Key Findings from Fall 2024

- **Housing Prices and Gentrification:** Initial findings indicate a potential correlation between ShotSpotter deployments and rising housing prices, particularly in historically low-income neighborhoods. This suggests a connection between surveillance technology and gentrification.

- **ShotSpotter Accuracy Issues:** The advertised 97% accuracy rate of ShotSpotter was contradicted by actual findings, which revealed a detection accuracy of 55.8%. This discrepancy raises concerns about its reliability as a public safety tool.

- **Community Impacts:** Over-surveillance and the disproportionate targeting of marginalized communities were identified as critical issues, alongside the risk of displacement due to increased property values.

Recommended Next Steps:

- Data Collection and Cleaning
  - Expand Data Sources and find new data that can answer the question for Black Response regarding demographics on Shotspotter. Acquire additional datasets to supplement the BridgeStat and Cambridge Property datasets.
  - Consider sources such as:
    - Local community surveys on public perceptions of safety.
    - Police response times and outcomes in ShotSpotter-deployed neighborhoods.
    - Updated housing price data from Q4 2024.

- Refine Data Quality
  - Recheck the current datasets to ensure no errors or inconsistencies persist.
  - Validate the accuracy of keywords used for data extraction (e.g., "gunshot," "shots fired").

- Expand Data Analysis and Visualization
  - Use Arcgis tools to enhance spatial analyses of housing prices, demographic trends, and ShotSpotter locations by Refine mapping layers to improve clarity in

visualizations. More detailed and new dataset other than Bridgestats and Cambridge Property datasets will make visualization better.

- ○ Create side-by-side comparisons of neighborhoods with and without ShotSpotter deployments.
- ○ Incorporate demographic overlays (e.g., income levels, racial composition) into GIS maps.

- Statistical Analysis:
  - ○ Conduct multivariate regressions to control for confounding variables such as economic growth and city-wide development policies.
  - ○ Explore temporal trends using time-series analysis to better understand causation versus correlation.

- Investigate false positives and false negatives in the existing dataset.
- Evaluate biases in ShotSpotter's detection patterns to understand potential impacts on marginalized communities.