Lafayette police using gunshot detection devices in city | Crime/Police

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BY KATIE GAGLIANO | Staff writer, Katie Gagliano February 15, 2024

The Lafayette Police Department is four months into testing a new component of its surveillance network: acoustic gunshot detection sensors.

The sensors, from Atlanta-based Flock Safety, are solar-powered microphones triggered by gunshots or gunshot-like sounds.

A machine learning algorithm analyzes collected audio in 5-second increments. If a gunshot is detected, the clip will be transmitted to Flock's cloud-based management and storage system for further analysis. The location of the gunfire is triangulated between three sensors based on how long it takes the sound to reach each sensor, the company said.

Lt. Brad Robin with the Lafayette Police Department said the agency currently has 60 sensors installed across one square mile in the city.

The installation area is split into two zones: one section covers from North University Avenue to Walker Road to Hebert Road to West Willow Street, while the other section covers from North University Avenue to Interstate 10 to NW Evangeline Thruway to West Willow Street, he said.

The covered area falls within Precinct 1, he said. The precinct recorded 11 of the department's 29 investigated homicides of 2023, Sgt. Stephen Bajat with the Lafayette Police Department's homicide and violent crimes division said in an early January interview with the Acadiana Advocate.

Flock Safety claims the system can alert officers to the presence of gunfire within 60 seconds of the sound being detected and can triangulate the location of the gunshots to within 90 feet of their origin. The company says on its website that its product has a 90% accuracy rate.

Robin, who until a recent promotion was the department's sergeant of planning and research, said he had been considering using competitor SoundThinking's ShotSpotter system until grant funding for the more expensive system fell through.

LPD was already using Flock Safety's license plate reader system when they unveiled their gunshot detection system, Raven, in 2021. The company offered free one-year trials for police departments; beyond that, the company has also touted its product as a more cost-effective alternative to competitors like SoundThinking's ShotSpotter.

LPD signed up to test the Raven system in December 2021, and the sensors were finally installed between August and October, Robin said.

The department has already signed a $25,000 deal to use the system for another year, from October 2024 to October 2025. The money came from the department's surveillance camera budget and was signed off on by LPD's command staff and past LCG CAO Cydra Wingerter and Mayor-President Josh Guillory, he said.

The lieutenant said the contract might be expanded to cover more areas of the city. Each additional square mile of sensors would cost $25,000, he said.

Robin said the department's goal for the technology is to lessen the time it takes officers to respond to gunfire, more quickly locate the gunshots and collect more evidence of gun crimes, like casings, that can be entered into a federal database that helps determine if the same gun was potentially used in multiple shootings.

The lieutenant said the sensors could also help guide the installation of surveillance cameras or influence patrol patterns if gunfire is repeatedly recorded in a certain area.

Robin said on Jan. 31 that officers had received 55 gunshot alerts in the past 30 days.

“I personally have gone on calls with the Raven system where people will call in saying that there were gunshots within the neighborhood, but it’s spread out. With this, I drove up to the location that the Raven said was where it happened at, and as soon as I drove up, the neighbors were telling me this is where it happened. It was about 25 yards from the actual location I was at. Instead of driving around trying to figure out where these shots are, it tells you a more precise location,” Robin said.

Robin said he was sensitive to privacy concerns when selecting a system to use.

According to Flock Safety, all data collected through their products is encrypted at the device and cloud storage level and is deleted permanently after 30 days. Robin said if a clip needs to be stored for evidence purposes, it’s migrated to the police department’s evidence.com portal.

In a recorded webinar on the Raven product, a Flock Safety representative said the system cannot be accessed to indiscriminately listen to any live audio in range of the microphones. Clients can only access the brief clips of gunfire or gunfire-like sounds uploaded to the cloud.

“We didn’t want anything that you could sit there and listen to 24/7. It needed to be something that was only for that specific reason — gunshot detection — and that’s the only thing we hear. We can’t go into the system or anything like that,” Robin said.

Acoustic gunshot detection systems have been under scrutiny for years, with groups like the American Civil Liberties Union expressing concerns about everything from the technology’s effectiveness at discerning between gunshots and other loud noises, like a car backfiring or fireworks, to the potential for over-policing of minority communities.

Most critiques have specifically named SoundThinking’s ShotSpotter system, which is currently in use in more than 150 cities in the United States and is also expanding internationally. The company was founded in 1996 and its gunshot detection system was its first product, according to SoundThinking.

Chicago is one of the largest metropolitan adoptees of ShotSpotter. From 2018 to 2021, the city spent $33 million on its ShotSpotter system, a report from the Office of the Chicago Inspector General said.

The report found that of the 50,176 ShotSpotter alerts Chicago police officers received between January 2020 and May 2021, officers found evidence of a gun-related crime at 9.1% of the scenes they responded to and only 2.1% of the alerts resulted in an investigatory stop, the report said.

An analysis published in the Journal of Urban Health in 2021 looked at 68 large metropolitan counties in the United States from 1999 to 2016 and assessed if there was a difference in the number of firearm homicides, murder arrests and weapons arrests once ShotSpotter was implemented.

"We found no difference in county-level homicides, murder arrests, and weapons arrests for large metropolitan counties with and without ShotSpotter technology, controlling for various county- and state-level demographics as well as state firearm laws," the analysis said.

SoundThinking has vigorously defended its product in public statements.

The Acadiana Advocate could not find long-term data or outside studies on the efficacy of Flock Safety's Raven system, likely because of the product's recent entry into the market.

Robin said the Lafayette Police Department is not currently keeping firm data about the system and its alerts, including whether alerts are the result of gunfire or if officers collected evidence of a gun-related crime at the location of the alert. The lieutenant said the department is still early in its adoption of the system.

The lieutenant said they're working with Flock Safety to compare the Raven alerts to 911 data to assess how accurate the system is and may in the future add a field to their officer reports to record information about any Raven alerts associated with the call.

Robin said to his knowledge there has only been one confirmed false positive alert and one shooting that the Raven sensors failed to pick up. In the first instance, the sensors mistook metal repeatedly striking metal as gunfire and in the second case the shooting, though beside a sensor, occurred inside a vehicle.

He said the department was in touch with Flock Safety and the clips were used to better train the machine learning system.