



OPD ShotSpotter Stats

March 13, 2025



ShotSpotter in Oakland Police Department

ShotSpotter is a valuable tool for OPD that is imbedded in daily operations.

Rapid Response &
Situational Awareness



- ✓ Alerts received **within 60 seconds**
- ✓ Exact location with supporting audio and rounds fired
- ✓ Situational awareness for officer safety

Initial Scene
Investigation



- ✓ Identify victims and **Render Aid**
- ✓ Speak with witnesses
- ✓ Collect valuable evidence (shell casings, etc.)

Crime Lab Evidence &
Case Management



- ✓ Document findings from case
- ✓ Log **evidence for lab testing**
- ✓ Track Crime Gun findings and matches

Shooting Review &
CeaseFire



- ✓ **Support gun violence intervention activities**
- ✓ Weekly review of shooting investigations
- ✓ Collaboration on incidents and potential retaliation

Ongoing Gunfire
Intelligence

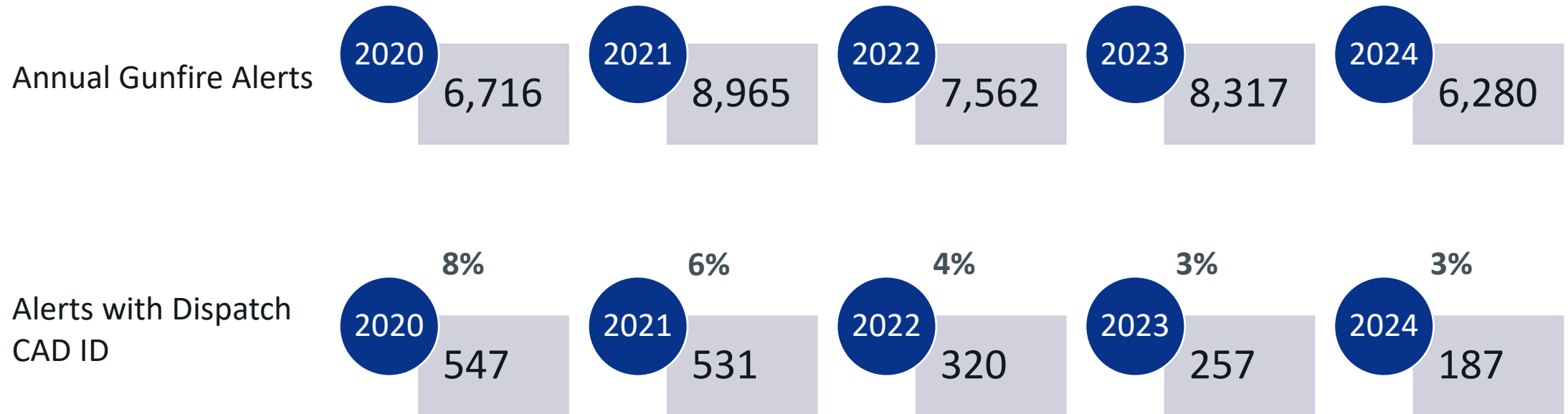


- ✓ **Data-driven strategies & resource deployment**
- ✓ Aggregate data for trends and patterns
- ✓ Intelligence to support investigations



Gunfire Activity in Oakland

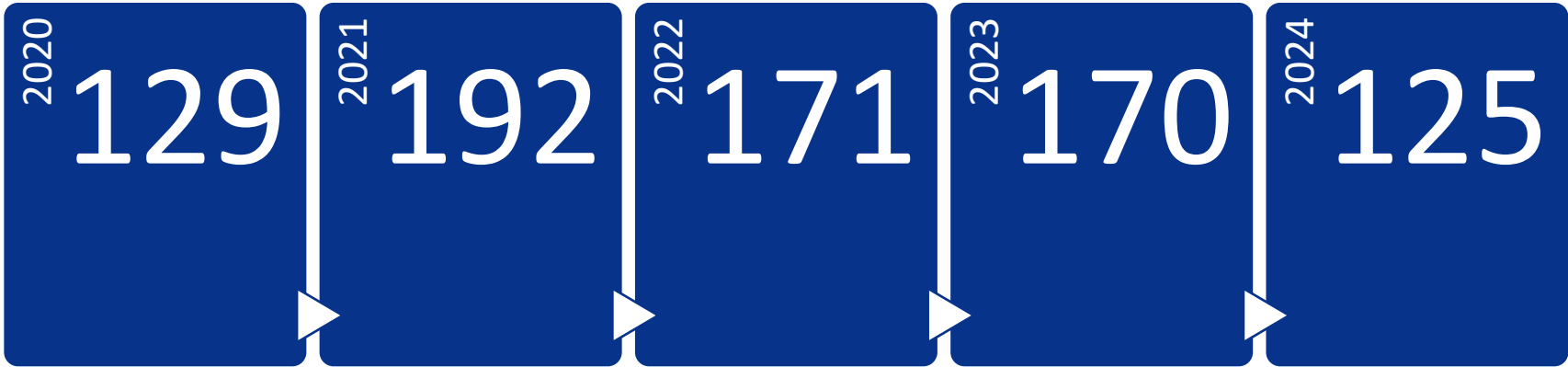
More than 95% of gunfire is not reported in the first 15 minutes and 1,000 feet of a ShotSpotter alert or at all. Without this critical tool for public safety, gunfire in Oakland would largely go unreported.



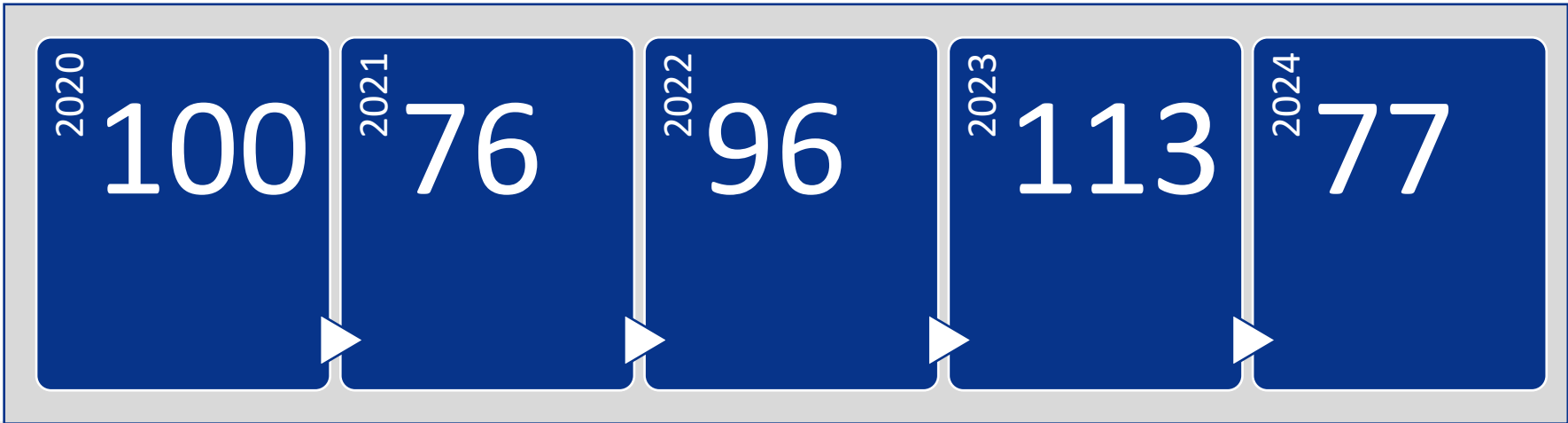


Non-fatal Victims

Non-fatal Victims associated with ShotSpotter Alert



Non-fatal Victims - ShotSpotter Alone

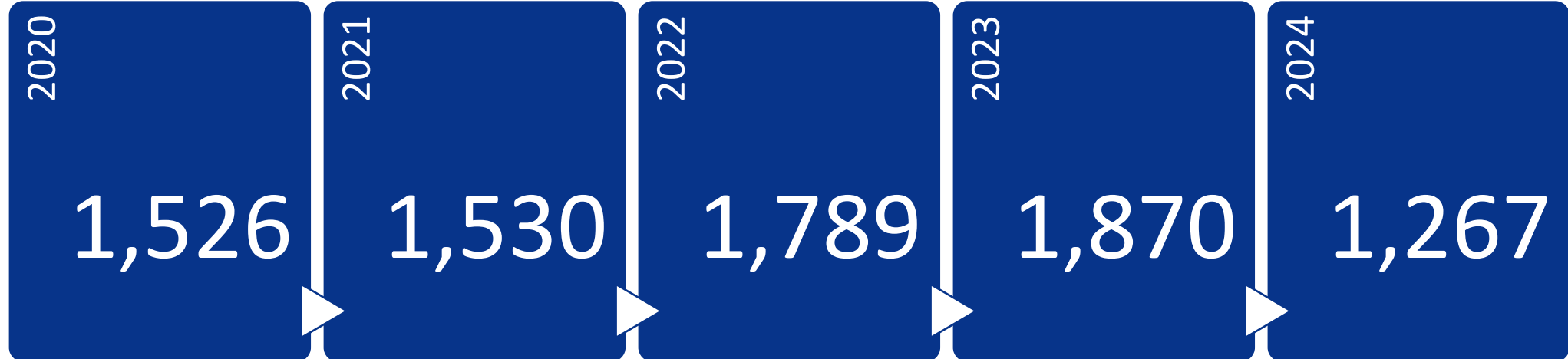




Reports Taken

The absence of physical evidence does not indicate a false positive or that gunfire did not occur

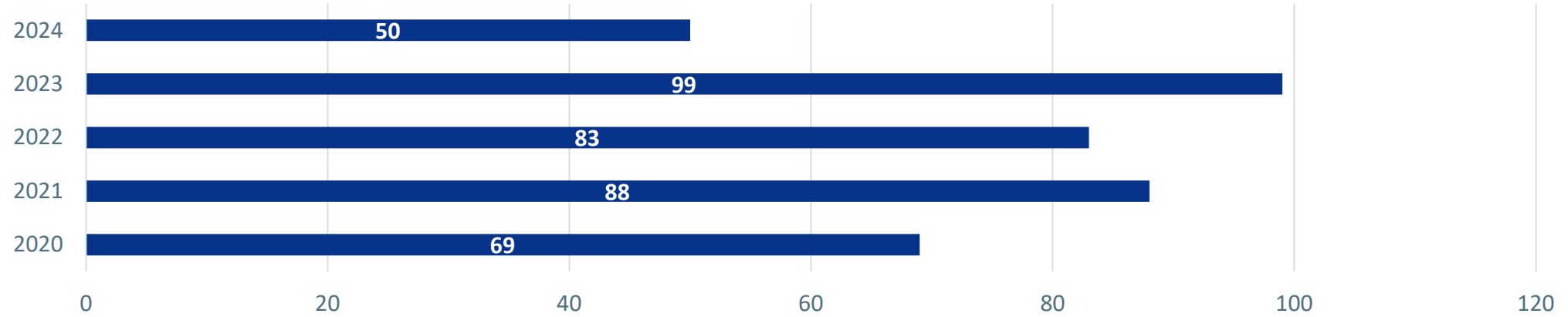
700-1,000: Additional reports each year. Classified as Evidence Technician, Transport, Assignment Report or Administrative



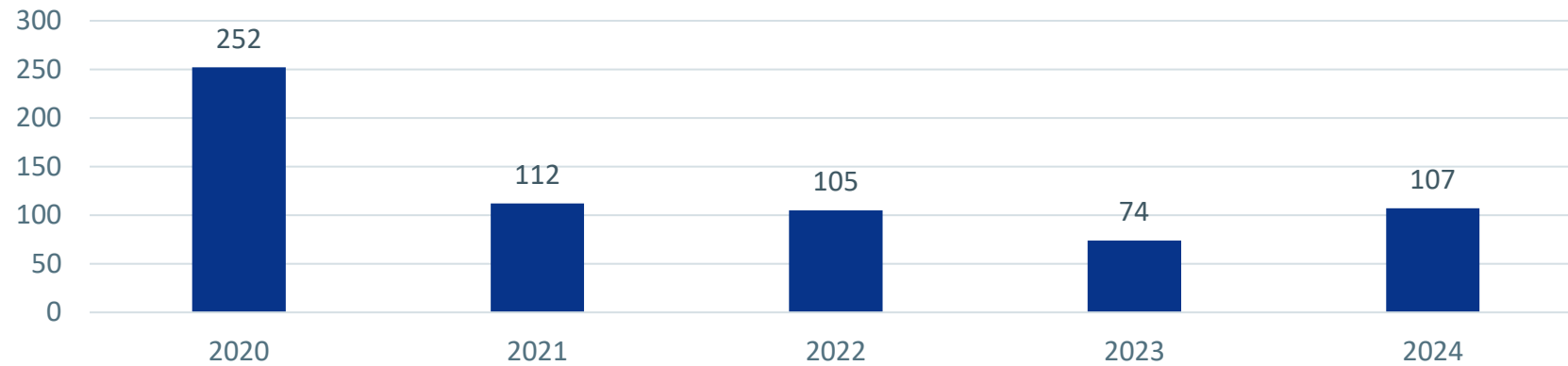


Weapons Seized & Arrests

Weapons

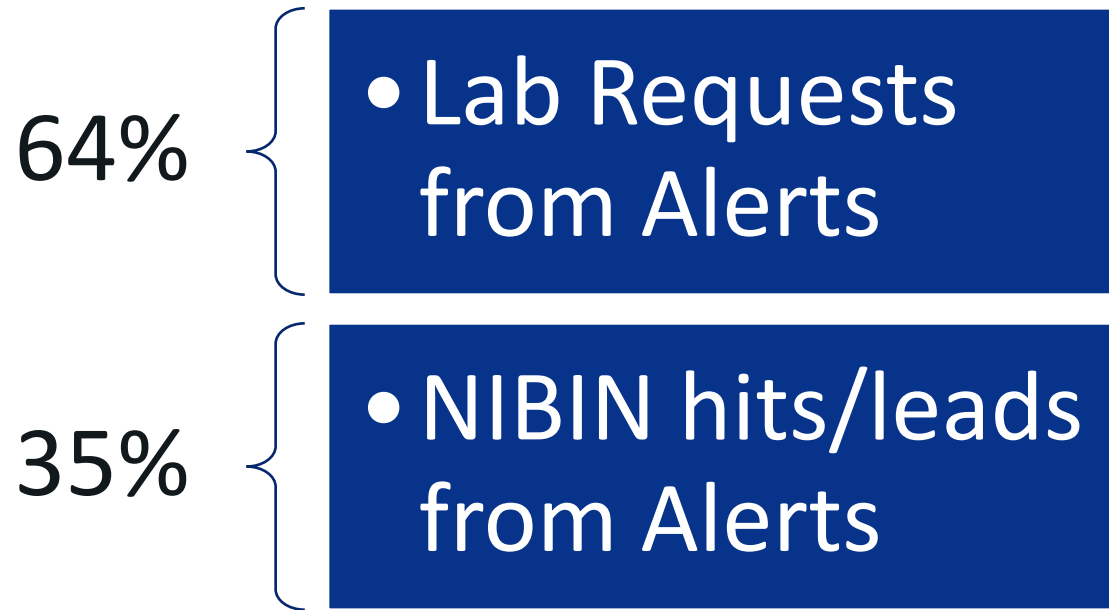


Arrests

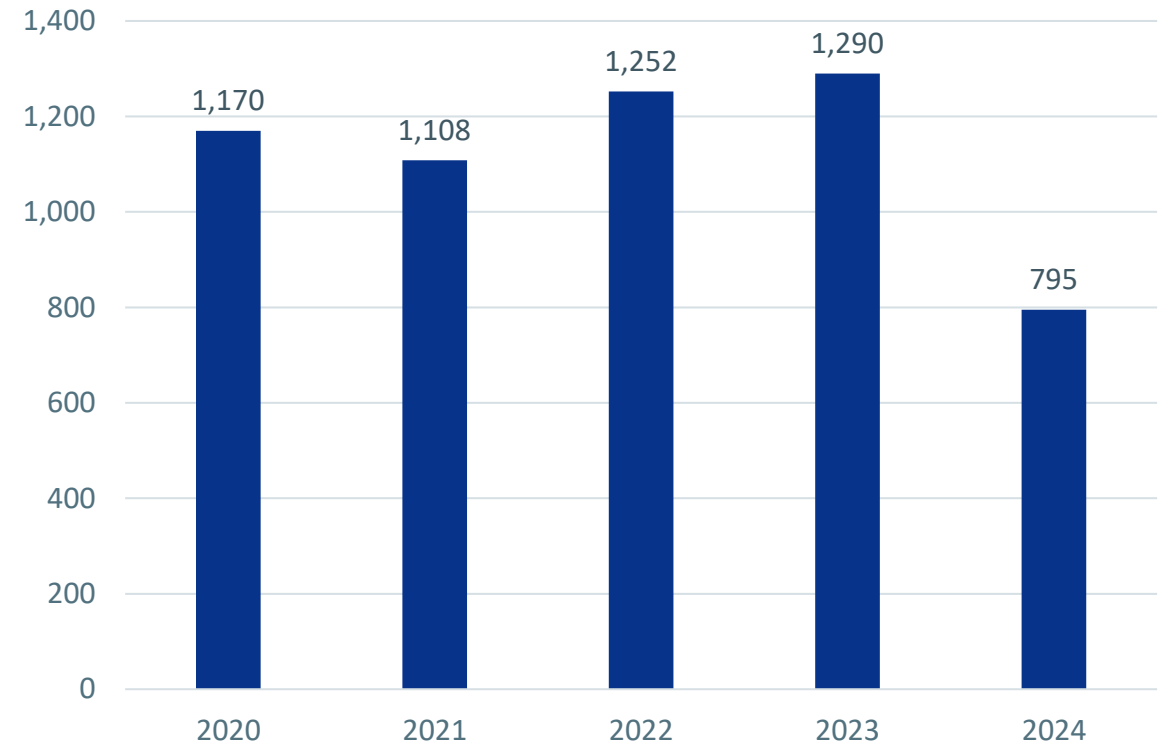




Crime Lab Requests & Leads



Crime Lab Requests



Cost of Gun Violence



<https://costofviolence.org/oakland-ca/>

Data Sources			
Oakland California			
CRIME SCENE	Subject:	Police Response	Fire/EMT Transport
	Source:	<ul style="list-style-type: none"> Oakland Police Department Interview 	<ul style="list-style-type: none"> City of Oakland Adopted Policy Budget, Fiscal Year 2019-2021
HOSPITAL	Notes:	Initial OPD response to a homicide scene typically includes 12 Patrol, 1 Lieutenant, 2 Sergeants, and 2 Detectives. They remain on the scene for 5-6 hours. Initial OPD response to an injury shooting scene typically includes 6 Patrol, 1 Sergeant, and 2 Detectives. They remain on scene for 2-3 hours.	Fire & EMT Budget: \$169,585,818 Total Responses: 60,000 average Cost per response = \$2,826
	Notes:	\$2,500 is the national average cost for cleanup of crime scenes involving blood, based on NICJR analysis of actual costs from multiple cities.	
CRIMINAL JUSTICE	Subject:	Emergency Room / Surgery for Gun-Shot Victim	
	Source:	<ul style="list-style-type: none"> 2020 National Trends and Cost Burden of Surgically Treated Gunshot Wounds in the US 2021 Firearms Injuries: Health Care Service Needs and Costs 	
INCARCERATION	Notes:	Average cost of gunshot victims treated and released the same day: \$1,428 (ER base cost) Average cost of gunshot victims requiring surgery, hospital stay, and release to outpatient care: \$144,617 (ER, surgery, rehabilitation)	
	Notes:		
VICTIM SUPPORT	Subject:	Police Investigation	District Attorney & Public Defender
	Source:	<ul style="list-style-type: none"> Police FY 2021-23 Proposed Policy Budget 	<ul style="list-style-type: none"> Salary Reports - Alameda County Human Resource Services Alameda County Public Defenders Jobs
LOST REVENUE	Notes:	The cost of the police investigation is calculated by multiplying the average salary and benefits for officers assigned to the Homicide Division in Oakland by the average amount of time spent investigating homicides and injury shootings. Homicide: \$104/hr x 37.5 (combined total for both primary and secondary detectives) = \$3,900 Injury shooting: \$104/hr x 9 (combined total for both primary and secondary detectives) = \$936	
	Notes:	The cost of prosecution and defense is calculated by multiplying the average amount of time spent by attorneys and support staff by hourly salaries. DA: \$103/hour x 1087 hours for a homicide = \$111,961 plus support staff costs of \$5,973 = \$117,934 Public Defender: \$97/hour x 1087 hours for a homicide = \$106,439 plus support staff costs of \$5,973 = \$112,412 DA: \$103/hour x 155 hours for an injury shooting = \$15,965 plus support staff costs of \$814 = \$16,779 Public Defender: \$97/hour x 155 hours for an injury shooting = \$15,035 plus support staff costs of \$814 = \$15,849	
CRIME SCENE	Subject:	Pre-Trial Incarceration	State Prison: Attempted Murder Case
	Source:	<ul style="list-style-type: none"> New Thinking in Community Corrections 	<ul style="list-style-type: none"> The 2020-21 Spending Plan: Judiciary and Criminal Justice How much does it cost to incarcerate an inmate? Corrections and Rehabilitation Budget
HOSPITAL	Notes:	Alameda County Department of Corrections budget: \$205,470,000 Average daily population: 2,000 Average daily cost per inmate: \$281 Average period of pretrial incarceration: 2 years \$281/day x 2 years = \$205,470	California Department of Corrections and Rehabilitation annual cost to incarcerate an adult: \$106,131 Injury shooting conviction sentence: 9 years, subtracting pretrial time served \$106,131 x (9 years - 2 years) = \$742,917
	Notes:	Murder conviction sentence: 25 years, subtracting pretrial time served \$106,131 x (25 years - 2 years) = \$2,441,013	
CRIMINAL JUSTICE	Subject:	Victim Compensation	Social Service Benefits
	Source:	<ul style="list-style-type: none"> What is Covered - CA Victim Compensation Board 	<ul style="list-style-type: none"> Supplemental Nutrition Assistance Program Increases in TANF Cash Benefit Levels Are Critical to Help Families Meet Rising Costs
INCARCERATION	Notes:	The California Victim Compensation Board covers a number of expenses, including but not limited to: • Funeral and burial • Medical, dental treatment, and mental health treatment or counseling • Round trip mileage costs to medical, dental, or mental health appointments • Mental health counseling for minors who witness a violent crime • Home security installation or improvement • Relocation In Alameda County, the average award for victims of injury shootings and for families of homicide victims is \$70,000	
	Notes:	A severely injured shooting victim often cannot return to work immediately. Since the victim and perpetrator may be major financial contributors to their households, many families may need to apply for social services support. CA SNAP = \$658 for family of 3 California TANF = \$1,119 for family of 3 This study estimates 1 year of assistance. \$1,777/mo x 12 months x 2 families = \$42,648	
VICTIM SUPPORT	Subject:	Coroner's Office	Lost Tax Revenue: One Person Incarcerated
	Source:	<ul style="list-style-type: none"> MEMO TO ADOPT FEE SCHEDULE FOR CORONER'S BUREAU 	<ul style="list-style-type: none"> CA Franchise Tax Board Personal Income Tax Booklet
LOST REVENUE	Notes:	Alameda County body storage fee: \$333 Alameda County autopsy fee: \$4,000 Total cost = \$4,333	State income tax: 1.6% for the first \$20,803; 4% for the next \$9,197 Total annual income tax at \$30,000/year: \$694 Sales and use tax (County and state): 9.25% Total annual sales tax for person earning \$30,000/year and spending 1/3 of income: \$925 Total annual combined tax: \$1,619 Lost tax revenue for a 9-year sentence for attempted murder (\$1,619 x 9 years): \$14,571 If the shooting victim does not work for one year, an additional \$1,619 of revenue is lost. Total Lost Tax Revenue = \$16,190
	Notes:	State income tax: 1.6% for the first \$20,000; 4% for the next \$9,197 Total annual income tax at \$30,000/year: \$694 Sales and use tax: 9.25% Total annual sales tax for person earning \$30,000/year and spending 1/3 of income: \$925 Total annual combined tax: \$1,619 Lost tax revenue for a 25-year sentence for murder (\$1,619 x 25 years): \$40,475 Average murder sentence is 25 years; combined revenue loss for victim and perpetrator is at least \$80,950 (\$1,619 x 25 years x 2 people)	



Defining Accuracy

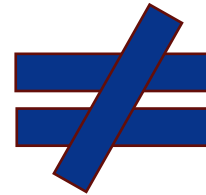
The absence of physical evidence does not indicate a false positive or that gunfire did not occur.

Lack of a Victim

Lack of Property Damage

Lack of Recovered Casings

Lack of a Filed Case



False Positive

Despite the lack of immediate evidence, the intelligence from shooting trends/patterns have provided valuable insights.

Defining ShotSpotter Accuracy

90 % Contractually guaranteed accuracy

97 % Average across all customers

99 % Oakland 2023 Accuracy

Missed Incidents

An unsuppressed gunshot incident that meets reporting criteria but was not detected by ShotSpotter system

Misclassified Incidents

A detected and located incident, incorrectly classified by ShotSpotter. Misclassification types include: **False Positive** and **False Negative** incidents.

Mislocated Incidents

A gunfire incident correctly identified by ShotSpotter but produced with an inaccurate location greater than 25 meters (82 ft) from the confirmed shooting location.

Understanding ShotSpotter

The ShotSpotter acoustic gunshot detection technology is based on science.



1 Gun is fired

When a gun is fired, the sound of a muzzle blast radiates outward.

2 Gunshot is Detected and Located

Acoustic sensors are triggered by the impulsive sound. The sound is classified as a gunshot through a process of machine classification. Sound triangulation determines the precise location.

3 Gunshot is Reviewed

The data is relayed to the ShotSpotter Incident Review Center where analysts quickly audit the data and publish confirmed gunshots to police.

4 Police Respond

Alerts are sent to dispatch centers and patrol officers' smartphones and MDTs for immediate response. The entire process takes less than 60 seconds.

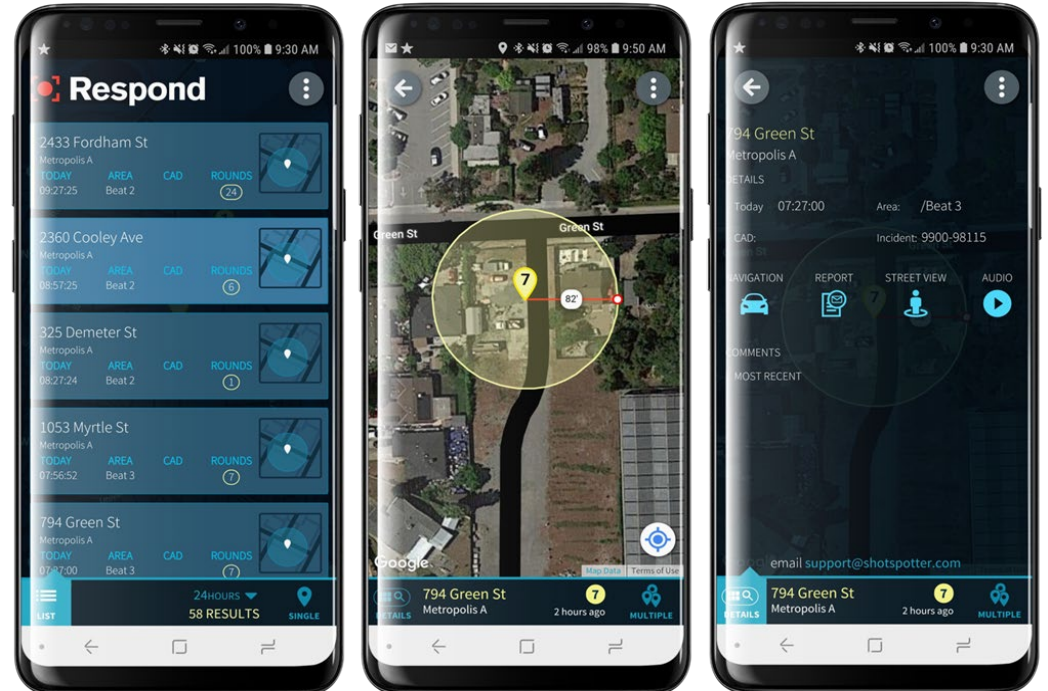
Understanding ShotSpotter

Specific location data and incident specifics are sent to offices within 60 seconds.

Patrol Car View



Cell Phone View





Setting the Record Straight

In previous meetings, several inaccurate claims were made about ShotSpotter.

Claim	Fact
“Many jurisdictions have declined to adopt the technology after pilots or have not to renewed upon expiration.”	Incorrect. More than 170 cities in the US use ShotSpotter (In the last 18 months: <ul style="list-style-type: none">• 136 existing municipalities renewed ShotSpotter• 40 new municipalities deployed ShotSpotter• 25 existing customers expanded their coverage areas
“80% of alerts do not lead to physical evidence – therefore fails 80% time.”	Incorrect metric. ShotSpotter is designed to detect gunfire <ul style="list-style-type: none">• Absence of physical evidence does not mean gunfire did not occur – ShotSpotter is accepted as digital witness• >95% or more of gunfire incidents do NOT get 911 call• In fact, evidence collection rates on 911 gunfire incidents without ShotSpotter– are even lower• ShotSpotter evidence collection rates up to 3x higher



Setting the Record Straight

Claim	Fact
"ShotSpotter is not accurate."	False. <ul style="list-style-type: none">• Contractually 90% accuracy• Across all customers, independently verified 97%• Oakland: 99%
"Studies show that ShotSpotter has no impact on crime."	Even though ShotSpotter is not designed to prevent gunfire, independent research* suggests: <ul style="list-style-type: none">• Response to gunfire significantly faster than those called into 911• 24% reduction in assaults and homicides• 26:1 ROI• After ShotSpotter goes live, fatality rates are about 4 percentage points lower in the areas with the technology.• In Chicago, "a 3-in-4 chance that the technology saves about 85 lives per year."

Sources: University of Chicago Crime Lab Study, September, 2024;

"The Impact of ShotSpotter in Winston-Salem, NC," July, 2024, Dennis Mares and Andrew Buettner, Center for Crime Science and Violence Prevention, Southern Illinois University



Summary

ShotSpotter is a valuable tool for OPD in that it provides valuable insight into illegal gun activity across Oakland that it otherwise would not be aware of.

The ShotSpotter Technology...

- ✓ helps render aid to victims and save lives
- ✓ enables faster and a more comprehensive response to criminal gunfire (less than 5% of which is reported by 911)
- ✓ assists in collecting evidence, apprehending criminals, and recovering illegal guns
- ✓ is a critical foundation that enables Operation Ceasefire
- ✓ is a force multiplier to support current OPD patrolling resources