

## FA24 ShotSpotter Project Rescoping

SPARK DS539

### 10/30 Client Meeting Minutes

**Attendees:** Abby, Honglin, Stephanie, Andy, Tony, Julie, Sungwoo, Suraj

**Time:**

### Client Presentation

#### Important Links Shared During Presentation:

- ShotSpotter in Cambridge Findings – [https://docs.google.com/document/d/1mZoGL\\_Aca0WnIk8kq-YWDjyL-1dfFQ2Isi3wfuVARNA/edit?usp=sharing](https://docs.google.com/document/d/1mZoGL_Aca0WnIk8kq-YWDjyL-1dfFQ2Isi3wfuVARNA/edit?usp=sharing)
- BRIC Allocation FY24 – <https://www.boston.gov/sites/default/files/file/2024/09/EOPSS%20BRIC%20Allocation%20FY24%20%24850000.pdf>
- Somerville PD Statement on Exhaust Engines Activating ShotSpotter – <https://x.com/SomervillePD/status/1849873068035805448>
- ShotSpotter Authorization Statement from Cambridge – <https://drive.google.com/file/d/1CQNPymtchukCElytUGXjRJEbV-NTOEfi/view>
- Surveillance Technology Ordinance – [https://library.municode.com/ma/cambridge/codes/code\\_of\\_ordinances?nodeId=TIT2A\\_DPE\\_CH2.128SUTEOR](https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT2A_DPE_CH2.128SUTEOR)
- Yearly data should be available through the American Community Survey (note from Julie)
- Shotspotter Routinely Missing Shootings — <https://southsideweekly.com/shotspotter-routinely-missed-reported-shootings-city-data-shows/>
- Ziba housing data that might be more accurate than previously given housing data: <https://www.cambridgema.gov/gis/mapgallery/assessingandtaxmaps>
- precise timeline in one of these files <https://www.muckrock.com/foi/boston-3/grants-contracts-and-agreements-related-to-s-hotspotter-installation-in-cambridge-12413/>
- From Julie Lee: ACS recently for Boston, you can get demographic data at the level of census tract [https://data.census.gov/table?q=040XX00US25.25\\$8600000](https://data.census.gov/table?q=040XX00US25.25$8600000) we can talk later about how to find cambridge
- Census data – [https://data.census.gov/table?q=DP05&q=050XX00US25025\\$1400000](https://data.census.gov/table?q=DP05&q=050XX00US25025$1400000)
  - Currently TBR only have access to the 2023 data but we can send a request and get access to previous years – do not know if they have data back to 2010

#### Client Deliverables

2 deliverables that the client wants the students to complete:

- need to be produced in a google sheet and want data visualizations
  - scrape the shotspotter date and time and if there was an alert
  - Police case?
  - Victim or not?
  - Any additional notes on a shot? – looking for trends in the shots that are fired

- Would also like to look for trends in gentrifications as well

**Result:** a written report to explain the challenges you faced and why, describe correlation methodology,

want the data, correlation analysis and report on the whole process

**Rescoped PD –**

<https://docs.google.com/document/d/1ZHPOGJtrV2STJd6seK9JZlvt7jfN3JO6czlSNmklhc/edit?usp=sharing>

## Student Presentation and Questions

## Action Items

- Abby to follow up with Ziba for additional housing data
- Abby Honglin and Tony to touchbase on all information shared
- Tony and Honglin to get team onboard and get PD up to date
- Tony to make sure that all parts of the PD are accurate and that the google folder has situated


## Questions

- To what degree is there a correlation between ShotSpotter deployments (device activation/SWAT team dispatch) and gentrification (house prices: rental unit prices/house sale prices & demographic shift) in Cambridge, MA?
  - By deployment, do we mean Bridgestats data
    - Answer: Yes, Deployments are when there is a successful deployment of police responding to the location where ShotSpotter has detected a "gunshot"

- By gentrification, do we mean housing price, and census demo data (income, race, ethnicity)
  - Answer – zillow is not reliable because it lacks rental price and has time inconsistency.
- If so, previous semesters have done similar analysis with deployment data from FOIA from 2015-2022 against housing price and demographic shift.

What additional approach should we try?

- TBR team thinks Zillow data lacks rental data, and is inconsistent in time. Abby checks with Ziba for housing data other than zillow.
- Census data is every 10 years, so inconsistent. Spark to request last 10 year in spreadsheet format):

 2023 CET Presentation Expanded Slide Set - Compressed (1).pdf

- Stepping back, Bridgestats data are a proxy for how many shots happened. Any correlation we run draws a relationship between the number of crimes and gentrification instead of use of shotspotter and gentrification. We would need data on when shotspotter is initially placed to draw correlation between use of shotspotter of gentrification
  - Answer: All the crime data, not just shotspotter. Reason why questions have been separated (in revised scope) is because TBR wants to look at effectiveness on ShotSpotter in Cambridge. Looking at changes over time with incidents (trends in demographics before incident and after incident as example) will help TBR decide. Even if information is not coming from ShotSpotter alert, we do want to see the relationship between incident and gentrification, even if ShotSpotter is not directly tied into this measurement. For crimes, we also want all types of crime data, not just crime related to ShotSpotter
  - Would like to find the effectiveness of shotspotter in terms of gun violence happening in a specific area or not!! NOT if or when a shot has been fired – two different questions but we are focusing on the first
  - This will help to answer questions that refer to the demographics and gentrification portion

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- How effective is shotspotter at reducing / addressing gun violence in Cambridge?

- we would need when shotspotter is place, and number of gun violence by year. But currently Bridgestats does not have data on when shotspotter is placed.
  - Answer: They went live officially in 2014. but they were installed in the summer of 2013. Stephanie can forward the email. We know that all Shotspotter devices were installed in 2013 → Rough timeline: Grants, Contracts and Agreements related to ShotSpotter installation in Cambridge • MuckRock. We need to look at the data in the neighborhoods where hotspots does and does not exist and this NEEDs to be apart of our analysis to help answer the questions how accurate shotspotter actually is – this will answer the question on whether or not shotspotter is actually helping with gun violence
- Question we could answer with Bridgestats data is how effective Shotspotter is at detecting gun violence, which have been addressed by the south side article.
  - Answer: this should not be difficult to answer – you should be able to quantify the number of shots generally and then do comparative analysis between the shotspotter catching of shots in comparison to it not working. Anything that is outside of the Cambridge area you do not worry about Bridge stat will help to get a number of shots fired generally - this gives us our 'before' and 'after'. What were the stats both before and after shotspotter being live. If you can see that there was no decrease then we can clearly see that Shotspotter has not made a large impact – this will help to determine the necessity of shotspotter in a place like cambridge
  - change in number of crimes
  - Change in demographics before and after a gun related incident
  - If there was a Shotspotter alert

- TBR would like this data cleaned and exported into a legible format, preferably as a spreadsheet.
  - Prefer Longitude and longitude data, but if not Corner's data is fine.

## **Proposed Plan**

### **A. Primary Deliverables**

1. A detailed web crawl + rhetoric analysis that identifies trends in support of the ShotSpotter program amongst elected officials, cops, and other members of government
2. A report that showcases potential correlations between Shotspotter deployments and gentrifications.

### **Deliverable Questions**

The following questions will be answered by the student team in the final deliverable (report + dashboard)

- What is the relationship between Shotspotter/ SoundThinking (various) and Gentrification (locations: The Port, The Coast, Cambridgeport, Riverside, public housing, etc. / types of people: homeless, low income, youth, etc. / Types of activities: loitering, etc.)?
- How (increase, support, expansion, etc.) has public / city council rhetoric about ShotSpotter in Cambridge changed/shifted during the research period (2013-2024)?
- What do the city councilors / public officials/police/experts/ community members say is needed in order to end the shotspotter contract?
- What is the rationale for the use of Shotspotter?
- When, where, by whom, and how does demographic and geographic-specific language figure in the discussions among public officials (at city council hearings) relevant to Shotspotter?
- How does the Shotspotter call response data figure in discussions? How do legal considerations figure in the discourse?

### **B. Research Parameters**

The following parameters are set guidelines that students will follow & base research off of, they are not direct deliverable questions but rather a list of questions that'll encourage students to think critically about the bigger vision behind this project.

### Research Parameters

- A. Framework: PIC (Prison Industrial Complex) Abolition
- B. Objective: To end the shotspotter contract
  - How do we convince the city council and city manager to end the ShotSpotter contract?
  - What arguments will convince the city council to end the ShotSpotter contract?
- C. Toward developing a popular campaign to end the Shotspotter contract, the population of impacted neighborhoods were most concerned if there was a relationship to gentrification / housing security.
  - To what degree is there a correlation between ShotSpotter deployments (device activation/SWAT team dispatch) and house prices (rental unit prices/house sale prices) in Cambridge, MA?
- D. How effective is shotspotter at reducing / addressing gun violence in Cambridge?

### **C. Data Research Sources / Origins**

- a. 2016 - 2024 Cambridge Bridgestats Data on various crime data
- b. Cambridge Public Housing Data
- c. ShotSpotter Location & Activations Data (from previous project)
- d. Cambridge Census Data (from previous project)
- e. Cambridge Housing Data (from previous project)
- f. Homelessness Datasets (rise, recent trends, developments, etc)
- g. Twitter, City Council Meeting Minutes, etc

### **D. Student Team Project Assignments**

Sungwoo – Homelessness & Public Housing Analysis (Scrum master + DI framework)  
Suraj – Bridgestats Analysis  
Melody – Rhetoric Analysis