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## “Bang!”: ShotSpotter Gunshot Detection Technology, Predictive Policing, and Measuring Terry’s Reach

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## **“BANG!”: SHOTSPOTTER GUNSHOT DETECTION TECHNOLOGY, PREDICTIVE POLICING, AND MEASURING TERRY’S REACH**

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Harvey Gee\*

*ShotSpotter technology is a rapid identification and response system used in ninety American cities that is designed to detect gunshots and dispatch police. ShotSpotter is one of many powerful surveillance tools used by local police departments to purportedly help fight crime, but they often do so at the expense of infringing upon privacy rights and civil liberties. This Article expands the conversation about ShotSpotter technology considerably by examining the adjacent Fourth Amendment issues emanating from its use. For example, law enforcement increasingly relies on ShotSpotter to create reasonable suspicion where it does not exist. In practice, the use of ShotSpotter increases the frequency of police interactions, which also increases the risk of Black Americans becoming the victims of police brutality or harassment. Such racialized policing facilitates the status quo of violence and bias against Black Americans.*

*This Article uses recent cases from the D.C., the Fourth, and Seventh Circuits as a foundation to argue that officers arriving on the scene to investigate a gunshot sound they were alerted of via ShotSpotter technology should not be allowed to use the gunshot sound as the basis of reasonable suspicion and subsequent search and seizure. At the heart of this Article is the argument that the use of ShotSpotter technology is unconstitutional under *City of Indianapolis v. Edmond* because it is not used for a specific law enforcement purpose beyond preventing crime generally. Under the reasoning and result of *Edmond*, law enforcement is prohibited from using ShotSpotters unless officers have reasons for individualized suspicion.*

*Spending more money on ineffective ShotSpotters placed in “high crime” neighborhoods across America is not the answer to reducing gun violence. As seen with Oakland’s successful Ceasefire program, there are innovative ways to simultaneously build trust in communities and curb gun violence. Indeed, properly designed group violence reduction strategies will foster and maintain dignity for participants in a program tailored to saves lives and promote community healing.*

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## INTRODUCTION

Consider this: on New Year's Eve 2021, 26-year-old Nate was walking alone down an almost empty street in Bayview, San Francisco when

two police officers drove alongside him in their cruiser. One officer said, “I need to talk to you for a second, you need to stop.” Unbeknownst to Nate, the officers were responding to a ShotSpotter detection alert indicating that two gunshots were heard in the area just minutes before. The officers noticed that Nate kept his left hand in the pocket of his puffy jacket. They asked him to take his hand out, and a subsequent pat-down search turned up a Glock 19. Nate’s public defender later found out in discovery that the ShotSpotter sensors recorded the sound of M-80 fireworks, not gunshots. However, none of this mattered. Even though the officers had no reasonable suspicion that Nate had committed or was about to commit a crime, Nate was charged with felony gun possession.

In the past few years, many young, Black men like Nate have been arrested or harassed because they have had the misfortune of being in an area where gunshots were allegedly heard. This injustice is the result of ShotSpotter technology, a rapid identification and response system used in ninety American cities<sup>1</sup> that is designed to detect gunshots and dispatch police. ShotSpotter is one of many powerful surveillance tools—including Stingray cell-site simulators that track the location of cell-phone users in real-time, facial recognition technology, and closed-circuit television cameras—used by local police departments with little oversight. These technologies purportedly help police fight crime, but they often do so at the expense of infringing upon privacy rights. In discussions about the efficacy of these predictive policing technologies and efforts to regulate them, ShotSpotter has received the least attention.

This Article expands the conversation about ShotSpotter technology considerably by examining the adjacent Fourth Amendment issues emanating from its use. For example, law enforcement increasingly relies on ShotSpotter to create reasonable suspicion where it does not exist.<sup>2</sup> Oftentimes, ShotSpotter gives courts a reason to defer to police judgment and practices where initial detentions are brief and police officers’ hunches prove to be correct. This was the case in *United States v. Rickmon*,<sup>3</sup> where a divided Seventh Circuit panel ruled that the sound of gunfire created an “emergency” that justified stopping a “suspect[s]” car. This Article uses *Rickmon* and recent cases from the D.C. and

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1. ShotSpotter is used in ninety U.S. cities, including, Miami Gardens, Milwaukee, Minneapolis, Oakland, San Francisco, and Washington. See *ShotSpotter Frequently Asked Questions*, SHOTSPOTTER, [https://www.shotspotter.com/system/content-uploads/ShotSpotter\\_FAQ\\_June\\_2017.pdf](https://www.shotspotter.com/system/content-uploads/ShotSpotter_FAQ_June_2017.pdf) [<https://perma.cc/TW6A-SUL8>] (June 2017); Chris Weller, *There’s a Secret Technology in 90 US Cities That Listens For Gunfire* 24/7, BUS. INSIDER (June 27, 2017), <https://finance.yahoo.com/news/theres-secret-technology-90-us-145900618.html> [<https://perma.cc/ZR6E-P3Z5>].

2. See discussion *infra* Section I.A.ii.

3. 952 F.3d 876, 881–83 (7th Cir. 2020).

Fourth Circuits as a foundation to argue that officers arriving on the scene to investigate a gunshot sound they were alerted of via ShotSpotter technology should not be allowed to use the gunshot sound as the basis of reasonable suspicion and subsequent search and seizure.

This Article is divided into three parts. Part I begins with a summary of the origins of ShotSpotter technology and describes its growing adoption by police departments nationwide. It analyzes common Fourth Amendment concerns implicated by ShotSpotter, and closely examines recent analysis showing that, while there is no evidence that ShotSpotter reduces crime, there is ample evidence that ShotSpotter is an unreliable technology that increases police deployments and the likelihood that people are wrongfully arrested, detained, or worse. More recently, the City of Chicago Office of Inspector General released its own report, which found that ShotSpotter alerts are unreliable and contribute to wrongful stop-and-frisks by the police in already over-policed Black communities.<sup>4</sup> This Part also draws an analogy between roadblocks created by police to combat crime generally and ShotSpotter's gun detection technology, which has been purchased by police departments to reduce gun violence. While there is informative, extant literature simultaneously about why courts should approve of the continued use of ShotSpotter and the need for federal and state legislatures to regulate gunshot detection technology, less attention has been focused on ShotSpotter's infringement upon Fourth Amendment protections, or the applicability of *City of Indianapolis v. Edmond*<sup>5</sup> in assessing this potential infringement. Here, I argue that the use of ShotSpotter technology is unconstitutional under *Edmond* because it is not used for a specific law enforcement purpose beyond preventing crime generally. Part II analyzes how law enforcement routinely exploit stop and frisks to create an occupied police state. This Part begins with a summary of the *Terry v. Ohio* doctrine and its reasonable belief requirement, then proceeds to examine an emerging jurisdictional split in the Fourth, Seventh, and D.C. Circuits on the Fourth Amendment exigent circumstances exception. Part III examines how racialized policing and the legal system function to facilitate the status quo of violence and bias against Black Americans. This Part concludes with offering prescriptive ideas for reducing gun violence in over-policed communities of color that do not involve ShotSpotter. It considers the divergent approaches taken by major cities such as Oakland and Chicago to address gun vio-

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4. CITY OF CHI. OFF. OF INSPECTOR GEN., THE CHICAGO POLICE DEPARTMENT'S USE OF SHOT-SPOTTER TECHNOLOGY (2021).

5. 531 U.S. 32 (2000).

lence, including innovative reform plans to build trust in communities and curb the continual increase in gun violence.

## I. SHOTSPOTTER SURVEILLANCE TECHNOLOGY

### A. *ShotSpotter Begins*

In 1996, Palo Alto physicist Robert Showen, concerned with growing gun violence in urban America, created ShotSpotter to help communities where gunshots often go unreported.<sup>6</sup> His idea was that the science and technologies used to detect earthquakes could also be used to register gunshots.<sup>7</sup> Showen's innovative idea eventually evolved into ShotSpotter's current iteration: a cloud-based technological system that covers a geographic area with microphones and software to actively monitor for the sound of gunshots.<sup>8</sup> The system consists of a network of twenty to twenty-five powerful sensors per square mile placed to detect the location of a shooting by triangulation.<sup>9</sup> These white, diamond-like sensors contain "microphone[s], GPS for clock data, memory and processing, and have the cell capability to transmit data" and pinpoint the exact location of a gunshot.<sup>10</sup> Typically, ShotSpotter sensors are placed on rooftops and traffic light poles as low as twenty feet above the ground, and immediately alert law enforcement when a gunshot is registered. Based on the ShotSpotter's algorithm, the microphones suppress ambient noises and are triggered only by impulsive noises such as "booms" and "bangs." The system can also pinpoint the location of the gunshot.<sup>11</sup>

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6. See Jay Stanley, *Gunshot Detectors: the ACLU's View*, ACLU (May 29, 2012, 3:37 PM), <https://www.aclu.org/blog/national-security/privacy-and-surveillance/gunshot-detectors-aclu-view> [https://perma.cc/9MZ6-SUV5]; Katherine Kornei, *Physicist Pinpoints Urban Gunfire*, APS PHYSICS: APS NEWS (June 2018), <https://www.aps.org/publications/apsnews/201806/gunfire.cfm> [https://perma.cc/NRF7-WSPP].

7. See Josh Sanburn, *Shots Fired*, TIME (Oct. 2, 2017) <https://time.com/4951192/shots-fired-shotspotter/> [https://perma.cc/4CVL-DFFJ]; see Kornei, *supra* note 6.

8. See Stanley, *supra* note 6.

9. See Jay Stanley, *ShotSpotter CEO Answers Questions on Gunshot Detectors in Cities*, ACLU (May 5, 2015, 9:15 PM), <https://www.aclu.org/blog/privacy-technology/surveillance-technologies/shotspotter-ceo-answers-questions-gunshot> [https://perma.cc/W886-GURL]; Benjamin Goodman, *ShotSpotter – The New Tool to Degrade What is Left of the Fourth Amendment*, 54 UIC L. REV. 797, 800 (2021).

10. Stanley, *supra* note 9.

11. *Id.*

ShotSpotter begins recording one second before the triggering sound and stops one second afterwards.<sup>12</sup> An alert is sent to a 24-hour monitoring center in Newark, California, or in ShotSpotter's new Washington, D.C. office where trained acoustic experts determine the origin of the audio and whether the sound is gunfire.<sup>13</sup> Local police then receive alerts via their smartphones or by dispatch, often within thirty to forty-five seconds.<sup>14</sup> ShotSpotter is used in ninety U.S. cities, including Boston, Miami Gardens, Milwaukee, Minneapolis, Oakland, San Francisco, and Washington, D.C.<sup>15</sup> ShotSpotter charges law enforcement agencies subscription fees ranging from \$65,000 to \$80,000 per square mile, per year for sensors installed in undisclosed locations.<sup>16</sup>

### 1. Accolades: Brief Survey of Three Cities Using ShotSpotter

Police departments in San Francisco, Oakland, and New York use ShotSpotter.<sup>17</sup> San Francisco, one of ShotSpotter's earliest users since 2008, placed sensors in its Western Addition, Bayview and Mission communities, which are three of San Francisco's highest crime neighborhoods.<sup>18</sup> In 2010, the San Francisco Police Department (SFPD) added sensors in Visitacion Valley, expanding its ShotSpotter network from 3.3 square miles to four square miles.<sup>19</sup> In 2014, more sensors were

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12. See Gabriel Sandoval & Rachel Holiday, 'ShotSpotter' Tested as Shootings and Fireworks Soar, While Civil Rights Questions, CITY (July 5, 2020, 3:53 PM), <https://www.thecity.nyc/2020/7/5/21312671/shotspotter-nyc-shootings-fireworks-nypd-civil-rights> [<https://perma.cc/F7AV-6RU8>].

13. Many of these employees are former law enforcement. See Michael Quander, *Gunshot Tracking Technology Company Opens Office in DC to Help Police Curb Crime*, WUSA9 (July 14, 2021, 12:19 PM), <https://www.wusa9.com/article/news/local/dc/shotspotter-technology-company-expands-offices-to-dc/65-9a1e0121-3728-4cee-a723-78164b682ccb> [<https://perma.cc/2TPB-J33Z>] (reporting that ShotSpotter recently opened a new office in Washington, DC); Clarence Williams, *How ShotSpotter Locates Gunfire, Helps Police Catch Shooters and Works to 'Denormalize' Gun Violence*, WASH. POST (May 10, 2017), <https://www.washingtonpost.com/news/true-crime/wp/2017/05/10/how-shotspotter-locates-gunfire-helps-police-catch-shooters-and-denormalize-gun-violence/> [<https://perma.cc/K2CG-TQRG>].

14. See *Frequently Asked Questions*, *supra* note 1.

15. *Id.*

16. Alysson Gatens & Jessica Reichert, *Police Technology: Acoustic Gunshot Detection Systems*, ILL. CRIM. JUST. INFO. AUTH. (Dec. 10, 2019), <https://icjia.illinois.gov/researchhub/articles/police-technology-acoustic-gunshot-detection-systems> [<https://perma.cc/SJA5-BB2H>].

17. See *Frequently Asked Questions*, *supra* note 1.

18. Jonah Owen Lamb, *Courtroom Testimony Reveals Accuracy of SF Gunshot Sensor a 'Marketing' Ploy*, S.F. EXAM'R (July 11, 2017, 12:00 AM), <https://www.sfexaminer.com/news/courtroom-testimony-reveals-accuracy-of-sf-gunshot-sensors-a-marketing-ploy/> [<https://perma.cc/56UX-8DDA>].

19. *Id.*

placed in the three original neighborhoods.<sup>20</sup> This expansion coincided with a significant 34.6 percent city-wide reduction in gunfire between 2014 and 2015, as reported by ShotSpotter themselves.<sup>21</sup> Yet, all of this was mitigated by an increase in the homicide-by-gunshot rate, which rose from 45 gunshot victims to in 2014 to 52 victims in 2015.<sup>22</sup> In 2020, despite pandemic shelter-in-place orders, shootings allegedly increased due to the escalation of pandemic-related unrest and gang-related violence.<sup>23</sup> ShotSpotter recorded 744 gunshots fired in the first seven months of the year, a thirty-two percent increase from the same period in 2019.<sup>24</sup>

Across the bay in Oakland, ShotSpotter began service in 2010. Oakland is known as one of the most violent cities in this country.<sup>25</sup> One ShotSpotter study showed that its microphones detected 8,769 gunfire incidents in 2012 and 2013, but Oakland residents reported less than one-eighth of those incidents to the Oakland Police Department (OPD).<sup>26</sup> Today, a dozen ShotSpotters are strewn across sixteen miles of the city.<sup>27</sup> In 2019, ShotSpotter recorded about fifty shots per day, and about ten of those shots were connected to real gunfire incidents.<sup>28</sup> The City Council of Oakland and its Privacy Advisory Commission unanimously approved the continued use of ShotSpotter in 2019.<sup>29</sup>

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20. *See id.*

21. *Id.*

22. *See id.*

23. *See* Megan Cassidy, *Troubling Trend in S.F.: 32% Jump in Gunfire Recorded by ShotSpotter Sensors*, S.F. CHRON. (Sept. 22, 2020, 12:25 PM), <https://www.sfchronicle.com/crime/article/Troubling-trend-in-San-Francisco-32-jump-in-15585017.php> [<https://perma.cc/AN89-GC82>].

24. *See id.*

25. DAVID MUHAMMAD, NAT'L INST. FOR CRIM. JUST. REFORM, OAKLAND'S SUCCESSFUL GUN VIOLENCE REDUCTION STRATEGY 1 (2018) <https://nicjr.org/wp-content/uploads/2018/02/Oakland-N-Successful-Gun-Violence-Reduction-Strategy-NICJR-Jan-2018.pdf> [<https://perma.cc/A5V9-ZV3P>].

26. *See* Darwin BondGraham, *ShotSpotter Lobbied Oakland Officials in Apparent Violation of Law*, E. BAY EXPRESS (Apr. 29, 2014), <https://www.eastbayexpress.com/oakland/shotspotter-lobbied-oakland-officials-in-apparent-violation-of-law/Content?oid=3907581> [<https://perma.cc/933Z-PBTZ>].

27. *See* Police Report Stunning Rise in Gunfire on Oakland Streets, CBS News.com, July 14, 2020, <https://www.cbsnews.com/sanfrancisco/news/police-report-stunning-rise-in-gunfire-on-oakland-streets/>.

28. Press Release, Oakland Police Dep't, 86% of Shootings in Oakland are Unreported (July 13, 2020), <https://www.oaklandca.gov/news/2020/86-of-shootings-in-oakland-are-unreported> [<https://perma.cc/JA5M-6BYK>]; *Police Report Stunning Rise in Gunfire on Oakland Streets*, CBS S.F. (July 14, 2020, 6:30 AM), <https://sanfrancisco.cbslocal.com/2020/07/14/police-report-stunning-rise-in-gunfire-on-oakland-streets/> [<https://perma.cc/VBZ2-N52L>].

29. *ShotSpotter's Gunshot Detection Technology Unanimously Passes Oakland's Rigorous Surveillance Ordinance*, OFFICER.COM (Dec. 3, 2019), <https://www.officer.com/investigations/gunshot-location-systems/press-release/21116653/shotspotter-shotspotters-gunshot-detection-technology-unanimously-passes-oaklands-rigorous-surveillance-ordinance> [<https://perma.cc/7S32-L6GP>]. *See generally*, Jason Tashea, *Gunshot Detection Technology Company Voluntarily Submitted Itself for an Audit After Priva-*



ShotSpotter's biggest contract by far is with the New York Police Department (NYPD). In 2016, ShotSpotter operated in eight precincts in the Bronx and ten precincts in Brooklyn.<sup>30</sup> Currently, ShotSpotter monitors seventy square miles in New York City under a \$28 million five-year contract.<sup>31</sup> The New York Police Department believed that ShotSpotter was necessary because around 75 percent of shots captured by ShotSpotter technology were not reported to local police through a 911 call.<sup>32</sup> ShotSpotter supporters include former Mayor Bill de Blasio and former Police Commissioner William J. Bratton (a former member of the ShotSpotter board of directors), who insist that ShotSpotter improves the relationship between the police and the communities they serve to protect.<sup>33</sup>

## 2. Pushback: Criticism of ShotSpotter Inaccuracy, Misuse, and Financial Costs

Any praise for ShotSpotter must be balanced with consideration of the problems associated with gunshot detection technology. ShotSpotter gunshot detection technology in particular is often criticized for its inaccuracy rate, misuse, and financial costs. First, despite the touting of ShotSpotter as an important tool in reducing gun violence and its decades-long track record as such, it remains unclear whether the technology has actually diminished rates of crime or helped solve crimes. ShotSpotter's inaccuracy, however, is clearer. There have been many false positive alerts, in which there is a gunshot recorded with no corroborating evidence of any gunshot.<sup>34</sup> A 2013 investigation of ShotSpotter's efficacy in Newark, New Jersey revealed that from 2010 to 2013, seventy-five percent of the 3,632 gunshot alerts issued were false

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cy Concerns, ABA JOURNAL (Apr. 1, 2020), <https://www.abajournal.com/magazine/article/amid-privacy-concerns-a-gunshot-detection-technology-company-voluntarily-submitted-itself-for-audit-and-reaped-the-benefits> [<https://perma.cc/K74L-JAPF>].

30. ShotSpotter, When Will 120<sup>th</sup> Precinct Get ShotSpotter, the GunFire-Tracking Tech? <https://www.shotspotter.com/news/when-will-120th-precinct-get-shotspotter-the-gunfire-tracking-tech/>.

31. See Sandoval & Holiday, *supra* note 12.

32. See Tatiana Schlossberg, *New York Police Begin Using ShotSpotter System to Detect Gunshots*, N.Y. TIMES (Mar. 16, 2015), <https://www.nytimes.com/2015/03/17/nyregion/shotspotter-detection-system-pinpoints-gunshot-locations-and-sends-data-to-the-police.html> [<https://perma.cc/86H5-35SA>].

33. See Jackson Mote, Opinion, *ShotSpotter-An Advanced Shot at Crime Prevention*, DEPAUW (Mar. 16, 2015), <https://thedepauw.com/opinion-shotspotter-an-advanced-shot-at-crime-prevention/> [<https://perma.cc/SMY8-A348>].

34. See Matthew Guariglia, *It's Time for Police to Stop Using ShotSpotter*, ELEC. FRONTIER FOUND. (July 29, 2021), <https://www.eff.org/deeplinks/2021/07/its-time-police-stop-using-shotspotter> [<https://perma.cc/R2XG-4ARE>].

alarms.<sup>35</sup> A 2016 report published by the Center for Investigative Reporting also showed that almost a quarter of the time in the preceding two years, about two-thirds of ShotSpotter alerts did not turn up evidence of gunshots.<sup>36</sup> The San Diego Police Department has had a similar experience over the past four years; seventy-two of their 584 ShotSpotter activations were considered “unfounded.”<sup>37</sup> While there are plausible explanations for errors, such as the fact that ShotSpotter regularly mistakenly categorizes environmental noises such as fireworks, car backfire, or construction work (jackhammer, a nail gun, or a hammer) as gunfire, these mistakes have serious consequences for those affected.<sup>38</sup>

In addition to inaccuracy concerns, there are serious concerns that ShotSpotter alerts give police ostensible justification to harass people. For example, false-positive gunshots, just like any report of gunfire, can encourage officers to arrive on the scene looking for a shooter with their guns drawn, which could potentially escalate into a violent confrontation. Based on such concerns, in 2021 the Brighton Park Neighborhood Council, Lucy Parsons Labs, and Organized Communities Against Deportations filed an amicus brief supporting a motion by the Cook County Public Defender challenging the scientific validity of the ShotSpotter system’s gunfire reports.<sup>39</sup> Those community activists claim ShotSpotter is ineffective and has a disproportionate racial impact on Black and Latino communities, leading to over-policing of communities and greater abuse in policing.<sup>40</sup> The suit references a new study by the Mac-

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35. Prince Shakur, *Gunshot Detection Technology Raises Concerns of Bias and Inaccuracy*, CODA (Mar. 3, 2020), <https://www.codastory.com/authoritarian-tech/gun-violence-police-shotspotter/> [<https://perma.cc/D6M9-QGFQ>].

36. See *id.* The accuracy of gunshot detection technology used by San Francisco police was questioned in an attempted murder trial of a man accused of shooting at a car full of people in 2016. Paul Greene, a forensic analyst with ShotSpotter and an expert witness, testified that ShotSpotter guarantees accuracy 80 percent of the time. Greene said that the gunshot detection system used by the San Francisco Police Department has not been recalibrated in almost a decade and that ShotSpotter’s accuracy rate was created by the company’s sales and marketing team. See Lamb, *supra* note 18.

37. See Lyndsay Winkley, *San Diego Piece to Continue Using Gunshot Detection System, Despite Some Criticism*, SAN DIEGO TRIB. (Oct. 7, 2017, 6:00 AM), <https://www.sandiegouniontribune.com/news/public-safety/sd-me-sdpd-shotspotter-20171005-story.html> [<https://perma.cc/TWK9-F7CF>]; Kara Grant, *ShotSpotter Sensors Send SDDPD Officers to False Alarms More Often Than Advertised*, VOICES OF SAN DIEGO (Sept. 22, 2020), <https://www.voiceofsandiego.org/topics/public-safety/shotspotter-sensors-send-sdpd-officers-to-false-alarms-more-often-than-advertised/> [<https://perma.cc/L5ZN-N7M9>].

38. See Sandoval & Holiday, *supra* note 12; Gatens & Reichert, *supra* note 16.

39. See Brief for Brighton Park Neighborhood Council, et.al. as *Amici Curiae* in Support of Defendant’s Motion for Frye Hearing, *Illinois v. Williams*, 20 CR 0899601 (Ill. Cir. Ct. 2021).

40. See Press Release, MacArthur Just. Ctr., *ShotSpotter Generated Over 40,000 Dead-End Police Deployments in Chicago in 21 Months, According to New Study* (May 3, 2021), <https://>

Arthur Justice Center at Northwestern Pritzker School of Law that claims that the Chicago Police Department's use of ShotSpotter technology is inaccurate, expensive, and dangerous.<sup>41</sup> The study was designed to test the veracity of ShotSpotter's claims of accuracy and explore the impact of the ShotSpotter system on Chicago's marginalized communities.<sup>42</sup> According to Jonathan Manes, an attorney with the MacArthur Justice Center,

[s]urveillance technology has a veneer of objectivity, but many of these systems do not work as advertised . . . [h]igh tech tools can create a false justification for the broken status quo of policing and can end up exacerbating existing racial disparities. We needed to know whether this system actually does what it claims to do. It does not.<sup>43</sup>

The study itself is a rejoinder to ShotSpotter's unsubstantiated claims that its technology is 97% accurate.<sup>44</sup> The MacArthur Justice Center, via the Illinois Freedom of Information Act, secured data on ShotSpotter deployments from July 1, 2019 through April 14, 2021.<sup>45</sup> The data showed that "89% [of deployments] turned up no gun-related crime, 86% led to no report of any crime at all," and that more than 40,000 ShotSpotter deployments ran into dead ends entirely.<sup>46</sup> Since ShotSpotter sensors are installed only in the Chicago police districts with the highest proportion of Black and Latino residents, ShotSpotter exacerbates discriminatory policing patterns already deployed within these neighborhoods.<sup>47</sup>

Such discriminatory policing patterns received national media attention in the Spring of 2021 when a ShotSpotter alert summoned Chicago Police Officer Eric Stillman to a scene where he subsequently shot

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www.macarthurjustice.org/shotspotter-generated-over-40000-dead-end-police-deployments-in-chicago-in-21-months-according-to-new-study/ [https://perma.cc/VD6Q-V36B].

41. See *id.*

42. *End Police Surveillance: ShotSpotter Creates Thousands of Dead-End Police Deployments That Find No Evidence of Actual Gunfire*, MACARTHUR JUST. CTR. (last visited June 11, 2022), <https://endpolicesurveillance.com/> [perma.cc/KD3Z-JHL6].

43. Press Release, MacArthur Just. Ctr., *supra* note 40.

44. See Patrick Elwood, *Community Groups Demand City Oust ShotSpotter Gunshot Detection System*, WGNTV.COM (July 30, 2021, 6:31 PM), <https://wgntv.com/news/community-groups-demand-city-oust-shotspotter-gunshot-detection-system> [https://perma.cc/5WNT-L3DJ].

45. Press Release, MacArthur Just. Ctr., *supra* note 40.

46. *Id.*

47. Brief for Brighton Park Neighborhood Council, *supra* note 39, at 21; see *Groups Say Chicago Detection Systems Unreliable, Seek Review*, NBC CHI. (May 3, 2021, 4:34 PM), <https://www.nbcchicago.com/news/local/groups-say-chicago-gunshot-detection-systems-unreliable-seek-review/2501165/> [https://perma.cc/U3P6-42CV]; Goodman, *supra* note 9, at 802.

and killed 13-year-old Adam Toledo.<sup>48</sup> As shown in officer body camera footage, Toledo dropped a gun and lifted his empty hands in the air moments before Officer Stillman shot him.<sup>49</sup> Ruben Roman, a twenty-one year old, was later charged with firing his gun at a passing car, which prompted the ShotSpotter alert; Toledo was shot when he and Roman allegedly ran away from police.<sup>50</sup> Toledo's death sparked a protest march against police violence and drove community activists to demand that the City of Chicago end its use of ShotSpotter technology.<sup>51</sup> Their concerns are understandable given that:

African American and Latinx individuals are overrepresented among Chicago's shooting and domestic violence victims. African Americans make up 80 percent of the city's shooting victims and Latinx individuals make up 17 percent of all shooting victims as compared to Whites who make up approximately 2 percent of victims.<sup>52</sup>

To be sure, Chicago's use of ShotSpotter reinforces existing racial inequities in a city with a history of discriminatory patterns of policing, especially stop-and-frisk.<sup>53</sup> Anticipating more wrongful arrests, detentions, and other harms caused by police deployments, Jonathan Manes remarked, "[t]he ShotSpotter system in Chicago prompts thousands of deployments by police hunting for gunfire in vain . . . [i]t creates a powder keg situation for residents who just happen to be in the vicinity of a false alert."<sup>54</sup> Despite this reality, Chicago's police chief, Eddie

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48. Freddy Martinez & Lucy Parsons Labs, *Surveillance Technologies Are Destroying Lives in Chicago*, SOUTHSIDE WEEKLY (Apr. 28, 2021), <https://southsideweekly.com/end-the-citys-shotspotter-contrac/t> [<https://perma.cc/LW5R-LPJ6>]; see David K. Li, *Video of Fatal Shooting of 13-Year-Old Adam Toledo Released*, NBC NEWS (Apr. 15, 2021, 11:09 PM), <https://www.nbcnews.com/news/us-news/video-fatal-chicago-police-shooting-13-year-old-adam-toledo-n1264172> [<https://perma.cc/2EL4-DC8P>]; Joe Berkowitz, *Violent Crime is Up. Expanding the Surveillance State is Not the Solution*, FAST-COMPANY (July 30, 2021), <https://www.fastcompany.com/90659445/violent-crime-is-up-expanding-the-surveillance-state-is-not-the-solution> [<https://perma.cc/6W4V-EZE2>].

49. See Carlos Ballesteros, *In Little Village, Adam Toledo's Death Spurs Reflection on Police, Gangs, and Race*, INJUSTICEWATCH (Apr. 23, 2021), <https://www.injusticewatch.org/news/police-and-prosecutors/2021/adam-toledo-little-village-police-gangs/> [<https://perma.cc/8FNA-QDB9>].

50. See Elwood, *supra* note 44.

51. See *id.*

52. CITY OF CHI., OUR CITY, OUR SAFETY: A COMPREHENSIVE PLAN TO REDUCE VIOLENCE IN CHICAGO (2020). <https://www.chicago.gov/content/dam/city/sites/public-safety-and-violenc-reduction/pdfs/OurCityOurSafety.pdf> [<http://perma.cc/Y3TD-6V95>].

53. See Brief for Brighton Park Neighborhood Council, *supra* note 39, at 3, 16.

54. Elwood, *supra* note 44.

Johnson has praised ShotSpotter.<sup>55</sup> Mayor Lori Lightfoot also sees ShotSpotter technology as an important part of the city's overall crime detection system.<sup>56</sup>

The MacArthur Justice Center Study further argues that ShotSpotter provides a false technological justification for over-policing, and encourages increased, racialized patterns of policing in Chicago that have resulted in community distrust.<sup>57</sup> In its report, the MacArthur Justice Center concluded that lumping false and accurate ShotSpotter alerts together inflates a false and distorted perception of gun violence in predominantly minority neighborhoods.<sup>58</sup> In response, ShotSpotter responded with its own report, claiming that “[t]he MacArthur Justice Center Report draws erroneous conclusions from researchers’ interpretation of police report categorizations, falsely equating them with no shots fired...911 call center data alone provides an incomplete and misleading picture of ShotSpotter’s accuracy and effectiveness.”<sup>59</sup>

The City of Chicago Office of Inspector General’s (OIG) Office has also released a report on the Chicago Police Department’s use of ShotSpotter gunshot detection technology (“Report”) that corroborates finding by the MacArthur Justice Center. The OIG analyzed data from 50,176 ShotSpotter alerts between January 1, 2020 and May 31, 2021.<sup>60</sup> The Report concluded that the Chicago Police Department’s responses to ShotSpotter alerts rarely produced evidence of a gun-related crime, and rarely rose to investigatory stops, suggesting that the detection system is unreliable.<sup>61</sup> Specifically, the vast majority of ShotSpotter alerts were unconnected to any shooting incident, and only nine percent of ShotSpotter alerts indicated evidence of a gun-related criminal offense.<sup>62</sup> Furthermore, only two percent of all ShotSpotter alerts resulted in officer-written investigatory stop reports.<sup>63</sup>

55. See JON FASMAN, *WE SEE IT ALL: LIBERTY AND JUSTICE IN AN AGE OF PERPETUAL SURVEILLANCE* 56 (2021).

56. See *Groups Say Chicago Detection Systems Unreliable, Seek Review*, *supra* note 47; Megan Hickey, *ShotSpotter Gunshot Detection Technology Has Become a Crucial Police Tool in Chicago, But Is It Worth the \$33 Million the City is Paying*, CBS CHI. (May 3, 2021, 10:21 PM), <https://chicago.cbslocal.com/2021/05/03/shotspotter-chicago-police-contract-questions/> [<http://perma.cc/JDE3-TW6E>].

57. Brief for Brighton Park Neighborhood Council, *supra* note 39, at 19–21.

58. *Id.* at 30.

59. Abbie Alford, *Decision on ShotSpotter Contract Delayed in San Diego*, CBS8 (July 27, 2021, 10:33 PM), <https://www.cbs8.com/article/news/crime/decision-on-shotspotter-contract-delayed-in-san-diego-gunfire-detection-system-city-council-police-tool/509-dc7b0c82-7c82-40c5-bf0e-0007fafd87bd> [<https://perma.cc/USG4-7TKM>].

60. CITY OF CHI. OFF. OF INSPECTOR GEN., *THE CHICAGO POLICE DEPARTMENT’S USE OF SHOT-SPOTTER TECHNOLOGY* at 2–3, 15 (2021).

61. See *id.* at 2–3, 22.

62. *Id.* at 3.

63. *Id.* at 16.

Equally damning was the Report's finding that ShotSpotter contributes to wrongful stop-and-frisks. The Report suggested that the reliance on ShotSpotter technology gives Chicago Police officers an additional rationale to conduct stop-and-frisks in already over-policed areas where Black residents live, such as South Chicago and Calumet where these alerts are concentrated.<sup>64</sup> In areas where ShotSpotter alerts are most frequent, officers are more inclined to find reasonable suspicion that a person was involved in a gun-related crime.<sup>65</sup> This assertion is supported by the defined pattern of police conducting stop-and-frisks based on proximity to an aggregate number of *past* alerts in a specific area—which purportedly establishes police justification for stopping and searching a person. Commenting on the MacArthur Justice Center study and the OIG report, Jay Stanley with the ACLU Speech, Privacy, and Technology Project explains that “[t]he placement of sensors in some neighborhoods but not others means that the police will detect more incidents (real or false) in places where the sensors are located. That can distort gunfire statistics and create a circular statistical jurisdiction for over-policing in communities of color.”<sup>66</sup> Likewise, the Electronic Frontier Foundation is critical of ShotSpotter technology and refers to specific cases highlighted in the OIG Report to demonstrate that “aggregate ShotSpotter data, used as a blank check for stop and searches, erodes civil liberties and the presumption of innocence.”<sup>67</sup> Notwithstanding the OIG's scathing report, a spokesperson for ShotSpotter insisted their technology is accurate:

It is important to point out that the Chicago Police Department continually describes ShotSpotter as an important part of their operations. The OIG report does not negatively reflect on ShotSpotter's accuracy which has been independently audited at 97 percent based on feedback from more than 120 customers. Nor does the OIG propose that ShotSpotter alerts are not indic-

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64. *See id.* at 13, 19.

65. *See id.* at 19.

66. Jay Stanley, *Four Problems with the ShotSpotter Gun Detection System*, ACLU (Aug. 24, 2021), <https://www.aclu.org/news/privacy-technology/four-problems-with-the-shotspotter-gunshot-detection-system/> [https://perma.cc/W886-GURL].

67. Matthew Guariglia & Adam Schwartz, *Chicago Inspector General: Using ShotSpotter Does Not Justify Crime Fighting Utility*, ELEC. FRONTIER FOUND. (Aug. 24, 2021), <https://www.eff.org/deep-links/2021/08/chicago-inspector-general-police-use-shotspotter-justify-illegal-stop-and-frisks> [https://perma.cc/R2XG-4ARE].

ative of actual gunfire whether or not physical evidence is recovered.<sup>68</sup>

The issues highlighted in the OIG's report are not exclusive to Chicago. Last year, NYPD officers responding to ShotSpotter alerts fatally shot a gunman in a Crown Heights housing project, and another ShotSpotter alert sent officers into a violent altercation with a crowd in Harlem.<sup>69</sup> Likewise, people might be charged with something other than gun-related offenses because they are the first people that the police encounter in the area where ShotSpotter has recorded a gunshot. This happened when several undercover NYPD officers responded to a ShotSpotter alert in Canarsie and came across two young men allegedly smoking marijuana.<sup>70</sup> The police officers then swarmed one of the men, repeatedly punching and kicking him for "resisting arrest" while onlookers screamed and took video footage.<sup>71</sup> This example is illustrative of what is all too common: officers using ShotSpotter data as a pretext to arrest and harass citizens who are not involved in the officers' original purposes for arriving on the scene.

These kinds of incidents spurred concerns for the Center for the Constitutional Rights (CCR). Before ShotSpotter's implementation period, CCR criticized the NYPD ShotSpotter Impact and Use Policy due to concern about the potential of increased surveillance of Black and Latinx communities by placing ShotSpotter sensors in a "high crime area" resulting in discriminatory enforcement against persons of color.<sup>72</sup> CCR called for more transparency in the Impact and Use Policy so that New Yorkers will know about the inaccuracy and ineffectiveness of ShotSpotter technology, and the locations where ShotSpotters are installed.<sup>73</sup> Additionally, CCR wants the NYPD to publicly report on ShotSpotter errors and enforcement outcomes, and for the NYPD to seek out input from communities that are policed by ShotSpotters.<sup>74</sup>

Further, victims of police violence face many hurdles in seeking justice when wrongfully harmed by ShotSpotter technology. As CCR

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68. *Aldermen Seek Public Hearing on Questions About Accuracy of Police ShotSpotter Technology*, CBS CHI. (Sept. 14, 2021, 10:33 PM), <https://chicago.cbslocal.com/2021/09/14/aldermen-public-hearing-shotspotter-technology-accuracy/> [<https://perma.cc/PBB7-SL8C>].

69. Sandoval & Holiday, *supra* note 12.

70. *Id.*

71. *Id.*

72. Open Letter from Ctr. for Const. Rts., Re: Comments on NYPD ShotSpotter Impact and Use Policy, 1 (Feb. 25, 2021), <https://ccrjustice.org/sites/default/files/attach/2021/02/Shot%20Spotter%20Comments%20CCR%20BLH%202-25-21.pdf> [<https://perma.cc/5ZEL-UVSN>].

73. *Id.* at 2.

74. *Id.* at 2–3, 5.

pointed out, one these hurdles is ShotSpotter's lack of transparency. The company closely protects its trade secrets by retaining all proprietary interests in ShotSpotter data, including sensor-captured shots and audio.<sup>75</sup>

Remarkably, ShotSpotter may not make financial sense for the police, especially given that police departments across the country have grown increasingly concerned about the actual impact that ShotSpotter has on decreasing gunfire or violence, which has led some departments to discontinue their contracts with ShotSpotter. In 2016, the Charlotte-Mecklenburg Police Department in North Carolina declined to renew its annual ShotSpotter contract because the program was unhelpful in making arrests or identifying victims.<sup>76</sup> A year later, the San Antonio Police Department cut funding to what was a \$550,000 investment in ShotSpotter because it had resulted in only four arrests.<sup>77</sup>

### 3. Reaching a New Low: Police Misconduct and Altering ShotSpotter Reports in the Prosecution of Silvon Simmons

The prosecution of Silvon Simmons in Rochester, New York demonstrates how ShotSpotter reports can be manipulated. In this case, the State accused Simmons of firing the first shot during an altercation with police and charged him with attempted murder of a police officer.<sup>78</sup> Simmons, who is a Black man, instead claimed that he was exiting his friend's Chevrolet Impala in a driveway when a bright spotlight was shone in his face and a person began approaching him with a gun drawn.<sup>79</sup> Because the officer—Officer Ferrigno—at no point identified himself, Simmons was unaware that the man was a Rochester police officer and began running towards his home in fear.<sup>80</sup> Simmons was almost over the small fence leading to his duplex's backyard when he was shot three times in his back, left buttock, and right upper leg by Officer Ferrigno.<sup>81</sup>

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75. See Goodman, *supra* note 9, at 802; see Stanley, *supra* note 9.

76. Lamb, *supra* note 18.

77. See Vianna Davilla, S.A. *Police Cut Pricey Gunshot Detection System*, SAN ANTONIO EXPRESS-NEWS (Aug. 17, 2017, 9:12 AM), <https://www.expressnews.com/news/local/article/San-Antonio-police-cut-pricey-gunshot-detection-11824797.php> [<https://perma.cc/3RWP-DZDT>].

78. Shakur, *supra* note 35.

79. See *id.*

80. Amended Complaint and Jury Demand ¶ 75, *Simmons v. Ferrigno*, No. 6:17-CV-06176 MAT (W.D.N.Y. Aug. 27, 2018), ECF No. 1.

81. *Id.* ¶¶ 86–87; *People v. Simmons*, 57 Misc.3d 1212(A), slip op. at \*2 (N.Y. Crim. Ct. Apr. 13, 2017).



At trial, Officer Ferrigno testified that he saw what could have been the silver or gray Chevrolet Impala depicted in a Rochester Police Department (RPD) “wanted board” belonging to a Black man suspected of threatening a woman with a gun a few days earlier.<sup>82</sup> Ferrigno testified that he arrived at the driveway where the Impala was parked first, identified himself, and then chased Simmons, at which point Simmons shot at him and ran away.<sup>83</sup> However, the trial judge determined that Ferrigno did not have reasonable suspicion that Simmons had committed, or was about to commit, a crime and therefore no pursuit was warranted.<sup>84</sup>

The remaining issue surrounded who shot who first. The prosecution claimed that after Simmons shot at Ferrigno, the officer returned fire four times.<sup>85</sup> In contrast, the defense claimed that Simmons was unarmed and Ferrigno fired four shots at him without cause.<sup>86</sup> The civil complaint, based largely on the findings from the criminal trial, summarized that the defense offered the testimony of a neighbor who asserted that she heard four gunshots, while the prosecution hinged their case on a ShotSpotter report showing that five shots were fired.<sup>87</sup> The defense, however, called the reliability of the ShotSpotter evidence into question.<sup>88</sup> A forensic analyst and expert witness with ShotSpotter testified that ShotSpotter audio files can be altered by ShotSpotter employees or police after they are originally recorded.<sup>89</sup> In this case, ShotSpotter forensic evidence showed that the data had been altered twice by the time it was entered into evidence. Initially ShotSpotter mistook the loud noises in Simmons’ neighborhood as the sound of a helicopter overhead, until Rochester police notified ShotSpotter via email that an officer-involved shooting had taken place.<sup>90</sup> The report, which kept changing, first relayed that three shots had been fired, but was later modified to show that four shots were fired.<sup>91</sup> The Rochester Police Department then informed ShotSpotter of Ferrigno’s account of the altercation and requested that they look for more shots.<sup>92</sup> Five days

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82. See *Simmons*, 57 Misc.3d 1212(A), at \*2.

83. *Id.*, at \*2.

84. *Id.*, at \*9.

85. *Id.*, at \*6.

86. Amended Complaint and Jury Demand, *supra* note 80, at ¶¶ 86–88.

87. *Id.* ¶¶ 86–136; see also Reade Levinson & Lisa Girion, *A Black Man Risks All to Clear His Name – And Expose the Police*, REUTERS (Nov. 17, 2020, 12:00 PM), <https://www.reuters.com/investigates/special-report/usa-police-rochester-trial> [<https://perma.cc/NA5M-4FFZ>].

88. See Levinson & Girion, *supra* note 87.

89. See Shakur, *supra* note 35.

90. See Amended Complaint and Jury Demand, *supra* note 80, ¶ 239.

91. *Id.* ¶ 232.

92. *Id.* ¶¶ 236–42.

later, ShotSpotter employees amended the original forensic report to reflect that five shots had been fired, matching Officer Ferrigno's testimony.<sup>93</sup> At the trial's conclusion, Simmons was acquitted of all charges except criminal possession of a weapon in the second degree, which was later reversed and set aside by the court.<sup>94</sup>

B. *Applying the Law: Growing Fourth Amendment Concerns About the Functionality of ShotSpotter Surveillance Technology*

There has been ongoing, robust debate among legal scholars about whether police use of surveillance technology like ShotSpotter is a good idea. In *Smart Surveillance: How to Interpret the Fourth Amendment in the Twenty-First Century*, Ric Simmons enthusiastically embraces the view that surveillance technologies prevent crime, help catch criminals, monitor police conduct, and reduce racial profiling.<sup>95</sup> Simmons suggests that big data is revolutionizing criminal investigation and has the potential to dramatically increase the productivity of surveillance.<sup>96</sup> In contrast, in *The Rise of Big Data Policing: Surveillance, Race, and the Future of Law Enforcement*, Andrew Guthrie Ferguson cautions that big data-driven policing often results in an aggressive police presence, over-surveillance, and perceived harassment in communities of color.<sup>97</sup> Additionally, Ferguson argues, big data targeting can distort and lower the reasonable suspicion requirement for stop-and-frisks for reasons correlated with race and class, which creates a never-ending circle of racial

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93. Other evidence introduced at trial was equally dubious. Ferrigno and Officer Giancursio—another officer at the scene—gave chase without activating their patrol car lights and limited their radio communications with each other using a secure channel radio, and they did not run a check of the Impala's plates. Officers failed to locate a bullet from the found gun, despite canvassing the neighborhood. The DNA evidence on the gun did not match Simmons' DNA. The gun had an empty magazine, but it was not in a cocked-back position as guns should be after being fired. The police never tested Simmons' clothes and hands for gunpowder residue. Neither Ferrigno nor Giancursio alerted dispatch about chasing a possible gunman. See Levinson & Girion, *supra* note 87.

94. See Sandoval & Holiday, *supra* note 12. Simmons was released after spending 18 months in jail, and he filed suit against ShotSpotter, the police officers involved, and the City of Rochester for illegal search and seizure, falsely arrested, use of excessive and deadly force, fabricated and falsified evidence, malicious prosecution and denial of fair trial. See Amended Complaint and Jury Demand, *supra* note 80. The charges of resisting arrest, obstruction, and possession of marijuana against him were dropped as Simmons was preparing his civil action. See Sandoval & Holiday, *supra* note 12.

95. RIC SIMMONS, *SMART SURVEILLANCE: HOW TO INTERPRET THE FOURTH AMENDMENT IN THE TWENTY-FIRST CENTURY* 10, 71 (2019).

96. See *id.* at 142.

97. ANDREW GUTHRIE FERGUSON, *THE RISE OF BIG DATA POLICING: SURVEILLANCE, RACE, AND THE FUTURE OF LAW ENFORCEMENT* 4 (2017).

profiling.<sup>98</sup> He explains further that, relying on racially skewed databases, police may look at individuals living in high-crime areas or who have repeated contacts with police and place them in targeted databases and on community watch lists.<sup>99</sup>

Ferguson's concerns reflect the view of many others that the use of ShotSpotter may violate the Fourth Amendment rights of individuals. The Electronic Frontier Foundation cautions that gunshot detection systems can potentially record human voices and capture social conversations.<sup>100</sup> Courts have addressed these constitutional tensions in cases where ShotSpotter recorded the dying words of men involved in police shootings. In such instances, courts must determine whether ShotSpotter evidence may be admissible based on its reliability.<sup>101</sup> Citing these examples, some scholars have already investigated how privacy concerns might square up against admissibility of ShotSpotter recordings as evidence, and concluded that concerns about privacy infringement are outweighed by the value of ShotSpotter as an effective crime fighting tool.<sup>102</sup> One author pointed to the decreased rate of gunshots due to ShotSpotter, and concluded that their use does not violate an individual's expectation of privacy.<sup>103</sup> Another author applied the analytical frameworks offered by *Katz v. United States*,<sup>104</sup> *Kyllo v. United*

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98. *Id.* at 57.

99. *Id.*

100. *Acoustic Gunshot Detection*, ELEC. FRONTIER FOUND., <https://www EFF.org/pages/gunshot-detection> (last visited Mar. 13, 2022) [<https://perma.cc/YL9Z-GGJJ>]; see also Cale Guthrie Weissman, *The NYPD's New Technology May Be Recording Conversations*, BUS. INSIDER (Mar. 26, 2015, 1:05 PM), <https://www.businessinsider.com/the-nypds-newest-technology-may-be-recording-conversations-2015-3> [<https://perma.cc/BZ7G-UHDX>]; *Is ShotSpotter Violating Your Fourth Amendment Rights and You Don't Even Know?*, RTS. AND DISSENT (May 8, 2015), <https://www.rightsanddissent.org/news/is-shotspotter-violating-your-fourth-amendment-rights-and-you-dont-even-know/> [<https://perma.cc/F93E-PKC8>].

101. See, e.g., *State v. Hill*, 851 N.W.2d 670, 691 (Neb. 2014) (finding that “[i]t was neither untenable nor unreasonable for the trial court to conclude that the absence of blind testing did not seriously undermine the reliability of the ShotSpotter system in northeast Omaha.”); Sandoval & Holiday, *supra* note 12.

102. See, e.g., Amanda Busljeta, *How an Acoustic Sensor Can Catch a Gunman*, 32 J. MARSHALL J. INFO. TECH. & PRIV. L. 211, 216–28 (2016).

103. See *id.* at 220, 225–27. One journalist suggested that police departments need to reach out to communities that have a long history of distrust of the police and convey to them how ShotSpotter works and its technological limits. Dave Davies, *Surveillance and Local Police: How Technology Is Evolving Faster than Regulation*, WUWF (Jan. 27, 2021, 11:51 AM), <https://www.wuwf.org/post/surveillance-and-local-police-how-technology-evolving-faster-regulation/> [<https://perma.cc/9FD2-HBQU>] (interviewing journalist John Fasman about the privacy concerns with ShotSpotter, and how to mitigate them).

104. *Katz* superseded the prior Court rulings that defined “search” and “seizure” only in physical terms. Under the *Katz* two-prong expectation of privacy test, a search within the meaning of the Fourth Amendment takes place when the defendant manifests an actual expectation of privacy that society is willing to recognize as legitimate, justifiable, or reasonable. *Katz v. United States*, 389 U.S. 347, 353–58 (1967).

*States*,<sup>105</sup> and *United States v. Jones*<sup>106</sup> and concluded that the use of ShotSpotter technology by police—not as a listening device but as data-gathering technology—does not infringe upon an individual's Fourth Amendment rights.<sup>107</sup> Taken together, these authors posit that ShotSpotter technology does not in of itself invade individual privacy rights. However, these authors suggest that, given the lack of guidance from Congress and state legislatures, the Supreme Court should once and for all rule on the constitutionality of ShotSpotter technology in order to offer lower courts much needed clarity and guidance.<sup>108</sup>

The majority of scholarship around the constitutionality of ShotSpotter was published prior to the advent of modern technological advances, which have led to ShotSpotter being used in novel and invasive ways. In 2019, the Policing Project at the New York University School of Law confirmed that ShotSpotter can use and program closed-circuit TV (CCTV) cameras to turn toward the direction of an alert.<sup>109</sup> Additionally, the NYPD can combine the use of ShotSpotter with CCTV or video management systems to direct cameras to other surveillance assets and use facial recognition and facial surveillance technology, which are the latest threats to associational privacy and personal security.<sup>110</sup> Meanwhile, law enforcement agencies are saying precious little

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105. In *Kyllo*, the Court held that law enforcement's use of a thermal imaging device aimed at a private home from a public street to detect relative amounts of heat and obtain information about the interior of a home constitutes a "search" under the Fourth Amendment. 533 U.S. 27, 40 (2001). Justice Scalia, writing for the Court acknowledged that even though there was no physical intrusion, the government's action was still an unreasonable warrantless "search" that presumably required a warrant. *Id.*

106. In *Jones*, a unanimous Court expressed discomfort with the government's attachment of a GPS tracker on a jeep over twenty-eight days, which was determined to be a "search." *United States v. Jones*, 565 U.S. 400, 406–07 (2012). Justice Scalia sidestepped the issue of the application of the *Katz* and instead used common-law trespass theory and concluded that the Government trespassory inserted the information-gathering device when it encroached on Jones' jeep—a protected area. *Id.* at 412.

107. Alexandra S. Gecas, *Gunfire Game Changer or Big Brother's Hidden Ears?: Fourth Amendment and Admissibility Quandaries Relating to ShotSpotter Technology*, 2016 U. ILL. L. REV. 1073, 1077, 1104, 1108 (2016).

108. See *id.* at 1117.

109. THE POLICING PROJECT AT NYU SCH. OF L., *PRIVACY AUDIT & ASSESSMENT OF SHOTSPOTTER, INC.'S GUNSHOT DETECTION TECHNOLOGY* 15 (2019), <https://static1.squarespace.com/static/58a33e881b631bc60d4f8b31/t/6065e7d81422241f592ce0e5/1617291232883/Privacy%2BAudit%2Band%2BAssessment%2Bof%2BShotspotter%2Bflex.pdf> [https://perma.cc/E87W-XND9]. It is encouraging that ShotSpotter adopted the New York University School of Law's Policing Project's recommendations for strengthening ShotSpotter's privacy protections. *Id.* at 4–5. But that is not enough. The Policing Project did not offer a meaningful analysis of the effects of police use of ShotSpotter on communities of color. It only mentioned in passing that ShotSpotters can accommodate predictive policing software and reinforce stereotypes about certain particular neighborhoods. *Id.* at 15.

110. See Sandoval & Holiday, *supra* note 12; *Facial Recognition Technology: (Part I) Its Impact on our Civil Rights and Liberties Before the H. Comm. on Oversight and Reform*, 116th Cong. 3–4 (2019) (written

about their use of facial recognition software, even though the New York Public Oversight Surveillance Technology Act (POST Act) compels NYPD to explain how it uses facial recognition tools and other surveillance technologies to strategically track New Yorkers.<sup>111</sup>

These concerns are not exclusive to New York. Recently, ShotSpotter technology combined with video footage facilitated a wrongful arrest in Chicago, where a 65-year-old Black man named Michael Williams was falsely accused of killing a young man during the unrest over police brutality in the summer of 2020.<sup>112</sup> The prosecution's evidence against Williams was a silent video clip showing his car, another car running through a red light at an intersection, and a ShotSpotter alert.<sup>113</sup> Williams, who went out to buy cigarettes that summer night, was held in pre-trial custody for almost a year in Cook County jail before the State Attorney's Office dismissed the case based on insufficient evidence.<sup>114</sup>

#### 1. *City of Indianapolis v. Edmond*: The State Interest in Preventing Crime Generally Without a Specific Purpose, Violates the Fourth Amendment

As informative as the extant literature is about why courts should approve of the continued use of ShotSpotter and the need for federal and state legislation that regulates gunshot detection technology, less attention has been focused on the applicability of *City of Indianapolis v. Edmond*<sup>115</sup> in legal analyses of ShotSpotter constitutionality. To fill that gap, this Subsection argues that the use of ShotSpotter by law enforcement may be unconstitutional under *Edmond*. In *Edmond*, the Court ruled that police roadblocks aimed at discovering drugs violated the Fourth Amendment's prohibition against searches and seizures.<sup>116</sup> The

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testimony of Professor Andrew Guthrie Ferguson); Taylor Brook, *Recognizing Your Privacy Rights: Facial Recognition Technology and Third Party Doctrine*, MICH. TECH. L. REV. (Apr. 25, 2019), <http://mttlr.org/2019/04/recognizing-your-privacy-rights-facial-recognition-technology-and-third-party-doctrine/> [<https://perma.cc/2PF9-D5WT>].

111. See David Brand, *New City Law Compels NYPD to Explain Surveillance Tools and Strategies*, QUEENS EAGLE (July 16, 2020), <https://queenseagle.com/all/new-city-law-compels-nypd-to-See-surveillance-tools-and-strategies> [<https://perma.cc/4S9N-2QXL>].

112. See Garance Burek, Martha Mendoza, Juliet Linderman & Michael Tarm, *How AI-Powered Tech Landed Man in Jail With Scant Evidence*, ASSOCIATED PRESS (Aug. 19, 2021), <https://apnews.com/article/artificial-intelligence-algorithm-technology-police-crime-7e3345485aa668c97606d4b54f9b6220> [<https://perma.cc/F97S-WDSF>].

113. See *id.*

114. Goodman, *supra* note 9, at 797–98.

115. 531 U.S. 32 (2000).

116. *Id.* at 48.

initial reasons for establishing such roadblocks were simple: the police chief and mayor implemented the roadblocks in response to the outcry of residents in Near Westside, Indianapolis, who were tired of widespread drug trafficking and gun violence.<sup>117</sup> The checkpoints, established in what is largely known as a poor neighborhood ridden with crime, aimed to discover and interdict illegal narcotics and act as a deterrent.<sup>118</sup>

Writing for the Court, Justice O'Connor stated that law enforcement roadblocks must have a specific purpose beyond the prevention of crime generally.<sup>119</sup> According to Justice O'Connor, the state must have a strong interest in that purpose, the roadblock must be an effective way to achieve that purpose, and the roadblock cannot excessively intrude on the privacy of innocent individuals stopped in the roadblock.<sup>120</sup> In reaching that conclusion, the majority explained that the Court has never approved checkpoint programs that were intended to only detect evidence of ordinary criminal wrongdoing.<sup>121</sup> Instead, the Court has only condoned checkpoint cases involving narrow exceptions to the general rule that a seizure must be accompanied by some measure of individualized suspicion.<sup>122</sup> With that mind, the Court focused its reasoning on the primary purpose of the Indianapolis narcotics checkpoint. This reasoning included examining the slippery slope that could follow: "We cannot sanction stops justified only by the generalized and ever-present possibility that interrogation and inspection may reveal that any given motorists has committed some crime," and "[i]f we were to rest the case at this high level of generality, there would be little check on the ability of the authorities to construct roadblocks for almost any conceivable law enforcement purpose."<sup>123</sup>

In applying the *Edmond* rationale to ShotSpotter, we see that the "primary purpose" of ShotSpotter is to satiate the government's general

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117. See Barry Friedman, *Unwarranted: Policing Without Permission* 169 (2017).

118. See *id.* at 170 (noting that Indianapolis Police Department set up daytime roadblocks and stops over four months. At the checkpoints, an officer would approach cars to advise the driver that of the drug checkpoint, confirm their license and registration, and look for visible signs of impairment while a narcotics detection dog did a walk around the vehicle).

119. See *Edmond*, 531 U.S. at 44.

120. *Id.* at 47–48.

121. *Id.* at 41.

122. See, e.g., *United States v. Martinez-Fuerte*, 428 U.S. 543, 561 (1976) (upholding brief [detention or stop of motorists] at Border Patrol checkpoint designed to intercept illegal aliens); see also *Delaware v. Prouse*, 440 U.S. 648, 663 (1979) (invalidating a discretionary stop to check a driver's license and vehicle registration without any other standard or suspicion).

123. *Edmond*, 531 U.S. at 44.

interest in reducing neighborhood crime.<sup>124</sup> The logic is as follows: Although an active brief interval stopping of a car is arguably more physically invasive than constant ShotSpotter surveillance, both methods are used to reduce crime. With roadside checkpoints, officers look for particularized suspicion, whereas ShotSpotter listens for reasonable suspicion via a gunshot sound. ShotSpotter sensors, which are often used with cameras, actively listen for the sound of gunshots and notify the police when they hear such gunshots; this purpose does not serve a “specific purpose” outside the normal purpose of preventing crime generally.

Under this theory, *Edmond* prohibits law enforcement’s use of ShotSpotter because there is no individualized suspicion. Hence, similar to the drug interdiction roadblocks that were put in place to curb drug trafficking and gun violence in *Edmond*, San Francisco’s placement of ShotSpotter sensors in three districts where predominantly Black citizens live, Oakland’s employment of twelve ShotSpotter systems across sixteen miles in Oakland, and New York City spreading its ShotSpotter technology across seventy square miles, do not serve a specific purpose besides preventing ordinary criminal wrongdoing. Further, ShotSpotter technology is not tracking a particular suspect or targeting a specific criminal act or investigation. On the contrary, just like the residents of the Near Westside of Indianapolis who wanted to end widespread drug trafficking and gun violence generally, the SFPD, OPD, and NYPD have placed ShotSpotters in neighborhoods seeking to combat crime and gun violence writ large.

The research presented by the MacArthur Justice Center and the Chicago OIG offers compelling reasons why we should be concerned that ShotSpotter and other surveillance technologies are being used for general crime prevention.<sup>125</sup> As Andrew Guthrie Ferguson cautions, “[e]xtensive research . . . has shown that these expansive and powerful surveillance capabilities have exacerbated rather than reduced bias,

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124. *Id.* at 32, 44–46 (quoting “primary purpose” as the applicable standard). The Court’s reasoning is not without its critics. For example, Professor Christopher Slobogin and other scholars have observed that the *Edmond* “general crime control” purpose rationale is practically meaningless because the Court has never provided a clear definition for lower courts. *See, e.g.*, Christopher Slobogin, *Policing As Administration*, 165 U. PA. L. REV. 91, 102–03 (2016); Jason Fiebig, *Police Checkpoints: Lack of Guidance From the Supreme Court Contributes to Disregard of Civil Liberties in the District of Columbia*, 100 NW. J. OF CRIMINOLOGY, 599, 618–19 (2010); Brooks Holland, *The Road Round Edmond: Steering Through Primary Purposes and Crime Control Agendas*, 111 PA. ST. L. REV. 293, 300–03 (2006).

125. *See supra* Part I(A)(ii).

overreach, and abuse in policing, and they pose a growing threat to civil liberties.”<sup>126</sup>

Any assurances by the ninety police departments that use ShotSpotter who claim that they are not using the technology for the general purpose of combatting crime should be met with great skepticism. As seen in the activism over its use in Chicago, ShotSpotter is currently gaining more media attention as a surveillance tool.<sup>127</sup> However, digital spying by police is nothing new. There are many reasons to doubt the sincerity of the police departments when they claim they are not using policing technologies for dubious ends.

Law enforcement has established a pattern of operating and maintaining what is commonly referred to as a “surveillance state,” which should inform our approach to viewing their actions today. For example, police departments in major cities use surveillance technology to watch and track protesters, as evidenced by policing of protest movements surrounding the deaths of George Floyd, Ahmaud Arbery, Breonna Taylor, Rayshard Brooks, and other Black Americans.<sup>128</sup> The Department of Homeland Security monitored and tracked Black Lives Matter protesters in more than 15 cities using military-grade technology, including infrared and electro-optical cameras and “dirty box” devices on airplanes, drones, and helicopters.<sup>129</sup> On the ground, the SFPD conducted real-time mass video surveillance of BLM protesters despite a citywide ban on such conduct.<sup>130</sup> Similarly, in 2015 the Baltimore Police Department used Stingrays and facial recognition technology in tandem as spying tools.<sup>131</sup> Stingray technology uses military grade cell-site simulators to capture texts, numbers of outgoing calls, emails, seri-

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126. Andrew Guthrie Ferguson, *More Technology Won't Fix the Problems with Modern Policing*, FASTCOMPANY (June 13, 2020), <https://www.fastcompany.com/90516250/more-technology-wont-fix-the-problems-with-modern-policing> [https://perma.cc/4SUZ-2DWD].

127. See Isiah Holmes, National Campaign Pits Its Sights on Popular Police Gunfire Detection Tool, WISCONSIN EXAMINER, Apr. 29, 2022, <https://wisconsinexaminer.com/2022/04/29/national-campaign-puts-its-sights-on-popular-police-gunfire-detection-tool/>.

128. See Zolan Kanno-Youngs, *U.S. Watched George Floyd Protests in 15 Cities Using Aerial Surveillance*, N.Y. TIMES (June 19, 2020), <https://www.nytimes.com/2020/06/19/us/politics/george-floyd-protests-surveillance.html> [https://perma.cc/KW2F-W6PH].

129. *Id.*; see Chloe Ketels, *Black Lives Matter Protests Under Aerial Surveillance*, NATO ASS'N OF CANADA (July 6, 2020), <http://natoassociation.ca/black-lives-matter-protests-under-aerial-surveillance/> [https://perma.cc/2ADE-BWD8].

130. See Dave Maass & Mathew Guariglia, *San Francisco Police Accessed Business District Camera Network to Spy on Protesters*, ELEC. FRONTIER FOUND. (July 27, 2020), <https://www.eff.org/deeplinks/2020/07/san-francisco-police-accessed-business-district-camera-network-spy-protestors> [https://perma.cc/T9TT-XUUH].

131. See Benjamin Powers, *Eyes Over Baltimore: How Police Use Military Tech to Secretly Track You*, ROLLINGSTONE.COM, Jan. 6, 2017, <https://www.rollingstone.com/culture/culture-features/eyes-over-baltimore-how-police-use-military-technology-to-secretly-track-you-126885/>.



al numbers, identification, GPS location, actual content of conversation, and other raw and detailed information from unsuspecting phones and tracks the location of targets and non-targets in apartments, cars, buses, and on streets through mapping software.<sup>132</sup> Stingray technology can even make the tracked device send texts and make calls.<sup>133</sup>

According to media accounts following requests for information regarding these technologies and their use by police, threats to personal privacy are real. *The Washington Post* reported that, in the past three years alone, the U.S. District Court for the District of Columbia has seen a sevenfold surge in law enforcement requests under seal to track Americans without warrants through cell phone locations and internet activity in the past three years.<sup>134</sup> Similarly, it was reported that in 2019 the National Security Agency illegally collected communication information from domestic phone calls and text messages.<sup>135</sup> It was also revealed that the FBI searched unsuspecting Americans' emails without

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132. See DAVID GRAY, *THE FOURTH AMENDMENT IN AN AGE OF SURVEILLANCE* 262 (2017); see also Austin McCullough, *Stingray Searches and the Fourth Amendment Implications of Modern Cellular Surveillance*, 53 AM. CRIM. L. REV. ONLINE 41, 41 (2016).

133. See, e.g., Andrew Hemmer, *Duty of Candor in the Digital Age: The Need for Heightened Judicial Supervision of Stingray Searches*, 91 CHI. KENT L. REV. 295, 296 (2016) (describing the tracking abilities of Stingrays and how they can "hijack" a phone to perform calls and texts disguised as the targeted phones).

134. Spencer S. Hsu, *In District, Warrantless Tracking Requests Surge in Past 3 Years*, WASH. POST, July 19, 2017, at B.5 (revealing law enforcement pen registry and trap and trace requests to conduct electronic surveillance and track metadata information about telephone, email, and social media, have increased exponentially in Washington and Northern Virginia, two of the most active federal courts); see Spencer S. Hsu & Rachel Weiner, *U.S. Courts: Electronic Surveillance Up 500 Percent in D.C. Area Since 2011, Almost All Sealed Cases*, WASH. POST (Oct. 24, 2016), [https://www.washingtonpost.com/local/public-safety/us-courts-electronic-surveillance-up-500-percent-in-dc-area-since-2011-almost-all-sealed-cases/2016/10/22/48693ffa-8f10-11e6-9c52-ob10449e33c4\\_story.html](https://www.washingtonpost.com/local/public-safety/us-courts-electronic-surveillance-up-500-percent-in-dc-area-since-2011-almost-all-sealed-cases/2016/10/22/48693ffa-8f10-11e6-9c52-ob10449e33c4_story.html) [https://perma.cc/J2T7-EDA8] (explaining that, unlike traditional wiretaps to listen to landline phone calls requiring probable cause, these requests only require the government to persuade a judge that the information sought is relevant to an investigation); see also Naomi Gillens, *New Justice Department Documents Show Huge Increase in Warrantless Electronic Surveillance*, ACLU (Sept. 27, 2012, 1:32 PM), <https://www.aclu.org/blog/national-security/privacy-and-surveillance/new-justice-department-documents-show-huge-increase> [https://perma.cc/HD2W-WVS9].

135. Charlie Savage, *N.S.A. Collected Call Data It Was Not Authorized To*, N.Y. TIMES (June 27, 2019), <https://www.nytimes.com/2019/06/26/us/telecom-nsa-domestic-calling-records.html> [https://perma.cc/C3DG-G38F] (revealing that the NSA monitors Americans by acquiring data from phone calls and text messages, and analyzes mapping patterns of movement with other intersecting mobile device users); see Barton Gellman & Ashkan Soltani, *NSA Tracking Cellphone Locations Worldwide, Snowden Documents Show*, WASH. POST (Dec. 4, 2013), [https://www.washingtonpost.com/world/national-security/nsa-tracking-cellphone-locations-worldwide-snowden-documents-show/2013/12/04/5492873a-5cf2-11e3-bc56-c6ca94801fac\\_story.html](https://www.washingtonpost.com/world/national-security/nsa-tracking-cellphone-locations-worldwide-snowden-documents-show/2013/12/04/5492873a-5cf2-11e3-bc56-c6ca94801fac_story.html) [https://perma.cc/X4CM-ZAAK].

warrants or individualized grounds for suspicion.<sup>136</sup> Further, despite initial denials, the Los Angeles Police Department admitted to using facial recognition nearly 30,000 times since 2009.<sup>137</sup>

Put simply, police misuse and overuse of surveillance technologies coupled with the various examples regarding failed prosecutions of police when their use of such technologies harm the innocent, such as in the cases of Silvon Simmons and Michael Williams, certainly mitigate against trusting law enforcement with using ShotSpotter with little to no oversight or restriction.

## 2. Comparing ShotSpotters to Pole Cameras: Towards a New Analysis of Invasive Police Spying Tools

Again, until the Supreme Court further clarifies the limits of the Fourth Amendment on gunshot detection technology, lower courts in the interim can and should apply an *Edmond*-like analysis, with an eye towards expanding Fourth Amendment protections. Such an approach departs from the direction taken by prior courts that have concluded CCTV and other forms of surveillance does not violate the Fourth Amendment.<sup>138</sup> Those prior rulings analogized CCTV to ordinary surveillance methods used by a police officer in a public space, or even a utility worker sitting atop the pole observing the same activities the camera recorded.<sup>139</sup> Yet, some recent court rulings illustrate how the government's video surveillance of a public area could indeed raise Fourth Amendment concerns. Below, I offer two complimentary decisions that benefit from the teachings of *Carpenter v. U.S.*<sup>140</sup>—one of the most impactful cases in the past decade. *Carpenter* brought *Katz*<sup>141</sup> to the digital era by holding, for the first time, that a person has an ex-

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136. Charlie Savage, *F.B.I. Practices for Intercepted Emails Violated 4<sup>th</sup> Amendment, Judge Ruled*, N.Y. TIMES (Oct. 9, 2019), <https://www.nytimes.com/2019/10/08/us/politics/fbi-fisa-court.html> [<https://perma.cc/G94V-HYZC>].

137. See Report: *LAPD Used Facial Recognition Nearly 30,000 Times*, ASSOCIATED PRESS (Sept. 21, 2020), <https://apnews.com/article/technology-los-angeles-police-archive-crime-b45a07e5430aa4565930d5e606788714> [<https://perma.cc/W4BT-SSKT>].

138. See, e.g., *California v. Ciraolo*, 476 U.S. 207 (1986) (observations surveilled from plane flying over house); *Florida v. Riley*, 488 U.S. 445 (1989) (observations surveilled from helicopter flying above greenhouse in residential backyard); *Henderson v. People*, 879 P.2d 383, 390 (Colo. 1994) (observations surveilled from helicopter flying over residence).

139. See *People v. Tafoya (Tafoya I)*, 490 P.3d 532 (Colo. App. 2019) (citing prior rulings but ruling surveillance activity was not a search under the Fourth Amendment).

140. 138 S. Ct. 2206 (2018).

141. *Katz v. United States*, 389 U.S. 347 (1967). See *supra* note 104 for an explanation of the *Katz* test.

pectation of privacy in the whole of his or her physical movement and that law enforcement agencies generally need a warrant to track suspects' locations using cell-site location information (CSLI).<sup>142</sup>

First, in *People v. Tafoya*<sup>143</sup> the Colorado Court of Appeals ruled that police violated the Fourth Amendment when they used a utility pole-mounted video camera to spy into Tafoya's backyard continuously for three months, reversing Tafoya's conviction. The Court of Appeals rejected the States argument that video surveillance was not a search because Tafoya's property could also have been seen through a gap in the fence by any person on the sidewalk or by a neighbor in the stairway of a nearby apartment.<sup>144</sup> The court reasoned that video surveillance was much more efficient than human surveillance because: (1) it was unlikely that any pedestrian or neighbor would peer through a gap in a six-foot privacy fence or stand on his or her outdoor stairway for three months; and (2) it is equally improbable that someone would watch in a helicopter or watch through a camera installed on a drone.<sup>145</sup> The court stressed that the duration of the monitoring was especially relevant to the issue of whether the police department engaged in a "search."<sup>146</sup> The court acknowledged that, just because a citizen's actions were otherwise observable by the public at large, this alone does not foreclose a finding of a "search."<sup>147</sup> Recently, the Colorado Supreme Court upheld the Court of Appeals' decision.<sup>148</sup> Chief Justice Brian Boatwright, writing on behalf of the court, focused on the duration, continuity, and surreptitious nature of the surveillance of Tafoya's property and opined that the constant surveillance involved an unanticipated degree of intrusion equal to tracking and mapping a person's location.<sup>149</sup>

Second, the Massachusetts Supreme Court in *Commonwealth v. Mora* concluded that continuous long-term police surveillance through five hidden police video cameras with real time zoom capabilities on public

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142. *Carpenter*, 138 S. Ct. at 2217, 2221. Chief Justice Roberts, joined by Justices Ginsburg, Breyer, Sotomayor and Kagan, ruled that cell phone users possess a reasonable expectation of privacy in the CSLI history associated with their cell phones. Accessing a person's historical cell-site records—or at least seven days or more of cell site records—is a Fourth Amendment search because it violates the person's "legitimate expectation of privacy in the record of his physical movements." *Id.* at 2217.

143. *Tafoya I*, 490 P.3d 532.

144. *Id.* at 538–41.

145. *Id.* at 541–42.

146. *Id.* at 540.

147. *Id.* at 541.

148. *People v. Tafoya (Tafoya II)*, 494 P.3d 613 (Colo. 2021)

149. *Id.* at 622–23.

telephone and electrical poles violated the Fourth Amendment.<sup>150</sup> The court rejected the Commonwealth's contention that the absence of fencing or other efforts to shield the residences from view demonstrates that the defendants did not have a subjective expectation of privacy in those areas.<sup>151</sup> On the contrary, the court concluded that the defendants did not expect to be surveilled coming and going from their homes over an extended period of time.<sup>152</sup> The court noted that targeted, long-term camera surveillance of the area surrounding a residence has the capacity to invade the security of the home, and it is even more revealing than cell-site location information or GPS tracking.<sup>153</sup> Reminiscent of the reasoning in *Tafuya II*, the court was not swayed by the Commonwealth's argument that the video surveillance was merely a substitute for human surveillance.<sup>154</sup> The court reasoned that, as a depository for data, camera surveillance offers a far richer profile of a person's life than human surveillance.<sup>155</sup>

Similar analytical beats are heard when considering gun detection technology. Given that ShotSpotter's sole function is to vigilantly listen for gunshots 24/7, ShotSpotter is intended to be more accurate and dependable than the human ears of police officers. Even though a gunshot sound detected by ShotSpotter could also be heard by an officer walking down or standing stationary on a street, it is improbable that a human police officer would listen attentively at all times of the day for a gunshot. A human cannot sustain the same level of heightened attention, without ever growing distracted or tiring out. In contrast, a ShotSpotter sensor will not be distracted by conversations with others, need restroom break, or need to prepare for a shift change. Obviously, gun detection technology differs from CCTV, but will future courts reason that the use of ShotSpotters requires individualized suspicion? Because we live in a world where surveillance technology is rapidly evolving, it could take many years for a ShotSpotter case to make its way to the (now conservative majority) Supreme Court for a ruling on its constitutionality. Meanwhile, at the very least, as with facial recognition technology and Stingrays, comprehensive legislation is needed to regulate the use of gun detection technology.<sup>156</sup>

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150. *Commonwealth v. Mora*, 150 N.E.3d 297 (Mass. 2020).

151. *Id.* at 366–67.

152. *Id.* at 368–69.

153. *Id.* at 370.

154. *Id.* at 374.

155. *Id.*

156. Bill S.847, the Commercial Facial Recognition Privacy Act of 2019, was introduced in the Senate to prohibit the commercial use of facial recognition technology to identify and track consumers without consent. This bill placed limitations on the third-party sharing of collected face

Mindful of the need for immediate pragmatic reforms, Professor Christopher Slobogin proposes that administrative law apply to pervasive surveillance programs such as New York's Domain Awareness System (DAS) which was originally developed by the NYPD and Microsoft as a counterterrorism platform and is now used for criminal investigations including detecting loiterers.<sup>157</sup> DAS centralizes information from NYPD's 20,000 CCTVs through the five Burroughs and CCTV videos provided from private entities, along with captured images from 500 license plate readers, transit data points, ShotSpotter data, radiation scanners, drones, 911 calls and commercial and interagency databases.<sup>158</sup> Slobogin argues that such surveillance systems, given their inherent administrative nature, should be regulated by statutes and regulations—not warrants.<sup>159</sup> As such, police agencies should be treated like other agencies.<sup>160</sup> According to Slobogin, when applied to new policing surveillance technologies such as DAS administrative law principles—such as the notice and comment requirement—will create transparency.<sup>161</sup> further, this process would afford opportunities for the public to

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print data and required entities to meet certain minimum data security standards. Jeffrey D. Neuburger, *Bipartisan Facial Recognition Privacy Bill Introduced in Congress*, NAT'L REV. (Mar. 26, 2019), <https://www.natlawreview.com/article/bipartisan-facial-recognition-privacy-bill-introduced-congress> [<https://perma.cc/BPG9-WATL>]. On the west coast, California's Electronic Communications Privacy Act went into effect in 2016, and requires government entities in California to obtain a warrant based on probable cause before they can obtain a person's electronic communication information from a person's service provider or electronic device. California Electronic Communications Privacy Act, CAL. PENAL CODE § 1546 (West 2017). The California Consumer Privacy Act (CCPA) is the most expansive state privacy law in the United States. See Joseph J. Lazzarotti, Jason C. Gavejian & Maya Atrakchi, *State Law Developments in Consumer Privacy*, NAT'L REV. (Mar. 15, 2019), <https://www.natlawreview.com/article/state-law-developments-consumer-privacy> [<https://perma.cc/CUA8-JC3G>]. There has been mounting outcry on the grass-roots level against Stingray surveillance, demanding that police be more transparent about the surveillance, and that the public be allowed to participate in the decision-making process over how Stingrays are used. States have passed laws that protect citizens' cell phone data and which require police to get a warrant to use a Stingray. See, e.g., Katherine M. Sullivan, Comment, *Is Your Smartphone Conversation Private? The StingRay Device's Impact on Privacy in States*, 67 CATH. U.L. REV. 388, 400–01 (2018).

157. CITY OF N.Y. POLICE DEP'T, DOMAIN AWARENESS SYSTEM: IMPACT AND USE POLICY 3–4 (Apr. 11, 2021), [https://www1.nyc.gov/assets/nypd/downloads/pdf/public\\_information/post-final/domain-awareness,-system-das-nypd-impact-and-use-policy\\_4.9.21\\_final.pdf](https://www1.nyc.gov/assets/nypd/downloads/pdf/public_information/post-final/domain-awareness,-system-das-nypd-impact-and-use-policy_4.9.21_final.pdf) [<https://perma.cc/4PJT-2D2D>]; ANGEL DIAZ, BRENNAN CTR. FOR JUST., NEW YORK CITY POLICE DEPARTMENT SURVEILLANCE TECHNOLOGY, (2019), <https://www.brennancenter.org/our-work/research-reports/new-york-city-police-department-surveillance-technology> [<https://perma.cc/8AWJ-C8U7>]. Slobogin, *supra* note 125, at 91.

158. CITY OF N.Y. POLICE DEP'T, *supra* note 156; DIAZ, *supra* note 156; Albert Fox Cahn & Will Luckman, *Microsoft Needs to Stop Selling Surveillance to the NYPD*, FASTCOMPANY (July 2, 2020), <https://www.fastcompany.com/90523877/microsoft-needs-to-stop-selling-surveillance-to-the-nypd> [<https://perma.cc/2NMX-TWD2>].

159. Slobogin, *supra* note 124, at 91.

160. *Id.* at 151–52.

161. *Id.* at 139, 151.

learn about the abilities and scope of the proposed surveillance program, and offer input about the implementation of the program.<sup>162</sup> Though it is unclear whether legislatures and courts would seriously consider adopting Slobogin's approach, his work nevertheless highlights the shortcomings of the Court's Fourth Amendment jurisprudence as it applies to surveillance technologies.

## II. TESTING *TERRY*'S LIMITS WITH GUNSHOTS IN 2020 AND BEYOND: AN EMERGING CIRCUIT SPLIT

Building on the conclusions made by the MacArthur Justice Center and OIG reports, this Section analyzes how law enforcement routinely exploit stop-and-frisks to create what is essentially an occupied police state. This Section begins with a summary of the *Terry* doctrine and its reasonable belief requirement and proceeds to examine an emerging jurisdictional split between the Fourth, Seventh, and D.C. Circuits on the Fourth Amendment exigent circumstances exception. This Section discusses how these analyses can work to inform our understanding of the efficacy of ShotSpotter use by law enforcement today and in the future.

### A. *Terry v. Ohio*

Race and the Fourth Amendment have always been intertwined.<sup>163</sup> The origins of the modern police practice of targeting Black Americans can be traced to *Terry v. Ohio*,<sup>164</sup> where the Court ruled that searches undertaken by police officers are reasonable under the Fourth Amendment, so long as the officer "reasonably" believes that the suspect has a weapon which poses a threat to the officer's safety while investigating suspicious behavior.<sup>165</sup> *Terry* involved suspects casing a store.<sup>166</sup> Although the officer lacked a warrant, he had reasonable and articulable suspicion for the stop, which occurred during a crime in progress.<sup>167</sup> The officer found a gun on petitioner during a frisk.<sup>168</sup> Under *Terry*, of-

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162. *Id.* at 140, 149, 152.

163. See Carol Steiker, *Second Thoughts About First Principles*, 107 HARV. L. REV. 820, 839 (1994).

164. 392 U.S. 1, 9 (1968).

165. *Id.* at 30–31.

166. *Id.* at 6.

167. See *id.* at 28.

168. *Id.* at 7; see Stephen A. Saltzburg & Daniel J. Capra, *American Criminal Procedure: Cases and Commentary* 42–43 (9th ed. 2007).

Officers must point to some objective facts or observations that are sufficient to show reasonable suspicion under the circumstances, and courts must assess the reasonableness of searches and seizures from an objective point of view.<sup>169</sup> Officers have broad and completely unfettered discretion to conduct searches and seizures, since the requirement to demonstrate reasonable suspicion of criminal wrongdoing has been diluted so much since *Terry*.<sup>170</sup> Essentially, the police can justify their decision to stop and frisk regardless of true motivation, and courts tend to give police the benefit of the doubt when reviewing their conduct.<sup>171</sup> As a result, *Terry*'s "reasonable articulable suspicion" standard has been used as a weapon against minority communities in various instances, including during the "War on Drugs," traffic stops, and as discussed below, efforts to reduce gun violence.<sup>172</sup>

When *Terry* is considered in the context of police using ShotSpotter alerts, does the sound of gunshots—without more—raise any individualized suspicion that a particular individual stopped was engaged in criminal activity?<sup>173</sup> This question was explored in a jurisdictional split that emerged in the Fourth, Seventh, and D.C. Circuits in 2020. In *United States v. Rickmon*, a divided Seventh Circuit ruled that the sound of gunfire created an "emergency" that justified police stopping a vehicle.<sup>174</sup> Contrastingly, in *United States v. Delaney*, the D.C. Circuit held that gunshots are not a license to stop anyone nearby without reasonable articulable suspicion.<sup>175</sup> In *United States v. Curry*, the Fourth Circuit held that gunshots do not create "exigent circumstances."<sup>176</sup> These rulings are dissected below.

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169. Professor Stephen Saltzburg explains, "the [*Terry*] Court not only permitted stops and frisks on less than probable cause, it also explicitly invoked the reasonableness clause over the warrant clause as the governing standard." SALTZBURG, *supra* note 168, at 201.

170. After *Terry* it became increasingly unclear when stops are permissible. FRIEDMAN, *supra* note 117, at 154.

171. GRAY, *supra* note 132, at 279.

172. See Jack B. Weinstein & Mae C. Quinn, *Terry, Race and Judicial Integrity: The Court and Suppression During the War on Drugs*, 72 ST. JOHN'S L. REV. 1323, 1323, 1329 (1998); see also Harvey Gee, *Surveillance State: Fourth Amendment Law, Big Data Policing, and Facial Recognition Technology* 21 BERKELEY J. AFR. AM. L. & POL'Y 43, 67–68 (2021) (reviewing FERGUSON, *supra* note 97, and SIMMONS, *supra* note 95).

173. *Terry v. Ohio*, 392 U.S. 1, 9 (1968).

174. *United States v. Rickmon*, 952 F.3d 876, 879, 884 (7th Cir. 2020).

175. *United States v. Delaney*, 955 F.3d 1077, 1087 (D.C. Cir. 2020).

176. *United States v. Curry*, 965 F.3d 313, 331 (4th Cir. 2020).

B. *Seventh Circuit: Totality of the Circumstances Provided Reasonable Suspicion for Police to Stop the Car*

The Seventh Circuit in *Rickmon* considered whether law enforcement may constitutionally stop a vehicle based on a ShotSpotter alert and 911 calls.<sup>177</sup> The Peoria Police Department's ShotSpotter system sent a mobile data terminal alert in the early morning about two gunshots coming from North Ellis Street.<sup>178</sup> Responding officers were notified that three more gunshots had been detected in the area, cars were leaving the area, and a 911 caller reported witnessing a "black male on foot" running northbound.<sup>179</sup> Officer Ellefritz, who arrived first on the scene, saw a car coming in the opposite direction.<sup>180</sup> After the car was stopped, the two occupants inside pointed towards the end of a dead-end street where a crowd was gathered and yelling: "They are down there!"<sup>181</sup> Ellefritz held the occupants at gunpoint until backup arrived. Rickmon, the passenger, explained that he had been shot, and the driver gave consent to search the car which turned up a handgun under the passenger seat where Rickmon was sitting.<sup>182</sup>

Rickmon's unsuccessful motion to suppress claimed that the ShotSpotter system was inaccurate and unreliable, and that a ShotSpotter report alone should not allow police officers to stop the car just because it happened to be in the area, absent any individualized suspicion.<sup>183</sup> Rickmon argued that Ellefritz stopped the car based on an "unparticular hunch" and there were no "specific and articulable facts" linking the car to the shooting.<sup>184</sup> The district court disagreed and held that the totality of the circumstances provided Ellefritz with reasonable suspicion of criminal activity to justify the stop.<sup>185</sup>

On appeal, the Seventh Circuit sidestepped the issue of whether the ShotSpotter system was reliable, explaining in a footnote that it was unnecessary to address the question because the 911 calls corroborated the ShotSpotter reports and Rickmon was in the system's coverage zone:

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177. *Rickmon*, 952 F.3d at 878.

178. *Id.* at 879.

179. *Id.*

180. *Id.*

181. *Id.*

182. *Id.*

183. *Id.* at 881.

184. *Id.*

185. *Id.*



Rickmon has somewhat taken issue with ShotSpotter's reliability . . . The district court also received evidence that ShotSpotter is not always accurate and that officers may not solely rely on it to locate gunfire. As Rickmon points out, the record here does not demonstrate how often the Peoria Police Department received incorrect ShotSpotter reports or anything else attesting to the reliability of the system . . . We therefore take his argument as based on reasonable suspicion and need not reach the reliability of ShotSpotter. In some future decision, we may have to determine ShotSpotter's reliability where a single alert turns out to be the only articulable fact in the totality of the circumstances.<sup>186</sup>

The majority opinion raised *sua sponte* the argument that a ShotSpotter alert generates a report of an "emergency," not just a sound.<sup>187</sup> To the court, an alert is the equivalent of an anonymous tip, and therefore a ShotSpotter report, analyzed within the totality of the circumstances, can support an officer's reasonable suspicion.<sup>188</sup> This cleared the way for the panel majority to affirm the district court's decision. In the eyes of the panel, the totality of the circumstances provided reasonable suspicion for Ellefritz, based on his experience, to initiate the traffic stop.<sup>189</sup> These circumstances included: (1) two ShotSpotter alerts and a caller reporting sounds of gunfire, (2) the car was the only one driving away from a dead end street, and (3) Ellefritz had past experience with shots-fired calls in the same area.<sup>190</sup>

Yet, a close reading of *Rickmon* supports an alternative conclusion: Officer Ellefritz failed to identify specific articulable facts supporting the stop and acted on only a hunch about the car. Under this alternate theory, the majority panel erred by applying a lax exigent circumstances standard that did not honor *Terry* by broadly declaring that the sound of gunshots always translates into an emergency. Gunshot sounds do not

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186. *Id.* at 879 n.2. This was not the first time that the Seventh Circuit chose not to analyze policing technology. The Circuit previously sided with the government's use of Stingrays in *United States v. Patrick*, 842 F.3d 540 (2016), which was the first time that a federal court substantively discussed the warrantless use of a Stingray. In affirming Patrick's conviction, the panel majority punted on the substantive questions about whether a warrant was required to use the Stingray, and whether a cell site simulator is a reasonable means of executing a warrant. *Id.* at 545. The panel narrowly ruled that Patrick did not have any privacy interest in a public place, and reasoned that regardless of the Stingray, Patrick was taken into custody based on probable cause and an arrest warrant. *Id.*

187. *Rickmon*, 952 F.3d at 883.

188. *Id.* at 882.

189. *Id.* at 884.

190. *Id.* at 882–84.

create an emergency because ShotSpotter systems merely report sounds, and gunshot detection technology does not discern what is or is not a real emergency. As such, ShotSpotter does not provide the necessary individualized suspicion as to who in particular may have committed a crime.<sup>191</sup> Chief Judge Dianne Wood made similar points in her dissent, challenging both the majority's assumption that the car must have been connected to the shots because it was the only car found on North Ellis five minutes after the ShotSpotter alert as "pure speculation" and the majority's justification for the stop under the less-demanding exigent circumstances standard.<sup>192</sup>

My colleagues also stress that Ellefritz believed that he was responding to an emergency, because gunshots always connote emergency. Perhaps they do. But how much does this prove? Would it have entitled the police to force their way into every house on North Ellis, to make sure that the shooter was not threatening anyone in those houses? Would it have allowed the police to stop any and every car they saw within 1,000 feet of the point that ShotSpotter identified? My answer to both those questions is no. And I cannot agree with my colleagues that a single car proceeding north, at the speed limit signals an emergency.<sup>193</sup>

In the shadow of Judge Wood's cautionary tale, Petitioner filed a petition for certiorari arguing that, under the *Rickmon* majority's rea-

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191. See Goodman, *supra* note 9, at 825–26 (2021) (suggesting that the Seventh Circuit's analysis in *Rickmon* is flawed and arguing that "there are no facts to suggest that Officer Ellefritz had individualized or particularized suspicion that the occupants of Rickmon's vehicle were involved in the shooting, or otherwise armed and dangerous.").

192. *Id.* In a recent case, *People v. Mendoza*, the California Court of Appeals expressed a contrasting viewpoint, when it ruled that Border Patrol agents must have objectively reasonable suspicion to stop vehicles in known drug areas, and a "good faith" hunch is insufficient grounds to do so. 258 Cal. Rptr. 3d 249, 255 (Cal. Ct. App. 2020). The court determined that it was not objectively reasonable to suspect the defendant to be involved in criminal activity based on her driving in a known drug trafficking corridor that crossed the U.S. Mexico border. *Id.* at 255. The court observed that "295,000" vehicles traveled on the heavily traveled Interstate 15 in 2008 and "1,858,239" personal vehicles entered the United States from Mexico through the San Ysidro port of entry in November 2017. *Id.* The court acknowledged that there existed reasons to look into the appellant's crossing onto Interstate 15, but:

[T]hey provided almost no basis for thinking she was involved in criminal activity. Those factors alone would draw into suspicion tens of thousands of people every day, perhaps more. The factors law enforcement rely on to justify a stop, if amenable to innocent explanation, must serve to eliminate a substantial portion of innocent travelers.' *Id.* at 255–56 (internal citations omitted).

193. *Rickmon*, 952 F.3d at 886 (J. Wood, dissenting).

soning, police can indiscriminately stop persons standing, walking, sitting, sleeping, or driving within earshot of what they perceive to be gunfire.<sup>194</sup> As Petitioner pointed out, this is far-reaching because the majority effectively created a new exception to *Terry* that permits anything that even remotely sounds like a gunshot to be treated as an “emergency.”<sup>195</sup> As such, if ShotSpotter hears fireworks, a car backfire, or construction work, an “emergency” would enable police to mix and match the alert with some other “suspicious circumstance” in a “high crime area” to create a totality of circumstances that warrants unrestrained police discretion. As the remaining part of this Section illustrates, Petitioner’s opinion raises substantial and alarming concerns.

*C. D.C. Circuit: Police Lacked Reasonable Suspicion to Justify Stops  
After New Year’s Eve Celebratory Gunfire*

In *United States v. Delaney*, two Metro Police Department officers were patrolling a residential area in Washington, D.C. for celebratory gunfire on New Year’s Eve 2017 when the officers heard “repeated gunfire in multiple directions” nearby.<sup>196</sup> One minute later, the officers observed Delaney and another person sitting in a parked Jeep, kissing.<sup>197</sup> The officers blocked Delaney’s jeep with their police cruiser.<sup>198</sup> One officer questioned the passenger, as the other officer surveyed the parking lot. During questioning, a scuffle between the officers and Delaney ensued.<sup>199</sup> A search of the Jeep uncovered a handgun under the passenger seat along with spent casings in and around the vehicle.<sup>200</sup>

The trial court denied Delaney’s motion to suppress, finding that the government established reasonable suspicion because Delaney was found in an almost empty parking lot a block from the sound of the gunshots and engaged in “strange’ and ‘suspicious’” kissing.<sup>201</sup> The D.C. Circuit, however, reversed the holding. Judge David Tatel applied traditional doctrinal analysis to determine that (1) the officers violated

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194. See *id.* at 883 (majority opinion) (acknowledging that gun violence is inherently dangerous, and together with an anonymous 911 call making an emergency report, may be sufficient to support an officer’s reasonable suspicion); see also Petition for Writ of Certiorari, at 13, *Rickmon v. United States*, 952 F.3d 876 (2020) (No. 20-733), *cert denied*, 141 S. Ct. 2505 (2021).

195. Petition for Writ of Certiorari, *supra* note 194, at 4.

196. *United States v. Delaney*, 955 F.3d 1077, 1079 (D.C. Cir. 2020).

197. *Id.* at 1079–80.

198. *Id.* at 1080.

199. *Id.*

200. *Id.*

201. *Id.*

the Fourth Amendment when they seized Delaney because they lacked reasonable suspicion to justify the stop, and (2) the government failed to identify specific and articulable facts supporting the officers' reasons for the stop.<sup>202</sup> The panel found no evasive conduct on Delaney's behalf, and concluded that the officers pulled into the parking lot and stopped Delaney based on a hunch about the origins of the shots.<sup>203</sup>

Subsequently, in *United States v. Carter*,<sup>204</sup> District Judge John Bates relied heavily on *Delaney* in granting petitioner's motion to suppress. In *Carter*, MPD officers were patrolling the Sixth District, a "high crime area" in D.C., on New Year's Eve 2019 when they received a ShotSpotter alert about possible gunshots.<sup>205</sup> The officers saw three individuals walking westbound on Nash Street Northeast, away from the sound of the gunshots.<sup>206</sup> The police cruiser followed the men and pulled up next to them as they were walking.<sup>207</sup> Then, Officer Dabney got out of the car and told the men, "stop and talk to me real quick, come over to me real quick and then I'll get out of your way[.]"<sup>208</sup> The three men, who were standing between a police car and a fence, complied with the request.<sup>209</sup> Dabney found it suspicious that Carter kept his right upper arm pinned to his body, which indicated to him that Carter was carrying a weapon. Carter was apprehended after he tried to run off, and a handgun was recovered from Carter's jacket pocket.<sup>210</sup>

Judge Bates rejected the government's argument that the ShotSpotter system identified gunshots in a relatively small, high-crime area just a minute before the encounter, thereby establishing reasonable suspicion that criminal activity was afoot under *Terry*.<sup>211</sup> To Bates, it did not matter that Carter and his companions were the only people the officers saw in that area. On this basis, the court concluded that the government failed to produce sufficiently specific information demonstrating the officers had a reasonable and articulable suspicion that Carter was engaged in criminal activity.<sup>212</sup> Accordingly, the court granted Carter's suppression motion.<sup>213</sup>

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202. *Id.* at 1087.

203. *Id.* at 1086–87.

204. *See United States v. Carter*, Crim No. 20-05 (JDB), 2020 WL 3893023, at \*4 (D.D.C. Jul. 10, 2020).

205. *Id.*, at \*1.

206. *Id.*

207. *Id.*

208. *Id.*

209. *Id.*

210. *See id.*, at \*2.

211. *Id.*, at \*6.

212. *Id.*, at \*8.

213. *Id.*

D. *Fourth Circuit: A Gunshot Sound Is Not An Emergency Exigent Circumstance Near Government Subsidized Housing Developments*

In *United States v. Curry*, the Fourth Circuit addressed the issue of whether the Fourth Amendment's exigent circumstances doctrine justified the suspicionless seizure of Curry.<sup>214</sup> Richmond Police Officers arrived at Walcott Place, a government subsidized housing development, in response to several gunshots that were fired nearby less than a minute before.<sup>215</sup> Curry and five to eight other men were calmly walking away from the general area where the officers believed the shots originated.<sup>216</sup> With no suspect description, and with only corroborating reports of shots fired in the area, the officers fanned out and began approaching the men.<sup>217</sup> After Curry was stopped, an officer performed a pat down because he was not able to visually check for a bulge, and a struggle ensued that led to the discovery of a gun on Curry's person.<sup>218</sup>

The district court's ruling that exigent circumstances did not justify the suspicionless investigatory stop was reversed by an appellate panel.<sup>219</sup> An *en banc* Fourth Circuit disagreed, however, holding that the stop was not justified by exigent circumstances.<sup>220</sup> As an initial matter, the *en banc* majority opinion noted that the government did not claim that Curry's stop was a valid *Terry* stop, and was proceeding only on the single claim that Curry's seizure was justified by exigent circumstances.<sup>221</sup> In the first section of the opinion, after acknowledging the lack of Supreme Court guidance on the applicability of the exigent circumstances doctrine to the investigatory stop of a person, the majority proceeded to analyze the few Supreme Court cases that purported to extend the exigent circumstances exception to suspicionless, investigatory seizures of a person.<sup>222</sup>

To the dismay of the government, a brief review of these cases only supported the Fourth Circuit's conclusion that gunshot sounds do not create an emergency or threat of imminent harm, such that the "individualized suspicion" required by *Terry* attaches to anyone near the sound of a gunshot.<sup>223</sup> To begin, in *Mincey v. Arizona*,<sup>224</sup> the Court ex-

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214. *United States v. Curry*, 965 F.3d 313, 315 (4th Cir. 2020).

215. *Id.* at 316.

216. *See id.* at 316–17.

217. *Id.* at 317.

218. *Id.*

219. *Id.* at 318.

220. *Id.* at 320.

221. *Id.*

222. *Id.* at 323–25.

223. *See id.* at 326.

plained that the exception applies where “the exigencies of the situation’ make the needs of law enforcement so compelling that the warrantless search is objectively reasonable under the Fourth Amendment.”<sup>225</sup> The Court found that no exigent circumstances existed in such instances where police execute an exhaustive and intrusive warrantless search over four days after the shooting of a police officer.<sup>226</sup> Decades later, the Court in *Brigham City v. Stuart*<sup>227</sup> defined exigent circumstances to include the need “to prevent the imminent destruction of evidence.”<sup>228</sup> In that case, officers arrived at a house in the early morning and saw through a window a scuffle between a juvenile and several adults.<sup>229</sup> An officer opened the screen door and then announced his presence to stop the altercation.<sup>230</sup> The Court reasoned that the officer’s subjective motives to either make an arrest and gather evidence or to prevent further violence did not matter, since the officers had an objectively reasonable basis for taking action.<sup>231</sup>

Following up, in *Kentucky v. King*,<sup>232</sup> the Court analyzed the “police-created exigency” doctrine and held that officers may “conduct an otherwise permissible search without first obtaining a warrant.”<sup>233</sup> The case concerned police officers who followed a suspected drug dealer to an apartment complex.<sup>234</sup> Without seeing which apartment the suspect ran into, the officer smelled marijuana outside the wrong apartment door, knocked loudly, and announced the officers’ presence.<sup>235</sup> Officers forced their way into the apartment after hearing noises consistent with the “destruction of evidence” coming from the apartment.<sup>236</sup> Justice Alito, writing for the majority, held that the exigency justified the warrantless search of the apartment because the conduct of the police preceding the exigency was reasonable.<sup>237</sup>

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224. 437 U.S. 385 (1978).

225. *See id.* at 393–94 (citing *McDonald v. United States*, 335 U.S. 451, 456 (1948)).

226. *Id.* at 387–89, 393–94.

227. 547 U.S. 398 (2006).

228. *Id.* at 403 (citing *Ker v. California*, 374 U.S. 23, 40 (1963) (plurality opinion)).

229. *Id.* at 400–01.

230. *Id.* at 401.

231. *Id.* at 404–05. Fourth Amendment scholar Kit Kinports argues that the Court has not relaxed the probable cause requirement in exigent circumstances cases involving less invasive intrusions. Kit Kinports, *The Quantum of Suspicion Needed for an Exigent Circumstances Search*, 52 U. MICH. J. L. REFORM 615, 628–29 (2019).

232. 563 U.S. 452 (2011).

233. *Id.* at 455, 461.

234. *Id.* at 455–57.

235. *See id.* at 456.

236. *Id.* at 455–56.

237. *Id.* at 462, 469–72. Justice Ginsburg as the sole dissenter, argued that no urgency existed and a warrant was needed because the requirement of “exigent circumstances” was not met, and a

Considering this background, the *Curry* majority applied the Court's reasoning from the "exigent circumstances" cases and determined that no exigent circumstances existed.<sup>238</sup> While the officers heard shots and received corroboration that the shots came from the apartment complex, the police lacked any description of the suspect or indicia that the suspect was nearby.<sup>239</sup> The court deemed knowledge about prior shootings in the Creighton Court area to be insufficient justification for a suspicionless seizure.<sup>240</sup> In the third part of the opinion, the court applied a *Terry* analysis to conclude that the police had no reasonable basis to suspect that Curry fired the gunshots.<sup>241</sup> From the Court's perspective, if the officers were allowed to circumvent *Terry*'s individualized suspicion requirement, it "would completely cripple a fundamental Fourth Amendment protection and create a dangerous precedent."<sup>242</sup> In closing, with the Black Lives Matter summer protests fresh in the minds of the judges, the Court acknowledged the realities of policing in communities of color:

In our present society, the demographics of those who reside in high crime neighborhoods often consist of racial minorities and individuals disadvantaged by their social and economic circumstances. To conclude that mere presence in a high crime area at night is sufficient justification for detention by law enforcement is to accept *carte blanche* the implicit assertion that Fourth Amendment protections are reserved only for a certain race or class of people. We denounce such an assertion.<sup>243</sup>

Circuit judges in disagreement present additional insights into the boundaries of the Fourth Amendment. For example, in his *Curry* concurrence, Chief Judge Gregory preemptively responded to dissent by suggesting that the majority ruling was not a setback to predictive policing.<sup>244</sup> To the contrary, he suggested, the majority opinion did not hinder the police from continuing to use smart policies to identify crime patterns and dispatch officers to perceived high-crime neighbor-

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warrant was necessary. *Id.* at 473 (Ginsburg, J., dissenting). She suggested the majority opinion gives police license to routinely violate the Fourth Amendment. *Id.* at 474–75.

238. *United States v. Curry*, 965 F.3d 313, 321–31 (4<sup>th</sup> Cir. 2020).

239. *Id.* at 317.

240. *Id.* at 331.

241. *See id.* at 329–31.

242. *Id.* at 326.

243. *See id.* at 331 (quoting *U.S. v. Black*, 707 F.3d 531, 542 (4<sup>th</sup> Cir. 2013)).

244. *Id.* at 334 (Gregory, C.J., concurring).

hoods.<sup>245</sup> In contrast, Judge Wynn's concurrence reflects the skepticism shared by many of us regarding predictive policing systems in "high crime areas."<sup>246</sup> If the high crime area consideration is removed, he opined, then the police could make suspicionless stops of anyone after the sound of gunshot.<sup>247</sup>

Similarly, the debate over the efficacy of big data policing was debated in *Curry* between Judge Thacker, Judge Wilkinson, and Judge Richardson. Judge Thacker wrote a separate concurrence, joined by Judge Keenan, where he strongly criticized Judge Wilkinson's dissent for hailing predictive policing as an "innovation" in policing. Thacker argues predictive policing is not a panacea:

Although of relatively recent vintage, the "innovation" of preventive policing, which uses computer algorithms to predict high crime areas, is no longer the shiny new object it may once have appeared to be, but instead has revealed itself to be tarnished with racial bias. Predictive policing is merely a covert effort to attempt to justify racial profiling.<sup>248</sup>

Of particular concern to Thacker are the racial implications of "hot spot policing," which uses historic crime data to predict future crime hot spots.<sup>249</sup>

In contrast, dissenting Judge Wilkinson commended the Richmond Police Department's use of "predictive policing" strategies such as "hot spot policing," and posited that, "[t]he majority has delivered a gut-punch to predictive policing."<sup>250</sup> According to Wilkinson, requiring responding police officers to "wait for identifying information" before taking action makes communities less safe.<sup>251</sup> In his dissent, Judge Richardson, joined by Judges Wilkinson, Niemeyer, Agee, Quattlebaum, and Rushing, wrote: "I fear the majority's sweeping decision—outlawing a modest response to a serious threat—guts the exigent-circumstances doctrine and handcuffs law enforcement's response to possible active-shooter situations."<sup>252</sup>

In concurrence, Judge Diaz, joined by Judge Harris, took an altogether different analytical approach, and cited to the rationale and re-

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245. *Id.* at 334.

246. *Id.* at 334–36 (Wynn, J., concurring).

247. *Id.* at 337.

248. *Id.* at 344 (Thacker, J., concurring).

249. *Id.* at 344–45.

250. *Id.* at 347, 350 (Wilkinson, J., dissenting).

251. *Id.* at 348.

252. *Id.* at 351 (Richardson, J., dissenting).



sult of *Edmond* which he argued controlled the disposition of the case. He asserted that the “exigent circumstances” proffered by the government did not “authorize the measures the officers took to investigate the origin of the gunfire.”<sup>253</sup> Diaz disagreed with the government’s insistence that the exigencies faced by the officers justified their suspicionless stop of Curry and removed the need to establish “individualized suspicion of wrongdoing.”<sup>254</sup>

As Petitioner emphasized in his cert petition, the D.C. and Fourth Circuit’s court rulings offer rationales that are more consistent with existing Fourth Amendment jurisprudence than the Seventh Circuit’s reasoning in *Rickmon*.<sup>255</sup> Although these cases can be factually distinguished from one another, they share similar facts sufficient to assume consistent results. With this in mind, the approach taken in *Delaney*, *Carter*, and *Curry*, where “the courts rejected any notion of a watered-down version of *Terry*—in which the sound of gunshots casts a wide net of suspicion over all who may stand, walk, or drive nearby<sup>256</sup>—is more reliable in terms of expected outcomes. Within this analytical framework, the sound of gunshots, without more, would not raise any individualized suspicion that a particular individual stopped was engaged in criminal activity under *Terry*. *Delaney* and *Curry* can serve as reminders to courts and law enforcement to take seriously the text and history of the Fourth Amendment, which was designed to be a counterweight to the authority of government agents armed with general warrants and writs of assistance to conduct broad and indiscriminate searches with impunity.”<sup>257</sup>

### III. RACIALIZED POLICING, AND REFORMING STOP AND FRISK TOWARDS LASTING COMMUNITY-BASED SOLUTIONS

“We must face our racial history and our racial present.”<sup>258</sup>

Without doubt, outrage over police brutality and violence reached a crescendo when millions organized together in solidarity protesting for racial justice in 2020.<sup>259</sup> Mindful of that, this Section applies Critical

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253. *Id.* at 339–40 (Diaz, J., concurring).

254. *See id.* at 339–40 (quoting *Indianapolis v. Edmond*, 531 U.S. 32, 37 (2000)).

255. *See* Petition for Writ of Certiorari, *supra* note 194, at 14.

256. *See* Petition for Writ of Certiorari, *supra* note 194, at 9 (internal citation omitted).

257. GRAY, *supra* note 132, at 70–71.

258. Michelle Alexander, *America, This is Your Chance*, N.Y. TIMES (June 8, 2020), <https://www.nytimes.com/2020/06/08/opinion/george-floyd-protests-race.html> [<https://perma.cc/3SL5-PTKE>].

259. *See* Kanno-Youngs, *supra* note 128.

Race Theory (CRT) to examine the broken relationship between the Fourth Amendment and over-policing in communities of color. Critical Race Theory is a useful tool to understand Fourth Amendment search and seizure law and, moreover, the relationship between law and racial justice.<sup>260</sup> “Critical race theorists assert that the law ‘constructs race’ by separating people into groups, assigning social meaning to these groups, and instituting hierarchical arrangements. Racial inequalities persist because race informs all areas of the law[.]”<sup>261</sup> Building on this premise, in the past 30 years, CRT has evolved and is more commonly applied to the interrelated areas of criminal law, criminal procedure, and mass incarceration.<sup>262</sup> As a result, CRT now offers a broader understanding of Fourth Amendment search and seizure law, one that moves beyond the traditional doctrinal analysis applied by courts.

A sampling of this work brings new insights. First, Professor Paul Butler, in his volume *Chokehold: Policing Black Men*, offers a raw and unapologetic indictment of the purposefully broken American criminal justice system that targets Black men and pushes them into incarceration through lawful means.<sup>263</sup> Broadly speaking, Butler explains that Black men are incarcerated largely because of their race—not because of poverty or poor choices.<sup>264</sup> Butler’s inquiry is seen through the lens of “policing Black men” as “thugs” within a larger cultural context of white supremacy, entertainment, sports, and a legacy of slavery and Jim Crow imposed through police brutality, racial profiling, and stop-and-frisk searches.<sup>265</sup> Butler next argues that stop-and-frisk does not make communities safer, and explains how easily police can meet the “reasonable suspicion” standard set by *Terry*. Stop-and-frisk is the leading crime policy that allows police to stop Black and Latino men for trivial offenses like jaywalking or spitting on the sidewalk.<sup>266</sup> Butler says the stop-and-frisk, as the country’s primary crime control mechanism, is a “central source of inequality, discrimination, and police abuse.”<sup>267</sup>

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260. See PAUL BUTLER, *CHOKEHOLD: POLICING BLACK MEN* 76–77 (2017).

261. *Id.* at 184.

262. See, e.g., Devon W. Carbado, *UNREASONABLE: BLACK LIVES, POLICE POWER, AND THE FOURTH AMENDMENT* (2022); I. Bennett Capers, *Afrofuturism, Critical Race Theory and Policing in the Year 2044*, 94 N.Y.U. L. REV. 1 (2019); I. Bennett Capers, *Critical Race Theory and Criminal Justice*, 12 OHIO ST. J. CRIM. L. 1 (2014); Paul Butler, *The System Is Working the Way It Is Supposed To: The Limits of Criminal Justice Reform*, 104 GEO. L. J. 1419 (2016).

263. See PAUL BUTLER, *CHOKEHOLD: POLICING BLACK MEN* 9–10 (2017).

264. *Id.* at 17–18.

265. See *id.*

266. See *id.* at 83.

267. *Id.* at 83.

Second, the placement of expensive ShotSpotter sensors on rooftops to listen gunshot sounds in “high crime” areas on its own will not reduce violence. Rather, it is more likely to perpetuate what Professor Michelle Alexander has coined as “mass incarceration” in her influential book, *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. “Mass incarceration” has since made its way into the vernacular in conversations about criminal justice reform.<sup>268</sup> Due to ShotSpotter, more Black men are stopped just because they happen to be in ShotSpotter coverage areas where an “emergency” was signaled by the sound of a gunshot.<sup>269</sup> These men will remain trapped in a racial and broken criminal revolving door. Alexander argues that the increased scrutiny of racial biases in stop and searches, plea bargaining, and sentencing is welcome.<sup>270</sup> Attention should be paid to the caste system that depends on the prison label affixed to felons, not the time they served in prison. The felon label precludes a felon from employment and access to housing, as well as enjoying the privileges of citizens, such as voting and jury service.<sup>271</sup> Felons will continue to be cycled in and out of prison, monitored by the police, and precluded from participating in mainstream society.

Living in this reality, some cities have crafted alternative action plans to combat gun violence that have proven effective. In *Bleeding Out: The Devastating Consequences of Urban Violence—And a Bold New Plan for Peace in the Streets*, Thomas Abt, Director of the National Commission on COVID-19 and Criminal Justice, examines various approaches to reducing urban violence, which he insists should be considered an urgent national emergency.<sup>272</sup> Abt implores communities and law enforcement to work together to reduce gun violence in a new paradigm for addressing urban violence in America, advocating for anti-crime and anti-violence deterrence strategies targeting high-risk offenders and mayhem-prone groups and for deploying additional police patrols to high-crime neighborhood “hot spots” to quell criminal activity and get guns off the

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268. See Michelle Alexander, *The New Jim Crow: Mass Incarceration in the Age of Colorblindness* 14–15 (2010); see, e.g., David Leonhardt, *When Jail Becomes Normal*, N.Y. TIMES (June 3, 2020), <https://www.nytimes.com/2020/06/03/briefing/protests-steve-king-coronavirus-your-wednesday-briefing.html> [<https://perma.cc/GV8N-LWE6>].

269. See Goodman, *supra* note 9, at 20–22.

270. See Michelle Alexander Gives Keynote Speech at AFSC Dinner, AFSC (June 9, 2011), <https://www.afsc.org/story/michelle-alexander-gives-keynote-speech-afsc-dinner> [<https://perma.cc/GLV3-W6YY>].

271. See Michelle Alexander, *The Injustice of This Moment Is Not An ‘Aberration,’* N.Y. TIMES (Jan. 17, 2020), <https://www.nytimes.com/2020/01/17/opinion/sunday/michelle-alexander-new-jim-crow.html> [<https://perma.cc/BXL4-UA6V>].

272. THOMAS ABT, BLEEDING OUT: THE DEVASTATING CONSEQUENCES OF URBAN VIOLENCE—AND A BOLD NEW PLAN FOR PEACE IN THE STREETS 3–4 (2019).

streets.<sup>273</sup> Abt's schema is evidence- and data-informed and, moreover, it provides a platform for members of the impacted community to speak out about these issues.<sup>274</sup>

Abt is inspired by Oakland's Ceasefire Strategy, an iteration of Group Violence Intervention or Group Violence Reduction Strategy (GVRS), which is best known for its effectiveness in reducing serious gun and group violence using focused deterrence.<sup>275</sup> Central to GVRS' success is its hyper-focused intervention addressing a specific range of behaviors among small groups and group members.<sup>276</sup> These interventions are appropriately balanced because group members can either be punished for persisting in violent behavior or choose opportunities to improve their lives.<sup>277</sup> Also, GVRS is fair and legitimate because it treats group members with dignity and allows autonomy.<sup>278</sup>

More specifically, the Ceasefire Strategy was the byproduct of concerted advocacy from community and faith-based organizations including Oakland Community Organizing. In 2013, Oakland launched Ceasefire as a coordinated effort to identify around one hundred people who are most likely to shoot someone and be shot.<sup>279</sup> A special team of police officers focused on these individuals to make arrests and confiscate guns.<sup>280</sup> In the process, inclusive partnerships were formed between police, prosecutors, key community members, and social service providers that improved public trust in law enforcement.<sup>281</sup>

In its inaugural year, there was a "32 percent reduction in gun homicides and a 43 percent decrease in gang-involved shootings."<sup>282</sup> Subsequently, Ceasefire "produced five consecutive years of reductions in fa-

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273. *Id.* at 43.

274. *Id.* at 9–10.

275. *See id.* at 88–89.

276. *See* MIKE MCLIVELY & BRITTANY NIETO, A CASE STUDY IN HOPE: LESSONS FROM OAKLAND'S REMARKABLE REDUCTION IN GUN VIOLENCE 24–26 (2019), <https://policingequity.org/images/pdfs-doc/reports/A-Case-Study-in-Hope.pdf> [<https://perma.cc/N9VY-286W>].

277. *See* ABT, *supra* note 272, at 90; NAT'L INST. CRIM. JUST. REF., OAKLAND'S SUCCESSFUL GUN VIOLENCE REDUCTION STRATEGY 5–6 (2018).

278. *See* MCLIVELY & NIETO, *supra* note 276 at 70–71.

279. *See* NAT'L INST. CRIM. JUST. REF., *supra* note 277, at 1–3.

280. *Id.* at 4.

281. ANTHONY A. BRAGA, LISA M. BARAO, GREGORY ZIMMERMAN, ROD K. BRUSON, ANDREW V. PARACHRISTOS, GEORGE WOOD & CHELSEA FARRELL, OAKLAND CEASEFIRE EVALUATION: FINAL REPORT TO THE CITY OF OAKLAND 1 (2019).

282. *Study Credits Oakland Ceasefire Strategy for Reducing Gun Violence*, CBS S.F. (Aug. 22, 2018, 2:31 PM), <https://sanfrancisco.cbslocal.com/2018/08/22/study-credits-oakland-ceasefire-strategy-for-reducing-gun-violence/> [<https://perma.cc/88XY-4EA6>]; *see also* Press Release, Giffords Law Center to Prevent Gun Violence, Lessons From Oakland's Citywide Effort That Dramatically Reduced Gun Violence (Apr. 24, 2019), <https://giffords.org/press-release/2019/04/ugv-a-case-study-in-hope/> [<https://perma.cc/9NT7-LXR7>].

tal and non-fatal shootings.”<sup>283</sup> The Ceasefire Strategy seems to be working. More specifically, “[b]etween 2010 and 2017, total Oakland shooting victimizations peaked at 710 in 2011 . . . and decreased by 52.1 percent to a low of 340 [shooting victims] in 2017.”<sup>284</sup> Notably, “Shootings fell from 557 in 2012 to 284 in 2019.”<sup>285</sup> Likewise, Ceasefire intervention was associated with an estimated 31.5 percent citywide reduction in gun homicides.<sup>286</sup>

Oakland’s strategy consists of four core components: (1) the police identify groups and individuals who are at high risk of being involved in a shooting, based largely on contacts with police and those who were recently shot; (2) the police contact at-risk individuals and set up meetings with police, individuals, community leaders, crime victims, and service providers for those individuals in an effort to stop the violence; (3) resources are provided to at-risk individuals including “Call-In” meetings where at-risk individuals are informed about the services available to them; and (4) the police concentrate on a small number of groups and individuals<sup>287</sup> who continue to engage in gun violence.<sup>288</sup> In addition, Ceasefire purposefully recruited and mobilized people of color towards improving police-community relations.<sup>289</sup> The 2019 *Oakland Ceasefire Evaluation: Final Report to the City of Oakland* offered this conclusion: “Ceasefire greatly enhanced the City’s capacity to systematically and thoughtfully reduce shooting and homicides.”<sup>290</sup> It is an effective strategy, and is an alternative to “heavy-handed policing initiatives that have the potential to criminalize entire communities.”<sup>291</sup>

Oakland Mayor Libby Schaaf concurred, “In Oakland, we’ve embraced the notion that we can’t arrest our way out of the gun violence epidemic.”<sup>292</sup> Referring to the Oakland Ceasefire program, Schaaf pointed out, “This approach has helped us to save lives, while also addressing the trauma of gun violence that lingers in neighborhoods long after shots are fired.”<sup>293</sup> Yet Oakland’s Ceasefire program has been less effective with the advent of the COVID-19 pandemic, which reduced

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283. NAT’L INST. CRIM. JUST. REF., *supra* note 277, at 1.

284. See BRAGA ET AL., *supra* note 281.

285. Darwin BondGraham, *Gun Violence: The Other Public Health Crisis That Spiked in Oakland Last Year*, OAKLANDLANDSIDE, (Apr. 27, 2021), <https://oaklandside.org/2021/04/27/gun-violence-shootings-epidemic-public-health-crisis-oakland-2020-covid/> [https://perma.cc/KYP3-MK3G].

286. BRAGA ET AL., *supra* note 281, at 2.

287. See Press Release, Giffords Law Center to Prevent Gun Violence, *supra* note 282.

288. See BRAGA ET AL., *supra* note 281, at 4; 6–7.

289. *Id.*

290. *Id.* at 7.

291. See *id.* at 8.

292. Press Release, Giffords Law Center to Prevent Gun Violence, *supra* note 282.

293. See *id.*

opportunities for human contact, and coincided with a contraction of police budgets.<sup>294</sup> In October 2021, Oakland surpassed 100 homicides, and outpaced both 2020 and 2019 which had 66 and 52 homicides respectively.<sup>295</sup>

Notably, Oakland's success with reducing gun violence gained attention from other cities and served as inspiration for similar city plans to reduce gun violence. For instance, Mayor Lori Lightfoot acknowledged that policing alone is not the solution to systemic violence in Chicago and endorsed a gun violence reduction plan focused on individuals, communities, and systems for the next three years.<sup>296</sup> The Chicago plan aims to build an effective community-based violence reduction infrastructure. Its guiding principles are focused on reducing the racial "safety gap" across Chicago communities and helping the people and vulnerable families who are at the highest risk of violence.<sup>297</sup> The plan employs intervention and prevention strategies and advances anti-poverty, economic development, and community-driven and data-informed education policies.<sup>298</sup> Traces of Oakland's GVRs blueprint is inherent in the Chicago plan, given that it relies on intervention activities focused on high-risk perpetrators and victims, and concentrates on relationship-based policing to build trust and strengthen police legitimacy.<sup>299</sup>

## CONCLUSION

This Article hopefully adds to the growing literature on surveillance technology and the Fourth Amendment by moving beyond a standard analysis of ShotSpotter technology's inaccuracy rate, misuse, and financial costs. It accomplishes this by examining how some courts are

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294. See, e.g., David Debolt & Annie Sciacca, *After Deadliest Day of 2021, Oakland Reels from Gun Violence*, MERCURY NEWS (Apr. 19, 2021, 4:21 AM), <https://www.mercurynews.com/2021/04/18/after-deadliest-day-of-2020-oakland-reels-from-epidemic-violent-crime> [<https://perma.cc/B5BH-6HXX>]; BondGraham, *supra* note 285; Cristina Rendon, *Oakland City Council Restores \$10M in Funds to Police, Fire Departments amid Spike in Violence*, FOX2 KTVU, (Apr. 12, 2021, 9:16 PM), <https://www.ktvu.com/news/oakland-city-council-restores-10m-in-funds-to-police-fire-departments-amid-spike-in-violence> [<https://perma.cc/Z68N-GATS>].

295. Abené Clayton, *This Is a Crisis: Oakland Records 100<sup>th</sup> Homicide of 2021, Outpacing Last Year*, GUARDIAN, (Sept. 21, 2021 at 4:10 PM), <https://www.theguardian.com/us-news/2021/sep/21/oakland-california-100-homicides-2021> [<https://perma.cc/NSE2-PZ5H>].

296. See Lori Lightfoot, *Letter from Mayor Lightfoot, Introduction to CITY OF CHI., OUR CITY, OUR SAFETY: A COMPREHENSIVE PLAN TO REDUCE VIOLENCE IN CHICAGO (2020)*; CITY OF CHI., *supra* note 52, at 1, 5–6.

297. See CITY OF CHI., *supra* note 52, at 1.

298. *Id.* at 21–22.

299. See *id.* at 6.

applying the exigent circumstances exception to allow police officers to use the pretext of gunshot sounds to create reasonable suspicion where it does not exist. In practice, the use of ShotSpotter increases the frequency of police interactions, which also increases the risk of Black Americans becoming the victims of police brutality or harassment. Indeed, this racialized policing facilitates the status quo of violence and bias against Black Americans. As the MacArthur Justice Center at Northwestern Pritzker School of Law's recent analysis shows, there is no evidence that ShotSpotter reduces crime. There is ample evidence that ShotSpotter is an unreliable technology that increases police deployments and the likelihood that people are wrongfully arrested, detained, or worse. The City of Chicago OIG's report also found that ShotSpotter alerts are unreliable and contribute to wrongful stop-and-frisks by the police in already over-policed Black communities.

At the heart of this Article is the argument that the use of ShotSpotter technology is unconstitutional under *Edmond* because it is not used for a specific law enforcement purpose beyond preventing crime generally. As discussed in Part I, the "primary purpose" of ShotSpotter is to satiate the government's general interest in reducing neighborhood crime. Both the active brief interval stopping of a car in *Edmond* and constant ShotSpotter surveillance in cities nationwide are methods used to reduce crime. With roadside checkpoints, officers look for particularized suspicion, whereas ShotSpotter listens for reasonable suspicion (indicated by the sound of a gunshot). ShotSpotter sensors, which are often used with cameras, actively listen for the sound of gunshots, and notify the police when they hear such gunshots; this does not serve a "specific purpose" outside the normal purpose of preventing crime generally. Under the reasoning and result of *Edmond*, law enforcement is prohibited from using ShotSpotters unless officers have reasons for individualized suspicion.

Finally, spending more money on ineffective ShotSpotters placed in "high crime" neighborhoods across America is not the answer to reducing gun violence. To the contrary, ShotSpotters are part of the problem. As the conversation about racial and social equity continues, we must consider alternative and innovative ideas for reform. As seen with Oakland's successful Ceasefire program, innovative plans can simultaneously build trust in communities and curb gun violence. Indeed, a properly designed GVRS will foster and maintain dignity for participants in a program tailored to save lives and promote community healing.