APPENDIX A: SURVEILLANCE TECHNOLOGY IMPACT REPORT

Department or Division:	Somerville Police Department (SPD)
Compliance Officer (name and position):	Lt. Jeff DiGregorio
Submitted by:	Lt. Jeff DiGregorio
Date:	
Surveillance Technology:	ShotSpotter

X	**Please identify the purpose(s) of the proposed surveillance technology. Select ALL that apply by entering "X" in the left column.**
x	Identifying and preventing threats to persons and property and preventing injury to persons or significant damage to property
x	Identifying, apprehending, and prosecuting criminal offenders
x	Gathering evidence of violations of any law in criminal, civil, and administrative proceedings
x	Providing information to emergency personnel
	Documenting and improving performance of City employees
	Executing financial transactions between the City and any individual engaged in a financial transaction with the City
	Preventing waste, fraud, and abuse of City resources
	Maintaining the safety and security of City employees, students, customers, and City-owned or controlled buildings and property
	Enforcing obligations to the City
	Operating vehicles for City business
	Analyzing and managing service delivery
	Communicating among City employees, with citizens, or with third parties
	Surveying and gathering feedback from constituents
	Other (Describe): If the surveillance technology is used for a purpose not listed above, does the purpose comply with the surveillance use policy? ___ Yes ___ No

Complete ALL of the following items related to the proposed surveillance technology. Be as specific as possible. If an item is not applicable, enter "N/A." Do NOT leave fields blank.

1. Information describing the surveillance technology and how it works:

ShotSpotter is a gunshot detection service that utilizes thirty five sensors installed in the city's coverage area to identify and locate gunfire. Sensors "listen" for gunshot-like sounds and trigger only when detecting an impulsive sound that is instantaneous and sharp. When at least three different sensors detect a gunshot-like sound at the same time and determine a location, they send a short audio snippet to ShotSpotter headquarters where trained ShotSpotter personnel listen to a short computer-generated audio snippet of the gunfire to double check that it is actually gunfire. Confirmation results in an alert being sent to authorized Law Enforcement personnel for immediate emergency response. They are also provided with the audio snippet to better understand the number, sequence, and caliber of rounds fired.

There is also a ShotSpotter Investigative Portal that houses additional functionality and information provided on the ShotSpotter activations, but this software is limited to Detectives, Crime Analysts, and supervisors.

ShotSpotter has led to the arrest of violent offenders and saved the lives of gunshot victims by increasing the response time of emergency services (Police, Fire, Cataldo). One such incident this year involved a victim with multiple gunshot wounds. The officer was able to respond, prior to being dispatched by 911. This technology allowed the Office to render aid as additional emergency personnel responded, ultimately saving the life of this innocent victim. In this particular case, 3 individuals were arrested in relation to this senseless crime.

In 2020 (through 12/10/20), there have been four confirmed shootings / shots fired incidents where no 911 call was made to law enforcement. ShotSpotter allowed SPD to respond immediately. In one of these four incidents, responding officers located the victims hiding (uninjured) and the investigation later led to the recovery of a firearm and an arrest for its possession.

For more detailed information about ShotSpotter, please see *Privacy Audit & Assessment of ShotSpotter, Inc.'s Gunshot Detection Technology, prepared by The Policing Project at NYU Law*, attached.

a. Authorized use – the uses that are authorized, the rules and processes required before that use, and the uses that are prohibited (10.64.b.2):

All sworn officers, 911 personnel, and Crime Analysis personnel have an account to monitor ShotSpotter for alerts. Each person has their own username and password. Alerts are sent to individuals via their SPD issued cell phones via the ShotSpotter App. General Order #134 entitled 'Shotspotter' details the policy and procedure for responding to a shotspotter activation. This includes documenting such incidents into the Computer Aided Dispatch program as an alert, code 991, and illustrating instructions and guidelines in regards to the duties of the first responding officers and for follow up investigators.

The ShotSpotter Investigative Portal is a computer software.

b. Training – the training, if any, required for any individual authorized to use the surveillance technology or to access information collected by the surveillance technology, including whether there are training materials (10.64.b.9):

Instruction on use of the program is given during an in service training course/field training. The Administrator for ShotSpotter is determined by the Chief of Police, currently the Administrative Captain.

The application is relatively simple to use and the functionality is basic. If a shot is indicated, the location is given on a map; a short audio snippet is made available for playback; and when available, additional situational awareness information may be included such as, "Fully automatic weapon."

2. Information on the proposed purpose(s) for the surveillance technology (10.64.b.1):

This technology allows police to respond quickly to incidents of gunfire when 911 calls are delayed or not received. It gives police the opportunity to locate potential gunshot victims for medical attention, intervene in an active shooter scenario, and / or potentially identify or apprehend suspects. ShotSpotter's purpose is improving public safety. In 2020 (through 12/10/20), ShotSpotter has detected 10 confirmed shootings/shots fired incidents. In four of those incidents, no 911 calls were received. One of these four investigations led to the recovery of a firearm and an arrest for its possession.

The Portal is used in an investigative capacity.

3. Information describing the kind of surveillance the surveillance technology is going to conduct and what surveillance data is going to be gathered (10.64.b.3):

The technology will preserve an audio snippet of gunfire for police to understand the number, sequence, and caliber of rounds fired. There is no personally identifiable information in any audio snippet and the length is limited to 1-2 seconds before/after the gunshot-like noise. The technology also provides an estimated latitude and longitude where the shots were fired, aiding police with locating potential victims and/or shooters.

The Investigative Portal allows investigators access to historical incidents with additional information such as time-stamped steps taken by the ShotSpotter Facility (when reviewed, when acknowledged, when classified, changes to classification etc).

The portal also allows users to review noises that were captured by ShotSpotter (detection of an impulsive sound that is instantaneous, sharp, and gunshot-like that is detected by at least three different sensors at the same time), but then classified as something other than gunfire such as firecrackers, vehicle backfire, motorcycle, thunder, construction, etc.

The functionality exists due to the possible occurrence of false negatives. There are instances where a gunshot is falsely classified as something else, such as a firecracker. If Law Enforcement learns of a gunfire incident (e.g. receive a 911 call or locate a gunshot victim), Investigators may access the audio if it met the threshold of activation. These audio snippets are typically a few seconds long and are subject to the same privacy protections as recordings of gunfire detection.

a. Data access – the individuals who can access or use the collected surveillance data, and the rules and processes required before access or use of the information (10.64.b.4):

All sworn officers, 911 personnel, and Crime Analysis have access to the Shotspotter application and are able to playback the recordings. Detectives and Crime Analysis have access to the Investigator portal of the applications. This gives more information and enables them to access gunshot-like audio snippets.

b. Data protection – the safeguards that protect information from unauthorized access, including, but not limited to, encryption, access-control, and access-oversight mechanisms; (10.64.b.5)

All users must be registered and access is only given through login credentials with an active account.

c. Data retention – the time period, if any, for which information collected by the surveillance technology will be routinely retained, the reason that retention period is appropriate to further the purpose(s), the process by which the information is regularly deleted after that period has elapsed, and the conditions that must be met to retain information beyond that period (10.64.b.6):

The audio is overwritten every thirty hours unless gunshots are detected and the audio is preserved for length of investigation as applicable

d. Public access – if and how collected surveillance data can be accessed by members of the public, including criminal defendants (10.64.b.7):

Audio may be subject to public information laws and all requests would be vetted through the City's law department. Recordings and other information about gunshots detected may be used as evidence in criminal cases.

e. Third-party data-sharing – if and how other city or non-city entities can access or use the surveillance data, including any required justification and legal standard necessary to do so, and any obligation(s) imposed on the recipient of the surveillance data (10.64.b.8):

Information on gunshot data may be shared with law enforcement agencies depending on need.

Authorized personnel within UASI partner law enforcement agencies are notified of gunshots and have access to the same information. They implement the same privacy protections and safeguards. Cities include Everett, Chelsea, Revere, and Cambridge.

4. The location(s) it may be deployed and when:

Somerville is provided with approximately one square mile of ShotSpotter coverage. Within the coverage area, ShotSpotter engineers determine where to place sensors so as to allow even gunshot detection throughout the area. This technology was installed with the idea of looping in sensors from Cambridge as well and working in conjunction with them for maximized coverage.

5. A description of the privacy and anonymity rights affected and a mitigation plan describing how the department's use of the equipment will be regulated to protect privacy, anonymity, and limit the risk of potential abuse:

ShotSpotter has taken aggressive steps to protect privacy and anonymity rights. Human voices and street noise will never trigger a sensor because they do not produce an instantaneous sharp sound and they are not loud enough to be picked up by three or more sensors. Per Shotspotter, it is highly unusual for a human voice to be included in a snippet. For this to occur, the voice must be loud enough to be heard over the gunfire. There is no personally identifiable information included in any audio snippet. Additionally, the audio length is limited to 1-2 seconds before/after the gunshot-like noise.

6. The potential impact(s) on privacy in the city; the potential impact on the civil rights and liberties of any individuals, communities or groups, including, but not limited to, communities of color or other marginalized

communities in the city, and a description of whether there is a plan to address the impact(s):

The sensors are distributed to maximize effect within the mile of coverage. The area of coverage is based on crime statistics approximately 10 years ago when the technology was installed. The sensors were installed in the area closest to East Cambridge to maximize coverage with aid from their sensors The goal of placement is maximized coverage in areas where shootings were most prevalent and not focus on particular groups or populations. The SPD does not have access to audio other than what is sent from Shotspotter. Shotspotter monitors for alerts, and only sends that sound clip with possible gunshots.

7. An estimate of the fiscal costs for the surveillance technology, including initial purchase, personnel and other ongoing costs, and any current or potential sources of funding:

UASI funds are used for installation and maintenance so there is no cost to the city.

8. An explanation of how the surveillance use policy will apply to this surveillance technology and, if it is not applicable, a technology-specific surveillance use policy:

This technology does not provide law enforcement with any personally identifiable information. However, as this technology captures audio and provides locations, the city's surveillance use policy applies.

a. Oversight – the mechanisms to ensure that the surveillance use policy is followed, including, but not limited to, identifying personnel assigned to ensure compliance with the policy, internal record keeping of the use of the technology or access to information collected by the surveillance technology, technical measures to monitor for misuse, any independent person or entity with oversight authority, and the sanctions for violations of the policy (10.64.b.10):

The Administrative Captain oversees Shotspotter, Crime Analysis tracks gunfire incidents, and the ShotSpotter Investigative Portal provides alert tracking, as does SPD's CAD system.

ShotSpotter is reactive to gunshots/potential gunshots. Triggers only occur when sensors detect an impulsive sound that is both instantaneous and sharp. Police cannot manipulate the system to receive audio recordings otherwise. The only audio accessible by SPD is what is sent via Shotspotter after an alert is detected.

Regarding the use of the available functionality, log-in information of officers would be documented and could be requested through Shotspotter.