CITY OF OAKLAND

FILED
OFFICE OF THE CITY CLERK
OAKLAND

2014 MAY -1 PM 1:39

AGENDA REPORT

TO: FRED BLACKWELL
CITY ADMINISTRATOR

FROM: Sean Whent
Interim Chief of Police

SUBJECT: ShotSpotter Informational Report **DATE:** April 1, 2014

City Administrator Approval _____ Date 4-29-14

COUNCIL DISTRICT: City-wide

RECOMMENDATION

Staff recommends acceptance of this informational report from the Oakland Police Department (OPD) that addresses the ShotSpotter system (SST) and its usage in the City of Oakland (City).

EXECUTIVE SUMMARY

This informational report addresses SST and its implementation in the City as it pertains to gun violence. The report covers the history of the system, associated cost, and the manner in which it is currently being used (as a response tool, investigative module, community awareness tool, and gunshot predictor).

SST is an acoustic gunshot locator system that tracks gunshots in the City, while alerting law enforcement to the location and number of rounds fired.

BACKGROUND/LEGISLATIVE HISTORY

OPD entered into the original contract with ShotSpotter, Inc. (ShotSpotter) and went live with the system in 2006 (SST 1.0). This original arrangement covered 6.2 square miles of the City and required OPD to purchase hardware and software. SST 1.0 was a turnkey system managed entirely by OPD with no reviewed alerts (OPD was responsible for listening to the alerts and determining if they were in fact actual gunshots). The SST 1.0 maintenance contract covering hardware and software purchased by the City expired in 2009. As SST 1.0 began to deteriorate, broken sensors and outdated software rendered it useless for enforcement and/or investigative purposes.

From 2009 – 2011, the City was not in contract with ShotSpotter and did not pay any fees associated with SST.

In July of 2011, staff was asked to prepare a report and resolution authorizing the City Administrator to enter into an agreement with ShotSpotter for implementation of the system a

second time. The report and resolution was adopted by the City Council (Resolution No. 83580 C.M.S.). The Shotspotters system was implemented at a cost of $84,000 annually. At that point, the City considered expanding SST city-wide at an additional cost of $264,000 annually. This expansion was budgeted and approved by the City Council in the Fiscal Year 2012-2013 (FY2012-13) Adopted Mid-cycle Budget. The additional $264,000 did not include the annual cost of $84,000 for the current system and its maintenance.

In November 2011, the City restarted the program with SST as a conversion-managed service. This new program (SST 2.0) required:

- Upgraded sensor arrays to improve detection of gunfire;
- Web-based alerts pushed to all police vehicles and selected desktops; and
- Review of alerts 24/7 by ShotSpotter expert reviewers ("Flex").

SST 2.0 also added an investigative portal to assist in open investigations. Qualified gunfire incident alerts are sent directly to 911 dispatch and police vehicles at the same time. They provide precise location information, including street address, number of rounds fired, map images, and additional data.

In August 2012, City Auditor Courtney Ruby released an audit titled *Police Technology Audit.* This audit focused on technologies purchased by OPD that were either underutilized or not being used at all. SST was one of the technologies identified as being underutilized. The audit addressed deficiencies in how technology deployment, accountability, and non-use of the system by investigators. Although the audit accurately identified deficiencies, these had been addressed during the transition to SST 2.0. This audit did inspire OPD to conduct ongoing monthly audits of the system for accuracy, completeness, and customer-service-related matters, which continue.

In April 2013, the City expanded the system to cover 13.3 square miles and partnered with the Oakland Housing Authority (OHA) to join the system and enhance response to gun violence City-wide. OHA contributed $225,000 towards this expansion to off-set the cost to the City. Additionally, the system was integrated with Forensic Logic (a data mining system) to assist in predictive policing and Area Commander accountability.

A recent audit of SST 2.0 data revealed that every 2 hours and 4 minutes, a gun is fired in Oakland. On average, approximately four rounds are fired in each gunfire incident. In 2013, a total of 16,557 rounds of gunfire were fired throughout the streets of Oakland.

ANALYSIS

Privacy Issues

Beyond being a crime-fighting tool, SST 2.0 is a powerful instrument for increasing community awareness and improving police-community relationships. To that end, transparency is the key for critique, support, and improvement.
As technology evolves, so do questions regarding privacy as well as how this data is used. However, SST 2.0 only triggers on loud, explosive events. When an incident is detected and located, audio is pushed from the sensors and there is no live audio streaming capability.

A recent audit of a 24-hour span in Oakland revealed the following:

- 47 incidents occurred;
- 42 gunfire rounds were fired;
- Average length of recording was 2.7 seconds;
- Maximum length of recording was 6.2 seconds; and
- Out of a total 86,400 seconds in the day, SST 2.0 recorded 128 seconds (0.187% of the day). During this time no voices/conversations were recorded or were heard.

ShotSpotter has reviewed its privacy policy and taken steps to assure that no audio other than the incident itself is retained. Incident audio records 2 seconds prior to and 4 seconds after the incident. ShotSpotter policies and the system design are intentionally designed to alleviate privacy concerns.

911/Gunshot Notifications

Without a doubt, human intelligence and eyewitness testimony is the best evidence in dealing with arrests, investigations, and prosecutions of individuals involved in gun violence.

While not a panacea, SST is a very important tool in notification, response, and criminal investigation follow-up in regards to gun violence. OPD cannot always rely on the citizens of Oakland to be OPD's eyes and ears when it comes to gunshot deterrence and response. In fact, in many neighborhoods with high levels of gun violence, OPD has seen a decrease in calls to 911 regarding gun violence.

During a recent audit comparing SST activations to 911 calls in response to actual confirmed gun violence in a very active 3/4 mile radius, it was determined that OPD received calls on 13% of the incidents: SST reported 98% of the incidents. The audit also looked at time delay in reporting. On average, calls to 911 were answered 4 minutes after the shooting; SST notification averaged 30 seconds for the same incidents. Lastly, the audit looked at the distance between the caller and the shooting scene. On average, callers were 780 feet away, while SST was within 30 feet of the shooting incident. The more timely and accurate information provided by SST allows OPD to respond more rapidly, which increases the opportunity to capture perpetrators of

violence. Further, accurate information enables OPD to respond to the correct location, so that people in the community see that OPD cares and is responsive to violence in the community.

Table 1 below provides raw data on the amount of incidents recorded by SST. Prior to November 30, 2011, the system was divided into two coverage areas – Oakland East and Oakland West. On November 30, 2011, the system was converted to Flex and both coverage areas were combined.

It should also be noted that there were periods of time between 2006 – 2011 when the system was not fully functioning.

Table 1. SST data.

	Oakland East	Oakland West	Current System Entire Coverage Area
Dates	9/30/06-11/21/11	9/26/06-11/28/11	11/30/11-3/31/14
All Incidents	62,680	6,701	49,831
Gunshots Only	23,678	3,244	10,533

Investigative Component

ShotSpotter forensic reports provide evidence to support criminal cases as well as evidence in liability cases for the City (e.g., officer-involved shootings). Since 2006, ShotSpotter has completed 70 detailed forensic reports (DFRs) for OPD. DFRs contain court-admissible evidence and are used frequently in court cases and prosecutions. In 2013 alone, ShotSpotter completed 17 DFRs for OPD that have provided law enforcement and criminal justice professionals with detailed audio and incident analysis. Because the City is an active customer, ShotSpotter has also provided expert testimony, reviewed report details, and offered technical expertise on the technology at no additional charge.

Oakland Housing Authority (OHA)

OPD approached OHA in late 2012 and asked for assistance in funding the SST expansion project in exchange for data sharing and OHA access to SST equipment, training, and technical support. OHA agreed and entered into a memorandum of understanding (MOU) with OPD, contributing a one-time fee of $225,000 to OPD for what was believed to be a three-year commitment by OPD to ShotSpotter. Since the agreement, OHA Chief Carel Duplessis has stated that his agency uses the system for call response and crime analysis. OHA has stated that the system has been very beneficial, allowing its staff to provide improved crime analysis, call response planning for officers, confirmation of observations regarding gunshots, and reducing time on calls when canvassing the areas for evidence.

Training/Technology Innovations

ShotSpotter has provided detailed training to all Patrol staff in use of the system and best practice responses to shooting scenes. Additionally, training has been provided to investigative units and OPD crime analysts. ShotSpotter trainers have conducted the training at various days and times during line-ups to accommodate rotating shifts. SST training also continues with webinars and "train the trainer" courses throughout the year. ShotSpotter has developed a new program called "Siren" which enables users anywhere to view SST incidents in detail via email or internet on virtually any device.

Forensic Logic Integration

Forensic Logic is a company founded on the simple idea that there is too much crime on our streets because critical information is inaccessible or unusable to our nation's law enforcement. Forensic Logic has assembled the largest database of law enforcement data in the country and matched it with some of the most robust and intuitive crime search and analysis tools. Forensic Logic currently mines the OPD CAD (911 system), Stop Data, License Plate Reader, and Reports Management System. Forensic Logic is also used by OPD as accountability metric during the bi-monthly COMPSTAT meetings for crime reduction by Areas. ShotSpotter and Forensic Logic began data sharing in 2013 and now SST data can be used during COMPSTAT and is readily available during deployment, operation planning, and community meetings.

PUBLIC OUTREACH/INTEREST

Implementation of the ShotSpotter Gun Location System will result in a technological force multiplier, increasing the likeliness that officers will apprehend subjects involved in violent crime. Concerted efforts such as this will undoubtedly do much to establish an environment in the community that is conducive for families to thrive free of crime and the fear of crime. The data collected by ShotSpotter is made accessible to the community so that they can have accurate knowledge about the state of the City.

COORDINATION

The Budget Office and the City Attorney's Office were consulted in the preparation of this report.

COST SUMMARY/IMPLICATIONS

OPD currently does not have funding for the continuance of this proposed program. Funding would need to be identified outside the current approved budget to continue this $348,000 yearly expenditure.

Table 2 below depicts annual revenues paid to ShotSpotter since the inception of the system.

Table 2. Revenues paid to ShotSpotter since impementation of the system in Oakland.

Year	Total Spent
2006	$377,920
2007	$56,276
2008	$54,151
2009	0
2010	0
2011	$84,151
2012	$10,000
2013	$432,000

SUSTAINABLE OPPORTUNITIES

Economic: Responding to crime scenes in a timelier manner and having an increased capacity to analyze crime results in a more efficient use of resources, focuses efforts on crime trends and patterns, and enhances police services to respond to emerging crime trends. These results improve public safety, thereby providing a safer environment for residents and local commerce to flourish.

Environmental: There are no environmental issues associated with this report.

Social Equity: Implementation of the ShotSpotter Gun Location System will result in a technological force multiplier, increasing the likeliness that officers will apprehend subjects involved in violent crime. Concerted efforts such as this will undoubtedly do much to establish an environment in the community that is conducive for families to thrive free of crime and the fear of crime. The data collected by ShotSpotter is made accessible to the community so that they can have accurate knowledge about the state of the City.

For questions regarding this report, please contact Captain Ersie M. Joyner III, at (510) 773-0411.

Respectfully submitted,

Sean Whent
Interim Chief of Police
Oakland Police Department

Prepared by:
Ersie M. Joyner III
Captain of Police
Oakland Police Department

Item: _____
Public Safety Committee
May 13, 2014