officers and crime analysts are trained on the ShotSpotter System as part of police officer academies. Officers and analysts are provided direction that covers login, and how to use different views (e.g., time-period).

OPD officers have automatic access to ShotSpotter notifications when in patrol vehicles equipped with standard vehicle computers via the ShotSpotter Respond System. ShotSpotter creates a log for every sign-in to their system, which includes the level of access the user has (admin view or dispatch view, which is notification only). OPD and ShotSpotter has verified that for 2023, all users who logged into the system were authorized users.

Patrol Officers in vehicles and/or on mobile phones utilize the ShotSpotter Respond System. The Respond System pushes notifications to users – there is no interactivity functionality. Shotspotter can only audit logins for both the Respond and the Insight program. ShotSpotter and OPD staff have verified that all logins were associated with appropriate active employees. Staff regularly removes access from employee emails where staff separate from City employment.

G. Information about any data breaches or other unauthorized access to the data collected by the surveillance technology, including information about the scope of the breach and the actions taken in response.

Neither OPD, ShotSpotter, nor the city's IT Department are aware of any data breaches of ShotSpotter data or technology in 2023.

H. Information, including crime statistics, which helps the community assess whether the surveillance technology has been effective at achieving its identified purposes.

Table 1 below provides 2023 Part 1 Crime Data. This data illustrates the high levels of both violent crime and property crimes that occur in Oakland including for the 2023 year.

Table 1: 2023 OPD Type 1 Crime Data

Part 1 Crimes *All totals include attempts except homicides*	01-01-2022 through 12-31-2022	01-01-2023 through 12-31-2023	Year-to-Date % Change 2022 vs. 2023	3-Year Year-to-Date Average	YTD 2023 vs. 3-Year YTD Average
Homicide - 187(a)	118	120	2%	120	0%
*Homicide - all other**	2	6	200%	6	6%
Subtotal - 187(a) + all other	120	126	5%	127	1%
Aggravated Assault	3,188	3,531	11%	3,443	-2%
With Firearm	452	509	13%	522	3%
Rape	170	185	9%	175	-5%
Robbery	2,662	3,690	39%	3,027	-18%
Burglary Total	13,994	17,256	23%	13,945	-19%
Auto	9,130	16,637	82%	11,416	-31%
Residential	1,130	1,381	22%	1,205	-13%
Commercial	1,499	1,627	9%	1,294	-20%
Other/Unknown	284	611	115%	379	-38%
Motor Vehicle Theft	10,247	14,826	45%	11,476	-23%
Larceny	9,386	7,262	-23%	7,751	7%
Arson	164	110	-33%	149	35%
Total Part 1 Crimes	**39,931**	**46,986**	**18%**	**40,093**	-15%

Table 2: ShotSpotter Activations Resulting in Incident Report for Firearm Crimes by Category in 2023

Cases by Firearm-Related Crime Type	
Homicide	29
Assault with a Firearm	170
Shoot at an Occupied Home/Vehicle	93
Shoot at an Unoccupied Home/Vehicle	88
Negligent Discharge of a Firearm	1,244
Weapons Violations (including exhibit/draw)	37
Carjacking with a Firearm (including attempts)	10
Robbery with a Firearm (including attempts)	19
Total Cases	**1,690**

Table 3: Firearm Recoveries in 2023 Connected to ShotSpotter Activations illustrate Guns Recovered

Guns Recovered by Crime Type	
Homicide	12
Assault with a Firearm	17
Shoot at an Occupied Home/Vehicle	2
Shoot at an Unoccupied Home/Vehicle	0
Negligent Discharge of a Firearm	19
Weapons Violations (including exhibit/draw)	4
Carjacking with a Firearm (including attempts)	0
Robbery with a Firearm (including attempts)	0
Other	2
Total Cases	**56**

- *56 weapons seized.*
  - *Note: more than one firearm may be from the same incident.*
- *984 alerts when advanced situational awareness was provided to responding patrol officers on their way to crime scenes in high danger situations that required specific approach tactics such as multiple shooters, high capacity or automatic weapons being used, and drive-by shootings. Some of the alerts had more than one situational awareness tag amounting to 1,534 tags within those 984 alerts.*

I. Statistics and information about public records act requests regarding the relevant subject surveillance technology, including response rates:

There were 18 total PRR in 2023. 10 are closed and 8 remain open.

J. Total annual costs for the surveillance technology, including personnel and other ongoing costs, and what source of funding will fund the technology in the coming year:

Total paid in 2023 was $798,486 for 18.17 square miles of coverage. These fees encompass all services ShotSpotter currently provides to Oakland. There are no additional charges for meetings, reports, analysis and training. These funds come from OPD's General Purpose Fund.

K. Any requested modifications to the Surveillance Use Policy and a detailed basis for the request:

No requests for policy changes at this time.

OPD is committed to providing the best services to our community while being transparent and instilling procedural justice through daily police activity. This report is compliance with these OPD commitments. OPD hopes that this report helps to strengthen our trust within the Oakland community.

For any questions with this report, please contact Frederick Shavies, A/Captain, OPD, Ceasefire Section, at fshavies@oaklandca.gov

Respectfully submitted,

Frederick Shavies

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Frederick Shavies, A/Captain, OPD, Ceasefire Section

Reviewed by,
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Prepared by:
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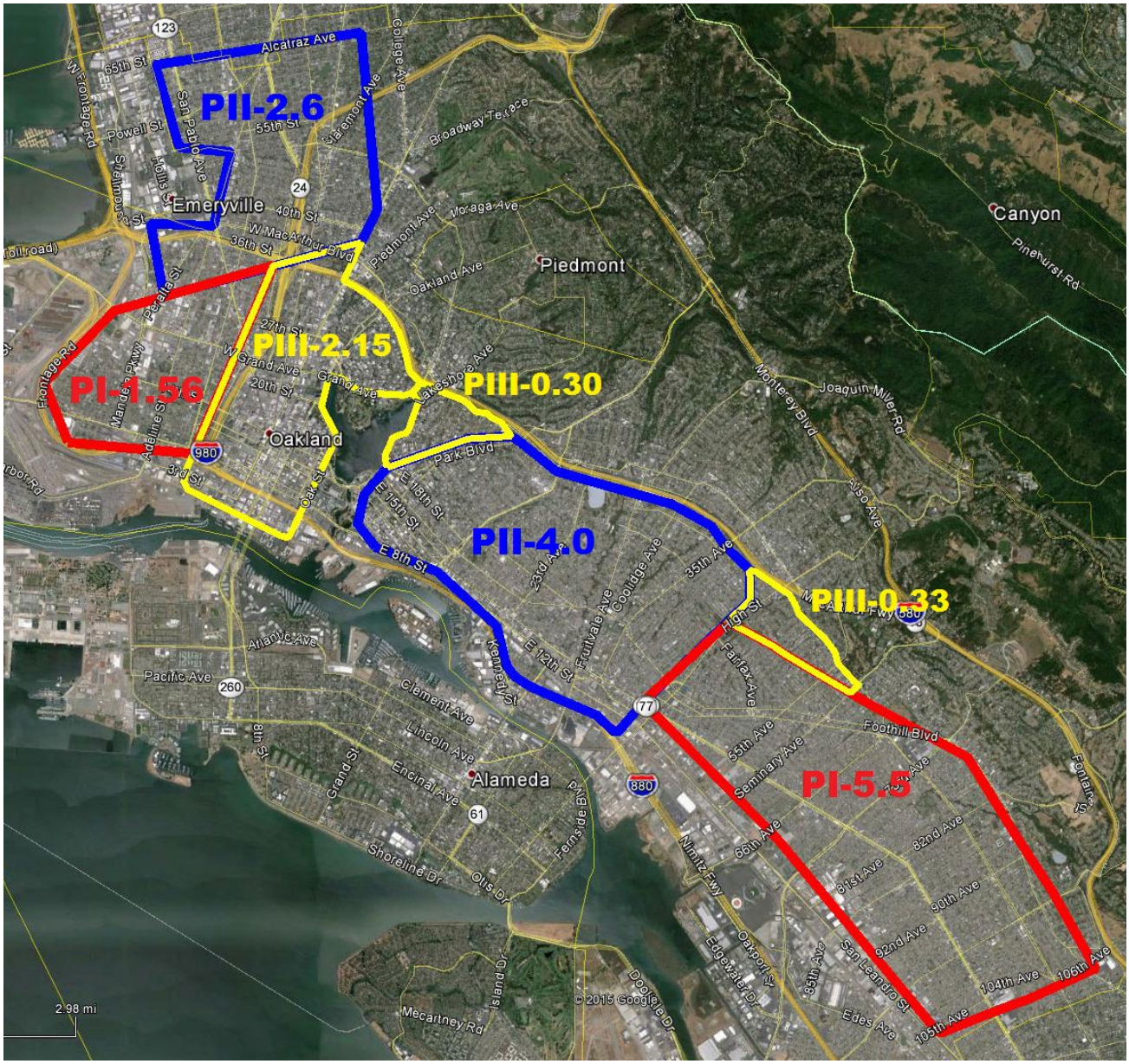
Attachment A - Shot Spotter Coverage Areas

Phase I with red borders (Activated in 2006): 6.0 square miles*
East Oakland: East of High Street to 106th Avenue
West Oakland: East of Highway 980 to Frontage Road

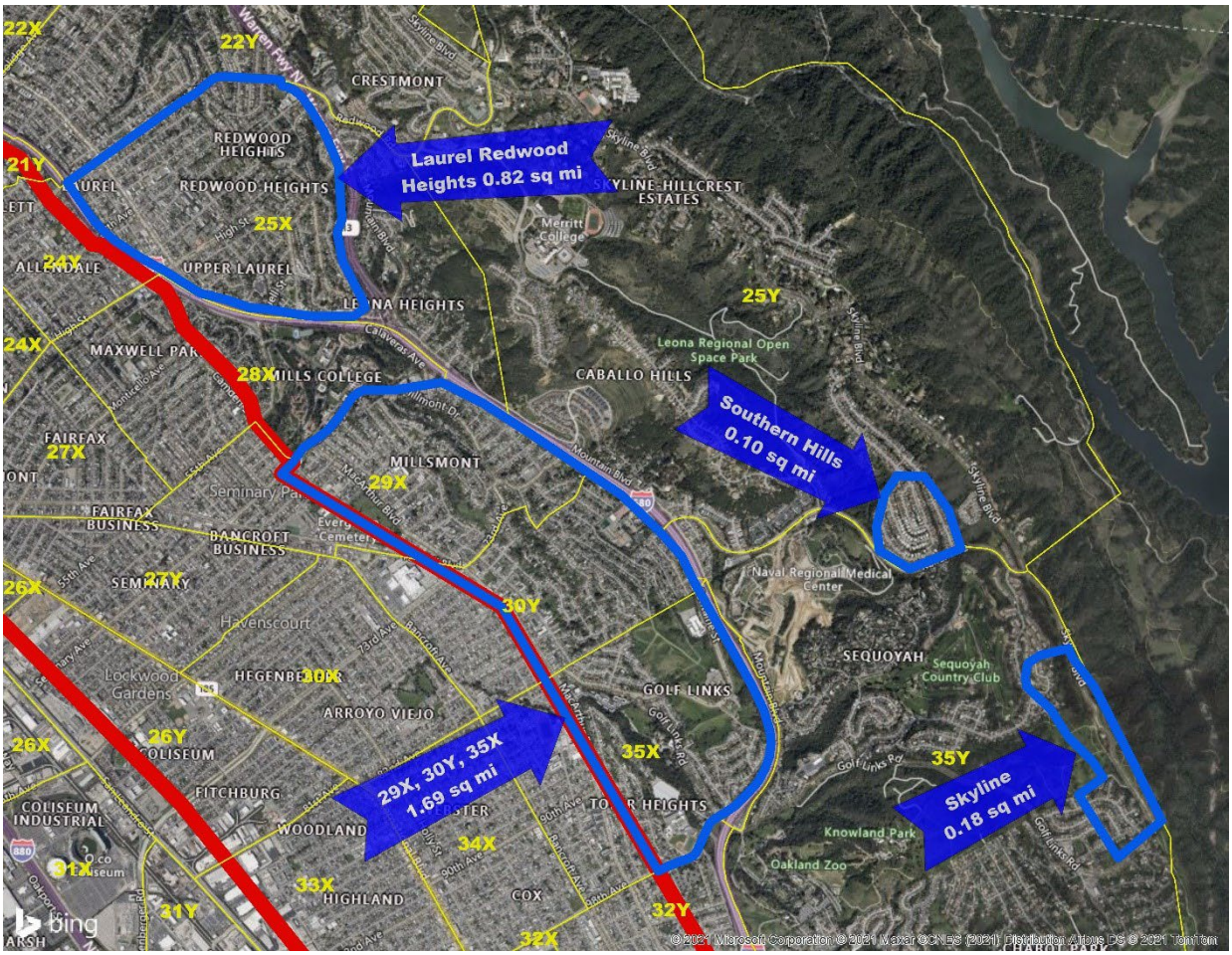
Phase II with blue borders (Activated in 2013): 6.64 square miles
East Oakland: West of High Street to Park Boulevard
North Oakland: North of Highway 580 to Alcatraz Avenue

Phase III with yellow borders (Activated in 2016): 2.78 square miles
Downtown Oakland: Jack London Square to about West MacArthur Boulevard
Cleveland Height area: East of Lake Merritt to Highway 580 & Park Boulevard
Maxwell Park: East of High Street to Highway 580 & Mills College



* While the original contracted coverage total for Phase I was 6.0 mi², an additional 1.06 mi² of ShotSpotter coverage was added, at no charge, for a total of 7.06 mi² when Phase I service was upgraded and converted to the newer subscription platform in 2011.

Phase IV with blue borders (Activated in 2021): 2.79 square miles
Laurel Redwood Heights: Covering a portion of Beat 25X
Southern Hills: Covering a portion of Beat 25Y
Millsmont / Golf Links: Covering Beats 29X, 30Y, and 35X
Skyline: Covering a portion of Beat 35Y


Laurel Redwood Heights 0.82 sq mi
Southern Hills 0.10 sq mi
29X, 30Y, 35X 1.69 sq mi
Skyline 0.18 sq mi
22X
22Y
21Y
24Y
24X
25X
25Y
28X
27X
29X
30Y
26X
27Y
30X
26Y
35X
35Y
34X
33X
31X
31Y
32Y
32X
CRESTMONT
REDWOOD HEIGHTS
UPPER LAUREL
MAXWELL PARK
MILLS COLLEGE
CABALLO HILLS
MILLSMONT
FAIRFAX
FAIRFAX BUSINESS
BANCROFT BUSINESS
SEMINARY
Havenscourt
Lockwood Gardens
HEGENBERGER
ARROYO VIEJO
COLISEUM
FITCHBURG
COLISEUM INDUSTRIAL
WOODLAND
HIGHLAND
COX
GOLF LINKS
SEQUOYAH
Sequoyah Country Club
Naval Regional Medical Center
Leona Regional Open Space Park
Merritt College
Knowland Park
Oakland Zoo
Skyline Blvd
Mountain Blvd
Golf Links Rd
Calaveras Ave
Bancroft Ave
Mac Arthur Blvd
Warren Fwy N
bing
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Attachment B

OAKLAND POLICE DEPARTMENT
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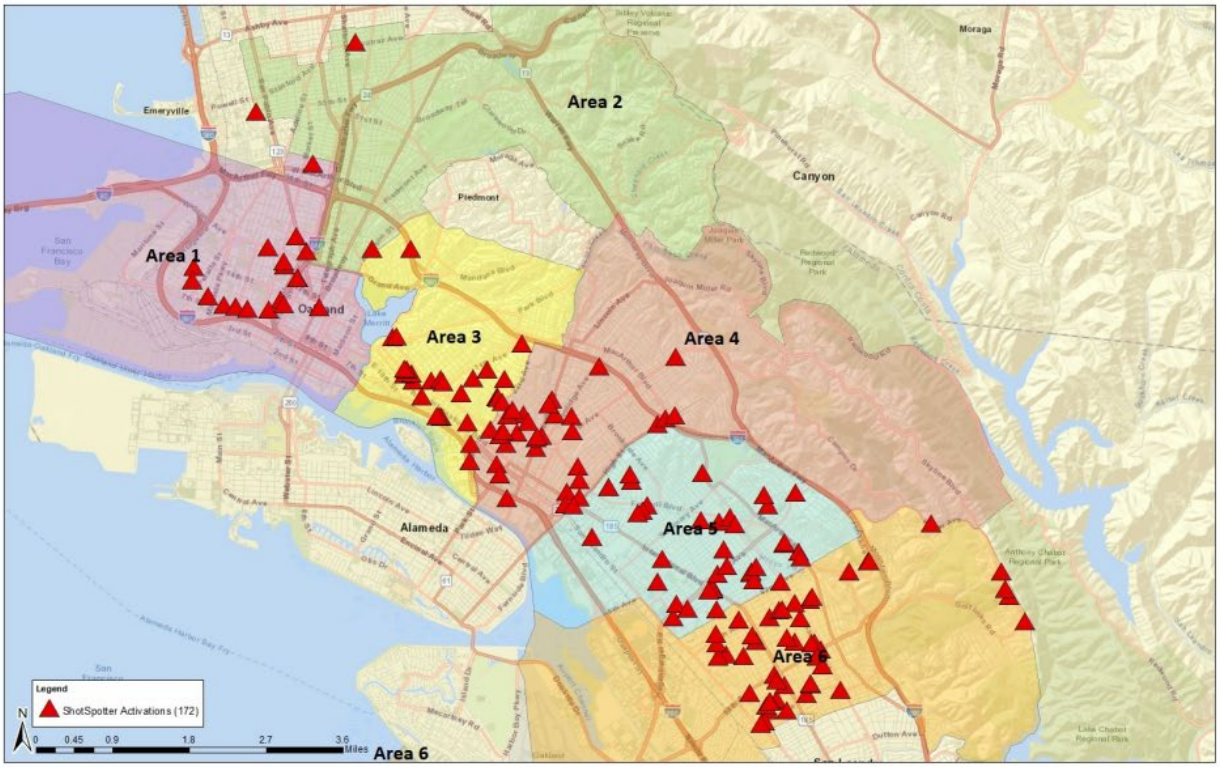
CRIME ANALYSIS

Weekly ShotSpotter Activations Report — Citywide
04 Sep. – 10 Sep., 2023

ShotSpotter Activations	Weekly Total	YTD 2021	YTD 2022	YTD 2023	YTD % Change 2022 vs. 2023	3-Year YTD Average	YTD 2023 vs. 3-Year YTD Average
Citywide	185	6,129	5,379	5,563	3%	5,690	-2%
Area 1	19	658	545	551	1%	585	-6%
Area 2	6	188	157	175	11%	173	1%
Area 3	18	697	549	551	0%	599	-8%
Area 4	33	968	982	978	0%	976	0%
Area 5	47	1,922	1,539	1,573	2%	1,678	-6%
Area 6	62	1,696	1,607	1,735	8%	1,679	3%



All data sourced via ShotSpotter Insight.

Produced by the Oakland Police Dept. Crime Analysis Section.