DIGITAL FOURTH

The Massachusetts campaign to protect digital data from unconstitutional government surveillance

March 11, 2024

RE: SUPPORTING Councilor BURNLEY'S PROPOSAL TO TERMINATE THE SHOTSPOTTER CONTRACT IN SOMERVILLE

Dear members of the Somerville City Council,

Digital Fourth is a volunteer-based civil liberties organization in Greater Boston, founded in 2012, that focuses on issues of privacy, surveillance and the Fourth Amendment. We have members who live and work in Somerville, and we helped the City formulate its Surveillance Oversight Ordinance.

The aim of the Ordinance was to equip members of the City Council and the public with enough information about the surveillance technologies used by City agencies to form their own opinions as to whether, and under what circumstances, those technologies should continue to be used. To that end, City agencies submit annual reports on each technology, and organizations like ours identify deficiencies and problems with that reporting.

Councilor Burnley is proposing to begin an official discussion with the Mayor's administration to follow the lead of Chicago and other major cities in ending the use of ShotSpotter. This letter supports that proposal, and explains what ShotSpotter really

does, whether it really works, where ShotSpotter operates in Somerville, and the little we know about Somerville PD's proposed "Gunshot Detection Expansion." We understand the ACLU of MA also supports an end to the contract.

1. **<u>What ShotSpotter Really Does</u>**

The brief description provided by Lt. Sheehan to the Legislative Matters Committee of what ShotSpotter does is as follows:

> *"ShotSpotter is a gunshot detection service that utilizes 35 sensors installed in the city's coverage area to identify and locate gunfire. Sensors detect noises suggestive of gunshot and trigger only when 3 different sensors detect a gunshot-like sound at the same time to determine location. ShotSpotter records gunshot-like sounds and does not record video."*

This description leaves out everything that would make one concerned about the privacy implications of this technology. First, the "sensors" are in fact always listening, much like an Alexa unit is always listening for the trigger word "Alexa." They are listening not only for actual "gunfire", but for anything that ShotSpotter's artificial intelligence software has previously chosen to class as a "gunfire-like sound." It can and does trigger in response to sounds of firecrackers[1] or of cars backfiring. When it triggers, ShotSpotter HQ sends Somerville PD an audio clip of the time surrounding the "gunfire-like sound." That audio clip, of course, can include any sound the sensors recorded, including human conversations. Massachusetts police have in fact attempted to introduce conversations recorded in this way into evidence.[2] So, it's a much broader audio monitoring technology than this description makes out.

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[1] In January 2024 in Chicago, a police officer, responding to an erroneous ShotSpotter alert, opened fire on a teenager who had set off a firecracker: https://www.cbsnews.com/chicago/news/copa-body-camera-video-auburn-gresham-shots-fired-fireworks-shotspotter/.

[2] See Fraga, B., "ShotSpotter recording of street argument raises potential privacy issues", January 11, 2012, available at https://www.southcoasttoday.com/article/20120111/News/201110339.

2. Does ShotSpotter Really Work?

Lt. Sheehan reports,

> *"During Fiscal year 2023 we received 16 ShotSpotter alerts and a total of 24 shell casings were recovered. ShotSpotter has been effective in achieving its identified purpose."*

Of course, this tells us nothing about whether ShotSpotter is effective. For all we know from this information, all 24 shell casings could have been deposited in connection to one incident of gunfire, and the other 15 ShotSpotter alerts could have been false alarms. In fact, given that the ShotSpotter coverage area is notable for its trash complaints, there's not even any guarantee that casings found near an alert relate to the same incident at all.

To really answer this question, we have to be clear about what we mean. ShotSpotter is sold to municipalities above all on the basis that it reduces gun violence. But neither this report, nor any other evidence so far presented by Somerville PD, shows that ShotSpotter in Somerville reduces gun violence. Somerville PD admits they don't "audit" the program. There's no information on how the ShotSpotter alerts affected anything. There's no reporting from Somerville PD on false positives or false negatives; no data on whether anybody was arrested, prosecuted, or convicted for any gun-related crimes in response to a ShotSpotter alert; no data on whether there were even any incidental arrests, and if so, what for.

Over in Cambridge, and back in 2021, former Police Commissioner Bard, in response to the concerns of Councilors, provided some information. It turned out that **70 of 105 ShotSpotter activations were false alarms**, and were in fact "other explosive-like sounds" like cars backfiring. Bard's memo did not quantify the waste in police resources, or the reduction in police responses to non-ShotSpotter incidents, resulting from the 70 false alarms, but that's a lot of mobilizations. His memo said that eight people got medical treatment, an average of 51 seconds quicker, but didn't say whether their

incrementally quicker treatment made any difference. Over the course of six years, there were 13 arrests in response to the 35 ShotSpotter activations confirmed to be gunshots, versus 6 arrests in 32 gunshot incidents in non-ShotSpotter areas. So, **the marginal number of arrests that would not have happened without ShotSpotter, over six years, was at most 7.** Bard did not report what any of the arrests were for, or whether those arrests resulted in convictions. We have no reason to suppose that these proportions would be substantially different, if Somerville PD were to conduct an audit.

However, even this more detailed information from Cambridge doesn't enable us to assess the effect of ShotSpotter on rates of gun violence. For that, there is only one independent study available, which was conducted in St. Louis, MO.[3] That study found "no evidence that the implementation of ShotSpotter resulted in more arrests related to gunfire incidents", and that "overall crime reporting appears not to have been impacted by the implementation of ShotSpotter." In other words, even with the wealth of data provided in the context of a bigger city, **ShotSpotter cannot be shown to have any effect at all on gun violence.**

[continues overleaf]

[3] See https://static1.squarespace.com/static/58a33e881b631bc60d4f8b31/t/603923e3a32c3f57d67dabec/1614357476874/Measuring+the+Effects+of+Shotspotter+on+Gunfire+in+St.+Louis+County%2C+MO.pdf

3. Where Does ShotSpotter Operate in Somerville?

Lt. Sheehan breezes past the notion that ShotSpotter might have disparate impacts on particular neighborhoods. In response to the question, "*Whether the civil rights and liberties of any communities or groups, including communities of color or other marginalized communities in the city are disproportionately impacted by the deployment of the surveillance technology"*, he simply writes, *"None."*

Map showing census tracts containing at least one ShotSpotter sensor, from https://www.wired.com/story/shotspotter-secret-sensor-locations-leak/, Feb. 22, 2024

Thanks to explosive new journalism from WIRED last week, we can prove he's wrong. We now know for the first time every census tract in Somerville where at least one ShotSpotter sensor is located. They're in Ten Hills, Assembly Square, heavily Hispanic East Somerville, Winter Hill, Prospect Hill and Boynton Yards (Wards 1-4) (see map on next page). In fact, for none of the technologies in the whole Annual Surveillance Report do Somerville PD even state that there are any disproportionate impacts at all, let alone suggest that there's anything that they should do to mitigate them. It should not be hard for Lt. Sheehan to understand that there is an equity issue here. The poorer and more diverse folks of East Somerville, living in neighborhoods with constant high levels of traffic noise, including cars backfiring, get constant audio monitoring from "35 sensors" in case there is a "gunshot-like sound." The richer folks of West Somerville don't.

4. What's This Proposed "Gunshot Detection Expansion"?

Lt. Sheehan notes, without actually saying how much it costs, that Somerville's ShotSpotter deployment is "paid for by the Urban Area Security Initiative (UASI)." This regional grant became operative February 2, when the Boston City Council voted to accept the FY2023 UASI grant. None of their materials included a line-item description of what the funding was for, but after the vote, Mayor Wu's office released it to us. **The UASI grant includes a line for "Somerville Gunshot Detection Expansion" in the amount of $90,000.**

Nobody we have spoken to on the City Council knows anything about this. But Somerville PD must know. This funding would not have been requested had Somerville PD not asked for it. They know that both Councilors and community organizations have significant concerns regarding ShotSpotter, and view it as both invasive and controversial. Even treating this as an "upgrade" rather than as a whole new technology, the Surveillance Ordinance still requires City Council knowledge and approval:

> *"The department shall not use the new surveillance capabilities of the technology until the requirements of section 10-65 are met [i.e., until the Council has reviewed and approved the upgrade in question], unless the mayor, or his/her designee, determines that the use is unavoidable; in that case, the mayor shall request city council approval as soon as possible."*

This has clearly not happened. **Somerville PD appears to be trying to move ahead with an expansion, to an unknown area of the City, without complying with the Ordinance.** In consequence of all of this, we urge the City Council to move forward Councilor Burnley's proposal.

Sincerely,

A Marthews

Alex Marthews, Chair, Digital Fourth.