IN THE CIRCUIT COURT OF COOK COUNTY
CRIMINAL DIVISION

THE STATE OF ILLINOIS v. MICHAEL WILLIAMS	20 CR 0899601 JUDGE VINCENT GAUGHAN PRESIDING

MOTION FOR LEAVE TO FILE BRIEF AS AMICI CURIAE IN SUPPORT OF DEFENDANT'S MOTION FOR A *FRYE* HEARING

Three Chicago community-based organizations—Brighton Park Neighborhood Council, Lucy Parsons Labs, and Organized Communities Against Deportations—respectfully move this court for leave to file the attached brief as amici curiae. See Exhibit A. In support of this motion, Amici state:

1. Amici are a diverse group of organizations that represent, serve, and work on behalf of Chicago residents who are negatively affected by the Chicago Police Department's ("CPD") use of the surveillance technology, ShotSpotter, that is the subject of the Defendant's motion for a *Frye* hearing. Amici seek to provide the Court with information and context that is relevant to the Court's consideration of Defendant's motion, which asks the Court to scrutinize the reliability and scientific underpinnings of the ShotSpotter system in Chicago. In particular, the brief that Amici seek to file provides the court with information as to the operation and results of the ShotSpotter system in Chicago over nearly two years; the manner in which the ShotSpotter system has been deployed across the City of

Chicago; and the consequences of the system, especially for people of color in Chicago's predominantly low-income communities on the South and West sides.

2. More than a million Chicagoans on the South and West sides live under the surveillance of the ShotSpotter gunshot detection system. There are tens of thousands of police deployments in these neighborhoods every year in response to ShotSpotter alerts of supposed gunfire. Thousands of police encounters stem from ShotSpotter alerts. The *Frye* hearing that Defendant asks this Court to hold would, for the first time, subject the ShotSpotter system in Chicago to careful, independent scrutiny with respect to its accuracy and reliability. That inquiry is important to Amici and the communities on whose behalf they work. Meaningful judicial scrutiny will clarify whether the ShotSpotter system is fit to be used as evidence for criminal prosecution and also, implicitly, at earlier stages of the criminal legal process as justification for investigatory stops, frisks, questioning, and other police activities. The Court's inquiry into the ShotSpotter system will also promote public confidence that the state's judicial institutions will properly scrutinize a pervasive police technology that directly affects entire communities in the city on a daily basis.

3. In their brief, Amici detail the results of an analysis of data about CPD deployments that were prompted by ShotSpotter alerts. This analysis, based on 21.5 months of data obtained from the City of Chicago, shows that the vast majority of ShotSpotter alerts turn up no evidence of any gun-related crime or any other crime. Amici are also able to show that the ShotSpotter system has only been deployed in the twelve Chicago police districts that have the highest proportion of Black and Latinx residents and the lowest proportion of White residents. The brief is thus able to demonstrate the disproportionate impact that the ShotSpotter system has on people of color in Chicago, sending thousands of

additional, high-intensity police deployments into Chicago's Black and Brown communities and reinforcing longstanding patterns of racialized policing. Amici further explain how the ShotSpotter system's operation implicates Illinois laws and public policies, including the Illinois Civil Rights Act's prohibition on government activities with racially disparate impact and the constitutional prohibition on investigatory stops without reasonable suspicion.

4. Amici offer the Court this information in order to provide context for its consideration of Defendant's motion for a *Frye* hearing. Allowing the filing of the brief would "provide [the Court] with ideas, arguments, or insights helpful to resolution of the case that were not addressed by the litigants themselves." *Kinkel v. Cingular Wireless, LLC*, Case No. 100925, 2006 WL 8458036, at *1 (Ill. Sup. Ct. Jan. 11, 2006). While there is no rule specifically governing the participation of amici in the Circuit Court, it is well established that this Court, like the Illinois Appellate Court and Supreme Court, have authority to accept amicus curiae briefs. See, *e.g.*, *Roanoke Agency, Inc. v. Edgar,* 101 Ill.2d 315, 317 (1984) (noting the Illinois Attorney General's participation as *amicus curiae* in the circuit court); *Board of Educ. of the City of Chicago v. Rauner*, Case No. 2017CH02157, 2017 WL 2407356, at *4 (Cir. Ct. Cook County Apr. 28, 2017) (granting leave to file amicus briefs). Counsel for Amici have contacted counsel for Defendant Williams, who do not oppose this motion. Counsel have not been able to reach the State's Attorney Office to ascertain its position.

5. Amici therefore request that this Court grant them leave to file their brief in support of the Defendant's motion for a *Frye* hearing regarding ShotSpotter evidence.

WHEREFORE, Amici respectfully request that the Court enter an order granting them leave to file the attached brief *amicus curiae* in support of Defendant Williams's motion to exclude evidence pursuant to *Frye*.

Dated: May 3, 2021

Respectfully submitted,

BRIGHTON PARK NEIGHBORHOOD COUNCIL, LUCY PARSONS LABS, and ORGANIZED COMMUNITIES AGAINST DEPORTATIONS, as Amici Curiae

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PROOF OF SERVICE

The undersigned attorney hereby certifies that she caused a copy of the foregoing *Motion for Leave to File Brief of Amici Curiae in Support of Defendant's Motion for a* Frye *Hearing* and the attached *Brief of Amici Curiae* to be served upon counsel for the State and Defendant by directing that Janie Sanford, a paralegal in her office, deliver a file-stamped copy to the State's Attorney Office in the Leighton Criminal Courts Building and by emailing an electronic copy to attorneys Brendan Max and Lisa Boughton of the Cook County Public Defender, who have consented to receive service in that manner on behalf of the Defendant, on May 3, 2021.

/s/ Alexa Van Brunt
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EXHIBIT A

IN THE CIRCUIT COURT OF COOK COUNTY
CRIMINAL DIVISION

THE STATE OF ILLINOIS v. MICHAEL WILLIAMS	20 CR 0899601 JUDGE VINCENT GAUGHAN PRESIDING

BRIEF OF AMICI CURIAE CHICAGO COMMUNITY-BASED ORGANIZATIONS BRIGHTON PARK NEIGHBORHOOD COUNCIL, LUCY PARSONS LABS, AND ORGANIZED COMMUNITIES AGAINST DEPORTATION

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STATEMENT OF INTEREST OF AMICI

Amici are nonprofit organizations working to make Black and Latinx communities in Chicago safe and free from violence. *Amici* are concerned with discriminatory police practices that endanger their communities and fail to provide genuine public safety. *Amici* work in and on behalf of communities that live under the surveillance of the ShotSpotter system. *Amici* have an interest in this Court's examination of ShotSpotter reliability because the system's faulty results have grave consequences that fall disproportionately on their communities on Chicago's South and West sides.

Brighton Park Neighborhood Council ("BPNC") is a community-based, grassroots organization serving a predominantly Latinx and immigrant community on Chicago's Southwest side. BPNC works to empower the community and build its capacity by providing school and community-based services and programs and by engaging leaders in social justice organizing campaigns. Among BPNC's focus areas is community safety and violence prevention. BPNC has previously brought litigation against flawed and harmful Chicago Police Department ("CPD") technology and practices, including a challenge to the CPD gang database, *see Chicagoans for an End to the Gang Database v. City of Chicago*, No. 18-cv-4242 (N.D. Ill. filed June 19, 2018), and the ongoing federal consent decree litigation, *see Campbell v. City of Chicago*, No. 17-cv-4467 (N.D. Ill. filed June 14, 2017).

Lucy Parsons Labs ("LPL") is a digital rights non-profit composed of academics, transparency activists, artists, and technologists. LPL analyzes issues in technology particularly at the intersection of corporate and government surveillance. LPL has written extensively about the role of surveillance and its impact on civil society, including publishing a website surveying the system of police surveillance in Chicago. LPL's work has

halted the unwarranted use of some surveillance technology in Illinois. LPL has been the plaintiff in numerous cases seeking transparency about CPD practices.

Organized Communities Against Deportation ("OCAD") is an undocumented-led group that organizes against deportations, detention, criminalization, and incarceration, of Black, brown, and immigrant communities in Chicago and surrounding areas. Through grassroots organizing, legal and policy work, direct action and civil disobedience, and cross-movement building, OCAD aims to defend its communities, challenge the institutions that target and dehumanize them, and build collective power. OCAD fights alongside families and individuals challenging these systems to create an environment for its communities to thrive, work, and organize. OCAD has previously brought litigation against flawed and harmful CPD technology and practices. *See Chicagoans for an End to the Gang Database*, No. 18-cv-4242 (N.D. Ill. filed June 19, 2018).

INTRODUCTION AND SUMMARY OF THE ARGUMENT

The ShotSpotter system claims to be able to pinpoint the sound of gunshots with remarkable accuracy. But the City of Chicago's own records tell a different story. A review of nearly two years of data from the Office of Emergency Management and Communications ("OEMC") shows that the ShotSpotter system generates nearly two-thousand alerts every month that turn up absolutely no evidence of gun crime—or *any* crime at all. On an average day in Chicago, the ShotSpotter system sends police out on more than sixty dead-end searches for gunfire. Every one of these deployments creates a dangerous, high-intensity situation where police are primed by ShotSpotter to expect to find a person who is armed and has just fired a weapon. Residents who happen to be in the vicinity of a false alert will be regarded as presumptive threats, likely to be targeted by police for

investigatory stops, foot pursuits, or worse. These deployments create an extremely dangerous situation for residents, prompting unnecessary and hostile police encounters, and creating the conditions for abusive police tactics that have plagued Chicago for decades.

The city only deploys the ShotSpotter system in predominantly Black and Latinx communities. The twelve police districts that are blanketed with ShotSpotter sensors are exactly the districts with the highest proportion of Black and Latinx residents (and, conversely, the lowest proportion of White residents). As a result, only residents of these communities must contend with the dangerous, unnecessary, and wasteful deployments generated by ShotSpotter. The significant number of unsubstantiated ShotSpotter alerts also inflates statistics about supposed gunfire in these communities, creating a faulty, tech-based justification for ever more aggressive policing. Despite ShotSpotter's veneer of objectivity, it ends up exacerbating racialized patterns of policing in Chicago.

Amici provide the Court with this data and context in order to underscore the importance of the Court's inquiry into the reliability of the ShotSpotter system in response to Defendant's *Frye* motion. At stake here is not just whether evidence will be admitted in this particular case, but whether the public can have confidence that its judicial institutions will scrutinize the reliability of a law enforcement technology that prompts tens of thousands of unfounded police deployments every year and disproportionately affects people of color in Chicago. *Amici* urge the Court to undertake a robust inquiry into the reliability of ShotSpotter's reports of gunfire.

ARGUMENT

I. SHOTSPOTTER PROMPTS THOUSANDS OF DEAD-END SEARCHES FOR GUNFIRE IN CHICAGO.

ShotSpotter has entered into contracts with more than 100 police departments across the country to deploy its gunshot detection system. For cities struggling to address high rates of gun violence, ShotSpotter makes a bold pitch: it claims its system of sensors, when wired up to blanket an area of the city, will identify gunshots with "97% accuracy," pinpoint their location, and send detailed, actionable information to police—all within less than a minute after shots are fired.[1] The pitch, unfortunately, does not bear up to scrutiny.

In reality, the ShotSpotter system produces an astonishing number of dead-ends: alerts of gunfire that turn up no evidence of gunfire, according to the police's own classification of each incident. As *amici* detail below, nearly 90% of ShotSpotter alerts in Chicago over the last 21.5 months led police to record no evidence of *any* gun-related crime, let alone of shots just fired.

Although the gap between ShotSpotter's promise and its results may initially be surprising, a closer look at the technology makes this result all too predictable. As Defendant details, there is no good evidence that the ShotSpotter system can reliably distinguish the sound of gunfire from other loud, impulsive noises. The company has never provided validated studies to back up its astonishing claim of "97% accuracy" or 0.5% false positives.[2] Neither ShotSpotter nor CPD have sought to determine how often the system

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[1] See ShotSpotter, About ShotSpotter, https://www.shotspotter.com/company/ [https://perma.cc/HBH7-P378] (last visited May 3, 2021); ShotSpotter, ShotSpotter Technology, https://www.shotspotter.com/technology/ [https://perma.cc/DY7G-TL7R] (last visited May 3, 2021).

[2] It appears the only study on which ShotSpotter relies for its original, more modest, claim of an "80% accuracy rate" is a 1999 study from Redwood City. *See* Lorraine G. Mazerolle, James Frank, Dennis Rogan & Cory Watkins, *Field Evaluation of the ShotSpotter Gunshot Location System: Final Report on the Redwood City Field Trial* (Jan. 7, 2000), available at https://www.ojp.gov/pdffiles1/nij/grants/180112.pdf. But that study did not even attempt to determine how frequently ShotSpotter sends an alert in response to sounds *other* than gunfire;

gets triggered by loud sounds that don't come from guns—like firecrackers, backfiring cars, construction noises, helicopters, and the rest of the city's glorious cacophony.[3] Other cities have cancelled their contracts with ShotSpotter because the system sent their officers out on too many wild goose chases.[4] When pressed under oath, ShotSpotter has stated that several other urban noises can trigger a ShotSpotter incident.[5]

The high rate of dead-end alerts is even less surprising after peeking under the hood of the ShotSpotter technology. As Defendant explains, the technology relies on unqualified employees to determine whether a disembodied audio snippet is gunfire or not. While a piece of (unaudited) software makes an initial attempt to classify the sound, it is ShotSpotter's call-center style staff that ultimately decide whether to classify the sound as gunfire and send it back out to police. Despite the Silicon Valley halo, there is no magic

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it only sought to determine how frequently the system accurately identified test-fired gunshots. The only evidence of which *amici* are aware to support ShotSpotter's claim of 97% accuracy is an unscientific survey of ShotSpotter's customers in which customers were asked "what share of ShotSpotter alerts were actual gunfire" and customer responses "ranged between 50% to 97%." Jillian B. Carr & Jennifer Doleac, *The Geography, Incidence, and Underreporting of Gun Violence: New Evidence using ShotSpotter Data*, at 5, (Apr. 2016), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2770506. But these estimates were "based on [customer] perceptions, not an analysis of actual data." *Id.* A 2016 academic study canvassed the evidence for ShotSpotter's rate of false-positive alerts and concluded that "[a]t this point, there is no reliable evidence about the rate of false positives in actual ShotSpotter data, and this is an area where future research would be helpful." *Id.* Neither does CPD appear to have done any studies to identify false positives. *See* Defendant's Motion to Exclude ShotSpotter Evidence Pursuant to *Frye* and Rule 403, Attachment G (Letter from Mike Will, Vice President of ShotSpotter, to Patrick Waller, Assistant State's Attorney) ("Chicago Police Department did not allow for any Deployment Qualification testing in any district prior to accepting the service as live and active. No live fire or DQV testing was performed in any district as part of this service.").

[3] *See supra* note 2.

[4] *See, e.g.*, Kara Grant, ShotSpotter Sensors Send SDPD Officers to False Alarms More Often Than Advertised, VOICE 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/N6Q2-ST7T]; Lisa Krantz, San Antonio police cut pricey gunshot detection system, SAN ANTONIO EXPRESS-NEWS (Aug. 16, 2017), https://www.expressnews.com/news/local/article/San-Antonio-police-cut-pricey-gunshot-detection-11824797.php [https://perma.cc/5EZS-Q7SN].

[5] *See* Motion to Exclude ShotSpotter Evidence Pursuant to *Frye* and Rule 403, Attachment C, at 113:9–28 (Testimony of ShotSpotter employer Paul Greene, *State of California v. Reed*, No. 16015117 (Sup. Ct. Cal., County of S.F. July 6, 2017)).

algorithm that allows the system to reliably distinguish loud noises that happen to sound like gunshots from actual gunshots.

There is also no good evidence that ShotSpotter reduces gun violence. To the contrary, academic research has found that ShotSpotter and similar acoustic gunshot detection systems ("AGDS") do not reduce serious violent crime and do not even increase the number confirmed shootings that police identify. Instead, these studies determined that the main effect of ShotSpotter was to increase the number of times police are deployed.[6]

Counsel for *amici* have sought to understand the reliability, geographical coverage, and impact of this technology in Chicago by analyzing nearly two years of data obtained from OEMC. OEMC keeps a record every time police are dispatched in response to a ShotSpotter alert. Those records include the time and location of each alert and also a summary of each incident's disposition. Those data allow *amici* to understand both which parts of the city are covered by the system and how often police are deployed to investigate a ShotSpotter alert but find no criminal activity.

The results are startling. The vast majority of ShotSpotter alerts turn up no evidence whatsoever of any guns, gunfire, or any other criminal activity. These dead-end deployments steal city resources away from other, productive uses like community services and economic development in precisely the neighborhoods where people are demanding

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[6] See Mitchell L. Doucette, et al., *Impact of ShotSpotter Technology on Firearm Homicides and Arrests Among Large Metropolitan Counties: A Longitudinal Analysis, 1999-2016*, J. Urban Health (2021) ("Results suggest that implementing ShotSpotter technology has no significant impact on firearm-related homicides or arrest outcomes."), https://doi.org/10.1007/s11524-021-00515-4; Dennis Mares & Emily Blackburn, *Acoustic Gunshot Detection Systems: A Quasi-Experimental Evaluation in St. Louis, MO*, J. Experimental Criminology (2020) ("Our results indicate no reductions in serious violent crimes, yet AGDS increases demands on police resources."), https://doi.org/10.1007/s11292-019-09405-x; Jerry H. Ratcliffe, et al., *A Partially Randomized Field Experiment on the Effect of an Acoustic Gunshot Detection System on Police Incident Reports*, J. Experimental Criminology (2018) ("The AGDS did not significantly affect the number of confirmed shootings, but it did increase the workload of police attending incidents for which no evidence of a shooting was found."), https://doi.org/10.1007/s11292-018-9339-1.

social investment—rather than ever more aggressive policing—in order to create genuine security for residents.[7]

Counsel for *amici* analyzed two OEMC datasets spanning the period from July 1, 2019, through April 14, 2021, to determine how many alerts initiated by a ShotSpotter sensor resulted in discovery of a crime involving a gun—or any crime. These data, which are contained in spreadsheets produced by OEMC in response to Illinois Freedom of Information Act ("FOIA") requests, contain records of police deployments initiated by ShotSpotter, as well as police deployments initiated by other reports of shots fired, like a 9-1-1 call. The spreadsheets include a variety of details about each such deployment—or "call for service," in OEMC parlance. These details include: what initiated the call for service (*e.g.*, ShotSpotter, a 9-1-1 call, etc.); the date, time, and approximate location of each incident;[8] the police beat and district to which officers were called out; and, crucially, a "final disposition" code, which corresponds to CPD's detailed incident reporting codes.[9]

These "final dispositions" illustrate what police found on the scene. If police encounter evidence of criminal activity, they assign the appropriate code corresponding to the specific crime, per CPD's Incident Reporting Guide.[10] CPD's Incident Reporting Guide also requires that certain non-criminal activity be reported, such as lost property, traffic

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[7] The city pays ShotSpotter nearly $10 million per year for its services and expends untold additional resources on the police officers who chase down tens of thousands of unfounded ShotSpotter alerts every year. See City of Chicago, Payment Details for Contract, ShotSpotter Inc., https://webapps1.chicago.gov/vcsearch/city/vendors/102512086/payments [https://perma.cc/VC5B-TGMN]; City of Chicago, Contract with ShotSpotter, Inc. (effective Aug. 20, 2018) [https://perma.cc/AD5X-ZB7M].

[8] OEMC released location data redacted at the block level, so, for example, a call for service might list the address as "7XX W 31st St."

[9] The data also include "event numbers" assigned to each incidents. The 2019 data also includes "RD Numbers" or "Record Division" numbers, which are assigned only when police encounter evidence of a crime or other incident (such as an injury requiring hospitalization) that requires them to file a case report.

[10] See Chicago Police Department, Incident Reporting Guide, CPD-63.451 ¶ A.1, http://directives.chicagopolice.org/directives/data/a7a57bf0-12d7196c-11f12-d71a-3c76ad6f2c11950a.html [https://perma.cc/N38L-83RR].

crashes, and hospitalizations.[11] But if police find no evidence of a crime (or other reportable non-criminal activity), they assign a "Miscellaneous Incident" code that describes the nature of the service—e.g. "Other Police Service" or ""No Person Can Be Found."[12] Police are required to create a case report and obtain an incident number (known as an "RD Number") *only* for reportable incidents, not for miscellaneous incidents.[13]

The "final disposition" incident classifications thus provide the best window into the scene that the police encountered when responding to a ShotSpotter alert. The objective of our analysis was to determine how many ShotSpotter alerts resulted in a final disposition indicating at least the presence of a gun. We analyzed the OEMC data in two ways. First, taking a very conservative approach, we determined what proportion of ShotSpotter-initiated calls for service result in *any* reportable incident of any kind. In other words, we looked at how many calls for service merely resulted in a "Miscellaneous Incident" that did not even prompt police to file a case report. Because many of the reportable incidents have nothing to do with guns, this measure *significantly* overstates the reliability of ShotSpotter alerts. For example, dozens of ShotSpotter alerts resulted in an incident code for traffic crashes—a reportable incident but not one involving gun crime. Thus, in order to sharpen

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[11] See Chicago Police Department, Offense/Incident Classification Code Tables, http://directives.chicagopolice.org/forms/CPD-63.451_Table.pdf [https://perma.cc/KA7Q-FHL4].

[12] See Chicago Police Department, Miscellaneous Incident Reporting Procedures, Special Order S04-13-07, http://directives.chicagopolice.org/directives/data/a7a57be2-12abe584-90812-abeb-5aaf508b17584ccf.html [https://perma.cc/8GM7-4NWK]; Chicago Police Department, Miscellaneous Incident Reporting Table, CPD-11.484, http://directives.chicagopolice.org/directives/data/a7a57bf0-12d85bb3-7df12-d862-848a98f8135f601b.html [https://perma.cc/M4GP-MQY8].

[13] See Incident Reporting Guide, *supra* note 10 ¶ A.2; Chicago Police Department, Assignment and Processing of Records Division Numbers, Special Order S09-03-04 ¶ II.E, http://directives.chicagopolice.org/CPDSergeantsExam_2019/directives/data/a7a57be2-12abe584-90812-abf7-8c5c93e79832f8ea.html?ownapi=1 [https://perma.cc/NGA8-2DJ5]. Some Miscellaneous incidents require police to file an "exception report," but none of these concern guns, gun violence, or criminal conduct. For example, CPD creates "exception reports" for animal cases; lost and found property; abandoned vehicles; sick or drunk people transported directly by police; certain city license violations; and violations of municipal pollution or environmental ordinances. See Miscellaneous Incident Reporting Procedures, *supra* note 12 ¶ II.A. These "exception reports" do not result in an RD Number or case report.

the analysis, we classified each type of reportable incident with respect to whether the incident did or might involve a firearm. So, for example, we coded a "Battery – Aggravated with a Handgun" as an incident involving a gun, but "Battery – Aggravated Knife or Other Cutting Instrument" as not involving a gun.[14] We could then determine what proportion of ShotSpotter-initiated incidents led police to an incident where there was some kind of gun-related crime (even if there was no evidence that a gun had necessarily been fired).[15] Thus, in short, our analysis provides two different outputs: how many ShotSpotter alerts are associated with *any* reportable incident, and how many are associated with gun-involved incidents.

Between July 1, 2019 and April 14, 2021, there were at least 46,743 calls for service initiated by a ShotSpotter alert.[16] The vast majority—at least 88.7%—of ShotSpotter-initiated alerts resulted in police logging an incident *involving no firearm.*[17] Taking even the

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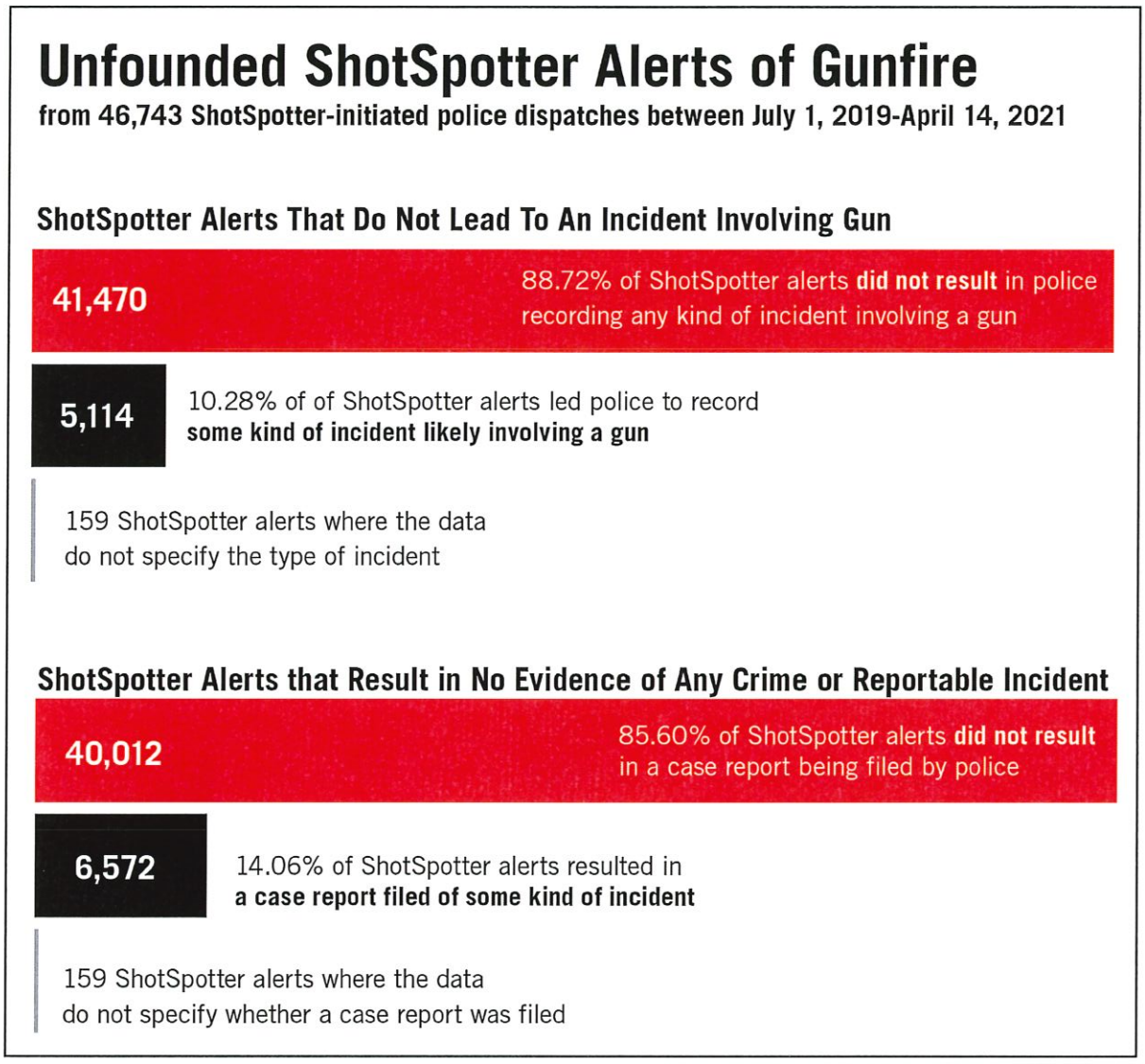
[14] We coded homicides as incidents that involve a firearm, although the data do not actually distinguish between homicides committed using a firearm and other means.

[15] This measure thus likely overcounts the number of instances where shots were actually just fired, because police may find someone with a gun near the location of the ShotSpotter alert without finding any evidence that the gun had recently been fired. Indeed, many of the gun-involved incidents were coded as simple unauthorized possession. *See infra* note 17. Of course, our analysis is only as good as the data that we have been able to obtain. If police miscoded an event, or coded it in such a way that obscures evidence of a gun or actual gunfire, our current analysis cannot detect that. However, given the very large number of incidents represented in the data—46,743 ShotSpotter-initiated incidents in total—any such effects seem likely to wash out.

[16] We have taken a cautious approach to determining the total number of ShotSpotter alerts, focusing only on incidents where OEMC data specify that the "initial type" of the event—*i.e.* the initial reason for dispatch—is a ShotSpotter alert. There are an additional 1,073 alerts where the "final type" of the event—i.e. the event type that is assigned when the incident is closed out—is listed as a ShotSpotter alert but the "initial type" is something else. Of these 1,073 incidents, 933 are coded with the "initial type" as a "Hot Event." It seems likely that these police deployments were also initiated by ShotSpotter, but we have omitted them from the analysis out of an abundance of caution.

[17] 0.34% of the ShotSpotter-initiated incidents are not coded at all and are not included in these percentages of unsubstantiated alerts. Approximately 10.93% of incidents initiated by ShotSpotter are coded as involving a firearm. The plurality of these, 3.7%, are for reckless discharge of a firearm. Incidents coded as unlawful use or possession of a firearm together comprised 2.6%. Aggravated battery involving a firearm—*i.e.* incidents where somebody was shot—comprised only 2.8% of ShotSpotter-initiated alerts. The data show 0.59% of incidents as homicides, although the codes used by police do not distinguish between homicides where the person was killed by a firearm and by other means.

conservative measure, at least 85.6% of these ShotSpotter-initiated dispatches did not even result in a case report—*i.e.* no evidence of any crime or other reportable incident.



The difference between these two figures reflect incidents where police respond to a ShotSpotter alert but end up stumbling upon some other reportable incident. For example, on July 7, 2019 at 12:08 pm, police responded to a ShotSpotter alert in the Englewood neighborhood; officers wrote an individual up for possession of less than 30 grams of

marijuana.[18] Or take July 14, 2019, where ShotSpotter deployed police to the Brighton Park neighborhood, where CPD filed a police report against an individual for "Interference with a Public Officer—Obstructing Justice."[19]

It is difficult to square these data with ShotSpotter's claim of 97% "accuracy" and that it has a "false positive rate of 0.5%."[20] Academic researchers have observed that the calculation for that rate cannot be and is not independently verified.[21] It is mystifying how ShotSpotter gets to a 0.5% false positive rate when well over 85% of ShotSpotter alerts in Chicago do not even produce a reportable incident, let alone a gun crime.

The high proportion of dead-end alerts is startling on its own, but the consequences of the system come into focus when one appreciates the sheer volume of ShotSpotter alerts that turn up no firearm or other reportable incident. Over the 21.5 months covered by the data, there were 41,476 ShotSpotter alerts that resulted in incident codes not involving a gun. That is more than 63 per day. Or, using the more conservative measure, there were a total of 40,012, ShotSpotter alerts—more than 61 per day—that did not even result in a case report.

II. SHOTSPOTTER IMPOSES A DISCRIMINATORY BURDEN ON COMMUNITIES OF COLOR IN CHICAGO.

The harms that arise from this unreliable and unvalidated technology are more than just wasted police resources expended having officers chase down gunfire in vain. ShotSpotter alerts prompt fast-paced, uninformed police hunts that escalate encounters between the police and civilians and put the lives of residents at risk. Moreover, these

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[18] This incident is identified as Event Number 1918808268 and RD Number JC338535.

[19] This incident is identified as Event Number 1919502848 and RD Numbers JC347994 & JC348028.

[20] Jamie Kalven, *Chicago Awaits Video of Police Killing of 13-Year-Old Boy*, The Intercept (Apr. 13, 2021) (quoting a ShotSpotter spokesperson), https://interc.pt/3gjFYQ3; *see also* About ShotSpotter, *supra* note 1.

[21] See Carr & Doleac, *supra* note 2, at 5.

burdens precisely follow the racial divide in the city, exacerbating existing racial inequities in policing.

A. ShotSpotter is only deployed in police districts with the largest proportion of Black and Latinx residents.

Chicago contracted with ShotSpotter to cover approximately 100 square miles of the city. CPD's public statements indicate that it deploys ShotSpotter on a district-by-district basis—*i.e.* an entire police district is either covered with ShotSpotter sensors, or not at all.[22] Though the city does not appear to have published a comprehensive list of ShotSpotter districts, counsel for *amici* identified those districts by analyzing the raw data provided by OEMC, which includes the district number and specific police beat for each ShotSpotter alert. By examining the district codes of more than 46,000 ShotSpotter alerts, we found that the following police districts are clearly wired up with ShotSpotter sensors: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 25.[23] More than 99% of ShotSpotter alerts were located precisely within those 12 districts. By contrast, there were almost no ShotSpotter alerts in the rest of the city's districts, and the stray alerts were nearly always close to the border of a neighboring district covered by ShotSpotter sensors.[24] This analysis revealed that ShotSpotter sensors are not

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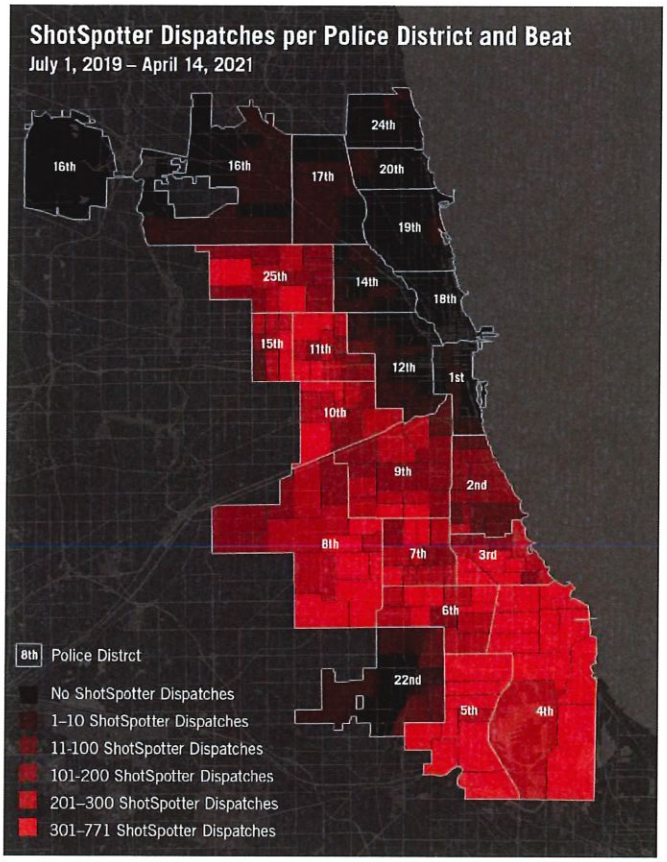
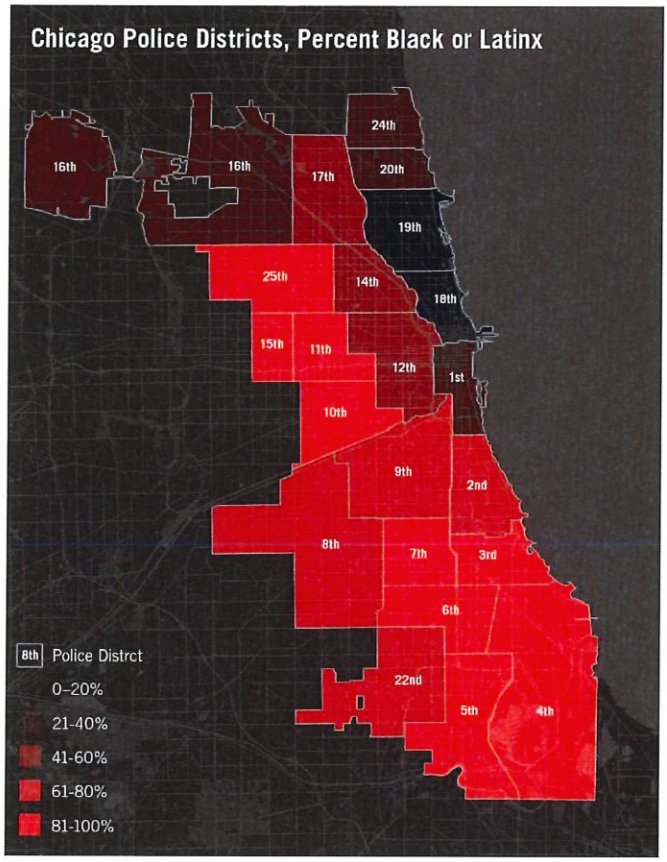
[22] *See* ShotSpotter, Inc., *ShotSpotter Signs $23 Million Multi-Year Agreement With ShotSpotter to Extend Gunshot Detection Coverage Into Next Decade* (Sep. 5, 2018) (describing "active coverage areas that span 12 police districts and total over 100 square miles"), https://www.shotspotter.com/press-releases/chicago-signs-23-million-multi-year-agreement-with-shotspotter-to-extend-gunshot-detection-coverage-into-next-decade/ [https://perma.cc/6DR3-BSTE]; Jeremy Gorner, *6 More Chicago Police Districts to Get Gunshot Detection Technology*, Chicago Tribune (Sep. 29, 2017) (identifying 12 police districts with ShotSpotter), https://www.chicagotribune.com/news/breaking/ct-6-more-cpd-districts-to-get-expanded-gunshot-detection-technology-20170929-story.html.

[23] This aligns with public statements that coverage spans "12 police districts . . . ." *Supra* note 22.

[24] This is not because these districts have few sounds of gunfire. To the contrary, residents in all districts across the city report gunshots to 9-1-1 at comparable rates. *See infra* at 15. The stray alerts outside ShotSpotter districts appear to arise because the detection range of the system has an "overhang" that extends into neighboring districts. A tiny number of alerts (less than 45 out of more than 46,000) fell further beyond the immediate boundary of the 12 ShotSpotter districts, but these alerts likely reflect either data entry errors or unusual events where ShotSpotter provided a location at the very outer reaches of the system's range. That said, *amici* cannot entirely rule out the possibility that the city has installed a few ShotSpotter sensors at particular spots in police districts not otherwise blanketed with ShotSpotter sensors.

deployed across the following districts: 1, 12, 14, 16, 17, 18, 19, 20, 22, 24. The following maps show the frequency of ShotSpotter alerts in each police district, alongside the demographic composition of each police district.

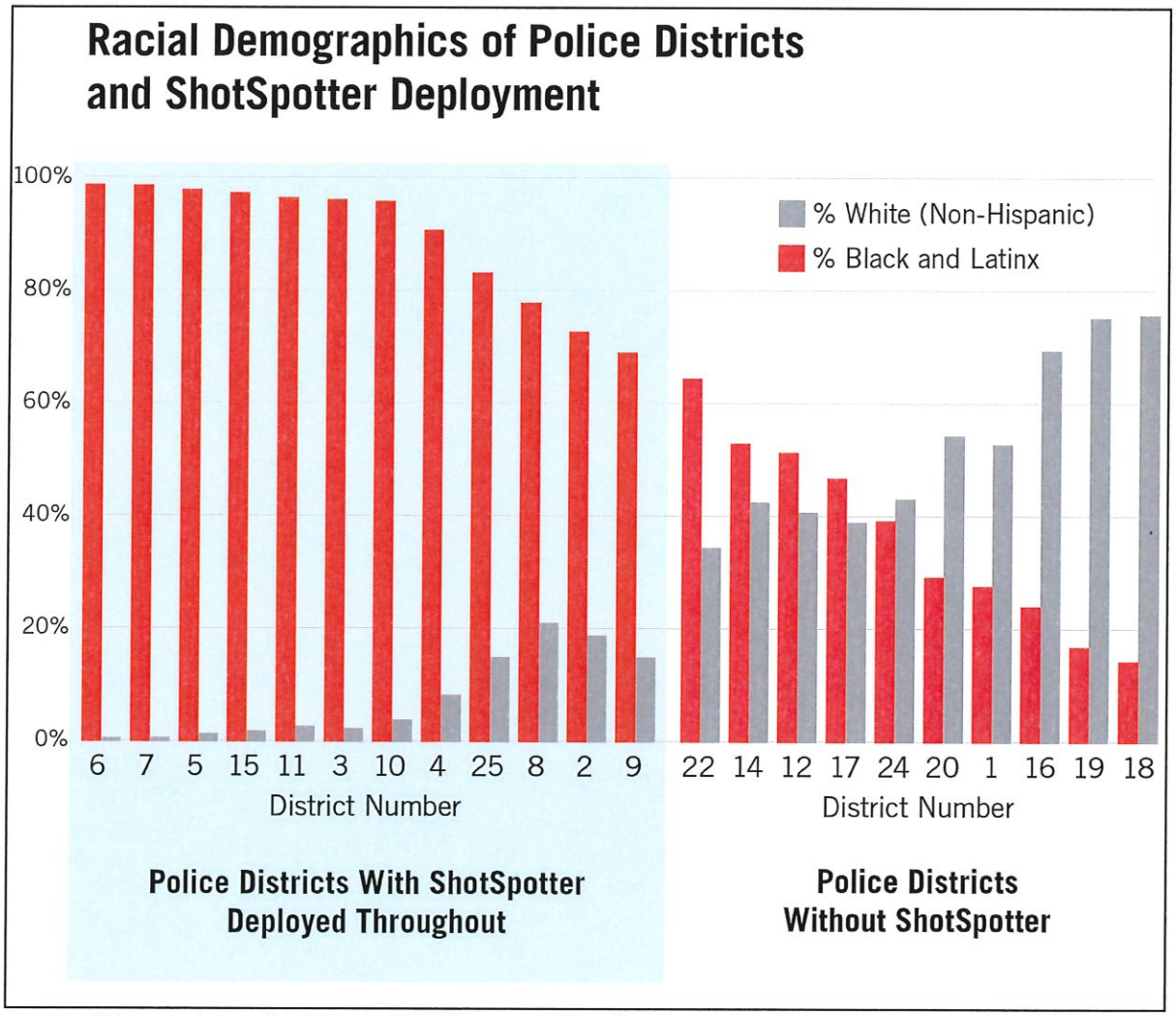




Clearly, there is a stark racial disparity between districts with ShotSpotter and those without. We used census data to determine that the percentage of residents in each police district who identify as "Hispanic" (all races) or Black (non-Hispanic). We also looked to see the percentage of residents who identified as White (non-Hispanic).[25] The results are unescapable: ShotSpotter is deployed in the 12 districts with the highest proportion of Black

[25] This analysis was based on 2010 census data that was compiled into a district-by-district dataset by data journalist John Keefe. That dataset aligns the census figures with the boundaries of each CPD police district, revealing the racial makeup of each district. The data are available here: https://johnkeefe.net/chicago-race-and-ethnicity-data-by-police-district.

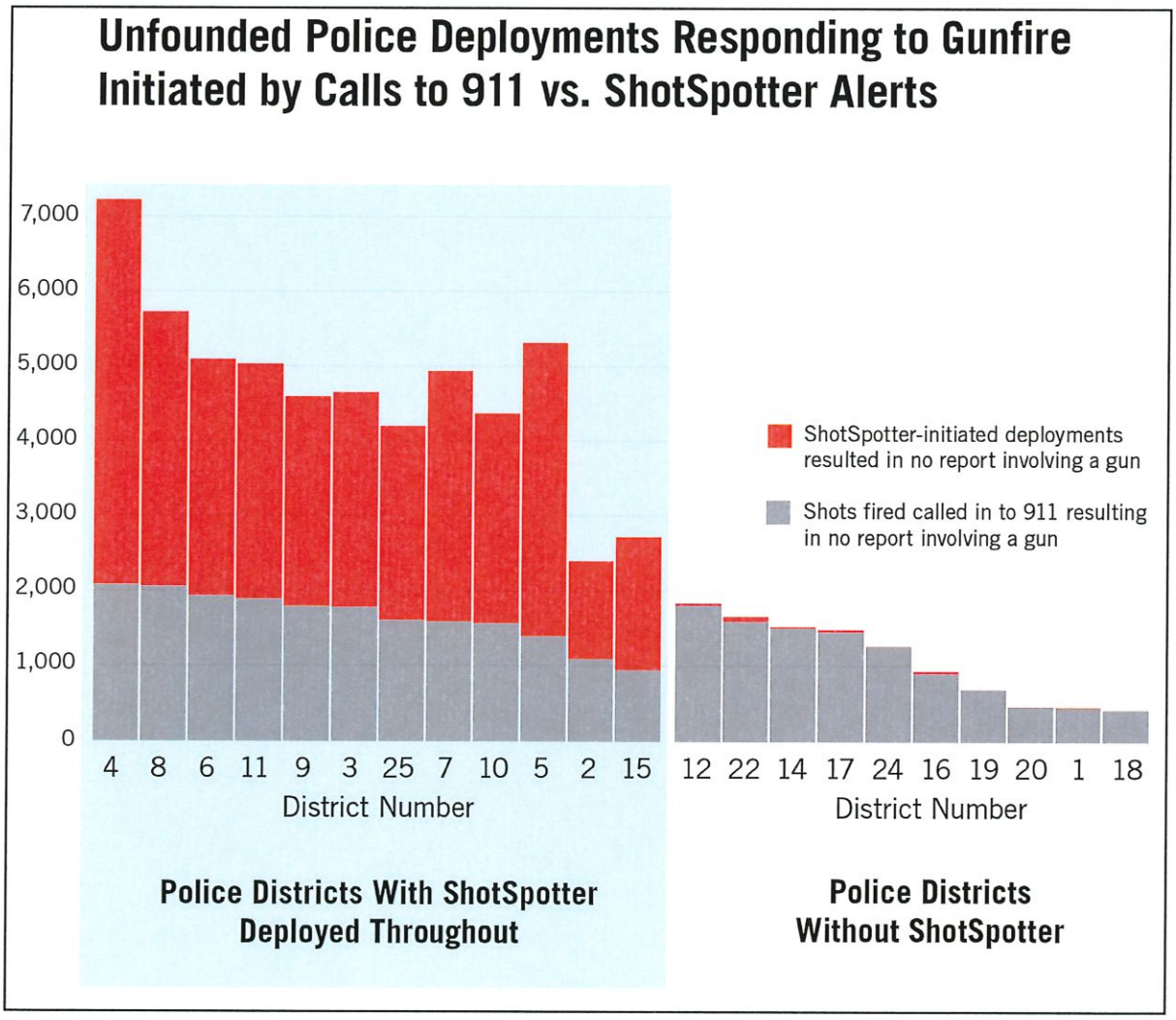
and Latinx residents and the lowest proportion of White residents. There is no district with a majority of White residents that has ShotSpotter wired up in their neighborhoods. Meanwhile, ShotSpotter is deployed in *every* district that is above sixty five percent Latinx or Black. The following graph demonstrates this stark racial divide:



The upshot of this racially disparate ShotSpotter sensor deployment is that the negative consequences of ShotSpotter—including thousands of unsubstantiated police deployments—fall overwhelmingly on Chicago's Black and Latinx residents.

In order to understand the impact of ShotSpotter's presence, we used the OEMC data to compare the number of dead-end deployments initiated by ShotSpotter with

deployments initiated by *other* reports of shots fired—*i.e.* people calling 9-1-1 to report gunfire. Everywhere in the city, there are unsubstantiated reports of gunfire prompted by members of the public or officers in the field. Counsel sought to understand how many *additional* dead-end alerts the presence of ShotSpotter creates. The following chart shows just that: the number of unfounded alerts that were prompted by calls to 9-1-1 (in grey), together with the number of additional unfounded alerts prompted by ShotSpotter (in red).



The impact of ShotSpotter's presence is clear: districts with ShotSpotter sensors are burdened with vastly more unsubstantiated deployments of police looking for gunfire, even

though districts citywide have similar numbers of unfounded alerts due to 9-1-1 calls alone. Our calculations show that over 21.5 months, there were 36,568 additional unfounded police deployments in these districts due to ShotSpotter alerts.[26] The predominantly Black and Latinx communities in these districts are saddled with vastly more high-intensity (but fruitless) police deployments than other neighborhoods for no reason other than the presence of ShotSpotter surveillance. The ShotSpotter system is not a neutral, objective technology. To the contrary, it exacerbates the systemic patterns of racialized policing and overpolicing that have festered in the city for decades.

B. ShotSpotter escalates police encounters and contributes to Chicago's discriminatory patterns of policing.

The ShotSpotter system exposes individuals who live within its surveillance to a significant risk of harm and unjustified investigation at the hands of police officers responding to unreliable alerts. Each ShotSpotter alert points police to a specific location and tells them someone is armed and has just fired their weapon. Individuals in the vicinity of an alert are immediately under suspicion by officers who are primed to believe that they are entering a dangerous situation. Meanwhile, residents in the vicinity will typically have no idea why the police are descending on a particular spot—they won't know that ShotSpotter has interpreted some loud noise as a gunshot. This creates a highly volatile scenario, and—as discussed below—can produce unwarranted investigatory stops, hostile

[26] Because this analysis is meant to show only *additional* police deployments that would not have occurred but for ShotSpotter, we have excluded ShotSpotter incidents where there was a call to 9-1-1 (or some other report of gunfire) directing police to the same area around the same time. Specifically, we excluded a ShotSpotter alert from this analysis if the OEMC data show that police were dispatched to the same police beat to respond to a non-ShotSpotter report of gunfire within 5 minutes before or 10 minutes after the ShotSpotter alert. The chart on the preceding page reflects this approach as well.

encounters, and potentially dangerous intrusions on residents in the community. This scenario repeats itself well over 60 times on an average day in Chicago.

CPD's directives about how police should investigate ShotSpotter alerts do little to mitigate hostile encounters and give no direction whatsoever about *how* to mitigate dangerous situations. CPD's ShotSpotter directive states that, upon receipt of a ShotSpotter alert, responding officers may "canvass the precise location identified via the ShotSpotter system for victims, evidence, and witnesses" but officers are explicitly permitted to "canvass beyond the [ShotSpotter-]recommended 25 meter radius."[27] The directive instructs officers to "take a safe and strategic approach while responding to the incident, being aware that an offender or multiple offenders may be on scene," *id.* ¶ VII.C.2, but the directive does not specify what tactics are permitted in this situation. The only explicit limitation is that "[a] ShotSpotter alert, by itself, does not give responding Department member(s) the legal authority to enter private property." *Id.* ¶ IV.D. Nothing in the policy acknowledges that the police themselves create most hostile or dangerous civilian encounters through use of stop-and-frisk, foot pursuits, and similar tactics.

In addition, CPD's directives do not incorporate guidance issued last year by the United States Court of Appeals for the Seventh Circuit, which stated that a ShotSpotter alert alone does not supply reasonable suspicion for purposes of police stops. *See United States v. Rickmon*, 952. F.3d 876, 881 (7th Cir. 2020) ("Rickmon argues that ShotSpotter, standing on its own, should not allow police officers to stop a vehicle in the immediate vicinity of a gunfire report without any individualized suspicion of that vehicle. We generally agree with

[27] Chicago Police Department, ShotSpotter Flex Program, Special Order S03-19, ¶ VII.C.5, available at: http://directives.chicagopolice.org/CPDSergeantsExam_2019/directives/data/a7a57b85-15d1331c-51715-d133-2e1831b972745907.html [https://perma.cc/ZN55-XR64].

this proposition. Indeed, we question whether a single ShotSpotter alert would amount to reasonable suspicion.")

Given the sheer number of alerts, their unreliability, and the absence of clear departmental policy, ShotSpotter undoubtedly contributes to the CPD's well-documented, discriminatory patterns of stop-and-frisk (or "investigatory stops"), which disproportionately target the Black and Latinx communities. A landmark decision issued by a federal court in New York recognized the profoundly harmful effects that unwarranted and discriminatory investigatory stops have on Black and Latinx communities, describing the burdens of stop-and-frisk in terms that apply readily to ShotSpotter: "While it is true that any one stop is a limited intrusion in duration and deprivation of liberty, each stop is also a demeaning and humiliating experience. No one should live in fear of being stopped whenever he leaves his home to go about the activities of daily life." *Floyd v. City of New York*, 959 F. Supp. 2d 540, 557 (S.D.N.Y. 2013).

In Chicago, just as in New York, police use investigatory stops overwhelmingly against Black and Latinx residents. If anything, the discriminatory burden imposed by stop-and-frisk tactics in Chicago has historically been even more egregious. According to a report from the ACLU of Illinois, in the summer of 2014, "Chicagoans were stopped more than four times as often as New Yorkers at the height of New York City's stop-and-frisk practice." ACLU of Illinois, *Stop and Frisk in Chicago* 3 (Mar. 2015). The ACLU's report led to a settlement agreement with the city in 2015, mandating twice yearly reports and increased data collection and reporting by CPD.[28] The most recent data analysis from 2019

[28] There is a separate, ongoing class action lawsuit filed on behalf of thirty-three Black and Latinx males subject to stop-and-frisk in Chicago alleging that police used race as a factor in determining whether to stop absent reasonable suspicion. See *Smith v. City of Chicago*, No. 15-cv-03467 (N.D. Ill. filed Apr. 20, 2015).

found that "Black Non-Hispanic subjects comprise 71-72% of all subjects stopped for the four-year period beginning January 1, 2014 through December 31, 2017, regardless of the number of stops Chicago police officers have made." Hon. Arlander Keys, *The Third Report Assessing the Chicago Police Department's Compliance with Investigatory Stop & Protective Pat Down Agreement* 20 (Oct. 2019). The proportion of Black Chicagoans who were stopped was the same before and after the agreement was reached, which was also true for Latinx subjects. *Id.* The retired judge overseeing the settlement between the city and the ACLU of Illinois was unsparing in his criticism:

> [T]he facts remain that seemingly unexplainable disproportionate numbers of stops and protective pat downs have impacted civilians who are Black and non-Hispanic to a far greater extent than any other group in Chicago; and Hispanic civilians are also impacted disproportionately compared to White non-Hispanic civilians.[29]

ShotSpotter likely only worsens this trend because a ShotSpotter alert readies officers to see criminal conduct, even where no such behavior may exist. *See Floyd*, 959 F. Supp. at 580 ("[G]iven the nature of their work on patrol, officers may have a systematic tendency to see and report furtive movements where none *objectively* exist."). It is thus predictable that ShotSpotter alerts will lead to intrusive, potentially dangerous encounters. This is consistent with psychological research "that officers may be more likely to perceive a movement as indicative of criminality if the officer has been primed to look for signs that 'crime is afoot.'" *Id.* (citing *Ligon v. City of New York*, 925 F. Supp. 2d 478, 530–31 (S.D.N.Y. 2013). The risk to people of color is further heightened by the now well-recognized phenomenon of unconscious or "implicit" bias that infects decisionmaking, particularly where officers are

[29] Hon. Arlander Keys (ret.), The Third Report Assessing the Chicago Police Department's Compliance With The Investigatory Stop & Protective Pat Down Agreement (Oct. 17, 2019), https://www.aclu-il.org/sites/default/files/field_documents/consultants_3rd_report_in_aclu_matter_10-17-19.pdf [https://perma.cc/KT5T-YDPT].

making quick judgments about whether, for example, someone's motions are "furtive and indicate criminality." *Floyd*, 959 F. Supp. 2d at 580–81 (citing *inter alia* Jerry Kang & Mahzarin R. Banaji, *Fair Measures: A Behavioral Realist Revision of "Affirmative Action"*, 94 Cal. L. Rev. 1063 (2006) and Geoffrey P. Alpert et al., *Police Suspicion and Discretionary Decision Making During Citizen Stops*, 43 Criminology 407, 417–19 (2005)).

Beyond investigatory stops, ShotSpotter also creates more situations where police are liable to use excessive force against civilians—a longstanding problem in Chicago that has been well-documented by independent investigators. A 2017 United States Department of Justice investigation found, unequivocally, that CPD engages "in a pattern or practice of using force in a manner that is unconstitutional, contrary to CPD policy, and unsafe."[30] The report laid the blame for this pattern of abuse squarely on CPD, citing insufficient training, supervision, and accountability, among other things. *Id.* The harms that flow from such practices are incalculable. Scores of Chicagoans have been killed or gravely injured by police. But "even when no lasting physical injury is involved," "[i]nappropriate use of force by the police . . . results in fear and distrust from many of the people whom the police are committed to protect and whom the police need as partners in that effort." *Id.* People in communities with a high presence of ShotSpotter sensors are more likely to become victims of this pattern and practice of police violence.

In these ways, the ShotSpotter system contributes to familiar, racialized patterns of overpolicing in Chicago that have bred mistrust in communities while failing to provide genuine public safety. A 2019 Gallup poll found almost six in 10 (59%) of Chicago-area

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[30] U.S. Dep't of Justice, *Investigation of the Chicago Police Department* 23 (Jan. 2017), https://www.justice.gov/opa/file/925846/download [https://perma.cc/MYZ7-B9UV].

low-income residents say they "know 'some' or 'a lot' of people who have been treated unfairly by the police."[31] Sixty percent of the same surveyed group of Chicagoans responded that "most people in their area view their local police 'negatively' or 'very negatively.'"[32] This mistrust is based on decades of hostile policing that has antagonized the community while failing to deliver actual public safety.[33]

ShotSpotter reinforces this endemic mistrust between police and civilians by generating thousands of high-intensity police deployments likely to produce hostile encounters with residents but which turn up no evidence of gun crime. These deployments are concentrated in Black and Latinx neighborhoods—exactly the parts of the city that have been overpoliced and underserved for decades.

C. ShotSpotter provides a false technological justification for overpolicing.

ShotSpotter risks further exacerbating discriminatory patterns of policing because it generates inflated statistics about gunfire only in the predominantly Black and Latinx districts where it is deployed. Wealthier, predominantly White communities are not saddled with faulty data showing thousands of instances of unsubstantiated gunfire. This disparity paints a false picture about the rate of gunfire in minority communities.

ShotSpotter's gunfire statistics feed into two key statistical tools that drive CPD's decisions about how to deploy police. First, ShotSpotter data is part of the CompStat process that CPD uses to set and enforce its policing targets. CompStat is a "performance

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[31] Steve Crabtree, *Low Trust in Police Complicates Crime Problem in Chicago*, GALLUP (May 30, 2019), https://news.gallup.com/poll/257798/low-trust-police-complicates-crime-problem-chicago.aspx.

[32] *Id.*

[33] *See generally* Chicago Police Accountability Task Force, *Recommendations for Reform: Restoring Trust Between the Chicago Police and the Communities They Serve* (April 2016), https://igchicago.org/wp-content/uploads/2017/01/PATF_Final_Report_4_13_16-1.pdf [https://perma.cc/HG66-939C]; U.S. Dep't of Justice, *Investigation of the Chicago Police Department*, *supra* note 30.

management system" that involves "regularly occurring meetings where department executives and officers discuss and analyze crime problems and the strategies used to address those problems."[34] The point of CompStat is to "identify problems," often using statistical data, and to hold "commanders from a specific geographic area" accountable by requiring them to report at regular CompStat meetings.[35]

CPD's ShotSpotter directive explicitly mandates that covered districts must include "within their CompStat statistical summary" any "crime analysis information and strategic response related to gunfire incidents detected by the ShotSpotter Flex acoustic sensors."[36] It thus appears that ShotSpotter gunfire data is folded into CompStat reports. Because of the remarkable rate of unsubstantiated alerts, the focus on ShotSpotter data may lead police to throw even more resources at a phantom problem, aiming to reduce ShotSpotter-reported gunfire when most of those alerts are not gunfire at all. Unless police carefully distinguish and discount ShotSpotter alerts from other reports of gunfire, the total amount of gunfire will appear much larger in ShotSpotter districts than in others for no reason except that those neighborhoods are where the city has chosen to install the sensors. This false disparity skews the perception of gun violence across the city and may distort how the police and city allocate resources in predominantly minority neighborhoods.

Another way that unreliable ShotSpotter data skews policing in Chicago is through the city's algorithmic "predictive policing" system. These kinds of software packages aim to "predict" where crime is most likely to occur and to deploy police accordingly. Chicago uses

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[34] Bureau of Justice Assistance, CompStat: Its Origins, Evolution, and Future in Law Enforcement Agencies 2 (2013), https://bja.ojp.gov/library/publications/compstat-its-origins-evolution-and-future-law-enforcement-agencies.

[35] *Id.*

[36] Chicago Police Department, Special Order S03-19 ¶ VIII.E.2, *supra* note 27.

a system, formerly known as HunchLab, that was acquired by ShotSpotter in 2018.[37] The system works by ingesting large quantities of historical crime data—as well as other environmental, temporal, and geographic data—and then using statistical "machine learning" techniques to find correlations in the data that predict or "forecast" where crimes are most likely to occur.[38] The software directs police officers to patrol certain locations at certain times—and to use certain tactics—in order to reduce crime, per the system's algorithmic crime forecast.

Although there is much that remains unknown about how this proprietary tool works, ShotSpotter has publicly confirmed that the system generates its "crime risk assessments," in part by relying on "ShotSpotter [gunshot] data."[39] It thus appears that its crime forecasts and patrol recommendations are influenced by ShotSpotter's reports of supposed gunfire. It is not yet clear how CPD has operationalized this predictive policing software, but to the extent the city relies on it to shape its patrol decisions, those decisions will likely be distorted by the ShotSpotter system's high rate of unsubstantiated alerts and racialized coverage pattern.

In these ways, ShotSpotter's veneer of objectivity hides a discriminatory impact. The way the system has been deployed combined with the large numbers of dead-end alerts means that it will reinforce discriminatory patterns of police deployment and aggressive police encounters in covered neighborhoods. Rather than empower police to respond

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[37] *See* ShotSpotter, Inc., ShotSpotter Announces Acquisition of HunchLab to Springboard into AI-Driven Analysis and Predictive Policing (Oct. 3, 2018), https://www.shotspotter.com/press-releases/shotspotter-announces-acquisition-of-hunchlab-to-springboard-into-ai-driven-analysis-and-predictive-policing/. Following HunchLab's acquisition by ShotSpotter, the system was rebranded as ShotSpotter Missions and, more recently, as ShotSpotter Connect.

[38] *See* ShotSpotter, Inc., Form 10-K, Annual Report to the Securities and Exchange Commission, at 12–13 (Mar. 29, 2021), https://www.sec.gov/ix?doc=/Archives/edgar/data/1351636/000156459021016134/ssti-10k_20201231.htm

[39] *Id.* at 13.

precisely and reliably only to actual gunfire, the system ends up providing a tech-based "justification" for the harmful status quo in the neighborhoods where it is deployed.

III. THIS COURT SHOULD SCRUTINIZE SHOTSPOTTER'S RELIABILITY ESPECIALLY CLOSELY BECAUSE OF ITS FAR-REACHING CONSEQUENCES BEYOND THIS SINGLE CASE.

Defendant's motion asks the Court to examine the reliability of the ShotSpotter system to determine whether evidence produced by that system is sufficiently trustworthy—based on methods that are generally accepted in the scientific community—that it can be used against a criminal defendant. *See generally In re Commitment of Simmons*, 213 Ill. 2d 523, 529–530 (2004). The Court should take that gatekeeping responsibility especially seriously because of the ShotSpotter system's far-reaching effects in the community every day.

This Court has the authority to conduct a full hearing to determine whether ShotSpotter's methods meet the *Frye* standard. *See Donaldson v. Central Ill. Public Service Co.*, 199 Ill. 2d 63, 79 (2002) (courts must conduct a "*Frye* evidentiary hearing" where a technique is "new" or "novel," including if it is "original or striking"); *In Re Detention of New*, 2014 IL 116306; *see also People v. Stoll*, 49 Cal. 3d 1136, 1156 (1989) (observing that the *Frye* test is particularly important when applied to "machines or procedures that analyze physical data" because "[l]ay minds might easily, but erroneously, assume that [machines] are objective and infallible."). This type of judicial scrutiny is essential in order to preserve the fairness of criminal proceedings and, more broadly, to ensure public confidence in the integrity of the criminal legal system. *See Ramirez v. State*, 810 So. 2d 836, 853 (Fla. 2001) ("In order to preserve the integrity of the criminal justice system . . . [we] must apply the *Frye* test in a prudent manner to cull scientific fiction and junk science from fact.").

In this case, the Court should conduct an especially searching review of the evidence for ShotSpotter's reliability both because ShotSpotter has not been generally accepted as a source of evidence at prosecution and also because it has a tremendous daily impact on individuals who live under its surveillance.

Close scrutiny is particularly important because of the disproportionate impact on people of color in Chicago. *See supra* § II. The State of Illinois has made clear its public policy that government agencies, including police, may not undertake actions that have a racially discriminatory effect, separate and apart from whether those actions are intentionally discriminatory. Illinois Civil Rights Act, 740 ILCS 23/5 (West 2020). A searching *Frye* analysis would vindicate that public policy by giving the community some confidence that its judicial institutions are closely examining an unproven technology that is being deployed along clear racial lines.

The Court's *Frye* determination should also take into consideration the system's influence on police tactics and investigatory stops in particular. While a *Frye* hearing is, of course, aimed at determining whether certain techniques are sufficiently reliable to generate substantive evidence in Court, the same reliability concerns inform whether such techniques can supply reasonable suspicion or probable cause at an earlier stage of the criminal process.

Recent decisions suggest that ShotSpotter alerts may not even support a finding of "reasonable suspicion" sufficient to justify a *Terry* stop under the Fourth Amendment. *Terry v. Ohio*, 392 U.S. 1, 27 (1968). As noted already, the Seventh Circuit has said that a ShotSpotter alert, on its own, does not provide sufficient proof to warrant an investigatory stop. See *Rickmon*, 952 F.3d at 881. The Seventh Circuit has also held that suspicion directed at a particular location does not, on its own, provide justification to stop anyone

who happens to be in the vicinity. *United States. v. Bohman*, 683 F.3d 861, 864 (7th Cir. 2012). ("A mere suspicion of illegal activity at a particular place is not enough to transfer that suspicion to anyone who leaves that property."). Although a ShotSpotter alert combined with additional facts might justify an investigatory stop, *see Rickmon*, 952 F.3d at 881, the important point for this Court is that a ShotSpotter alert issued alone—despite its high-tech trappings—is deemed no more reliable than an anonymous tip, *id.* at 882; *cf. Navarette v. California*, 572 U.S. 393, 397 (2014).[40]

Fourth Amendment doctrine should thus prompt this Court to scrutinize the reliability of ShotSpotter evidence especially closely. If a ShotSpotter alert is inadequate to justify even an investigatory stop, this Court should review its scientific bona fides very carefully to determine whether it is sufficiently reliable to be admitted as potentially decisive evidence of guilt.

CONCLUSION

Because the ShotSpotter system has significant, cross-cutting consequences for the legal rights of Chicagoans—and because the system's reliability has never before been subject to meaningful judicial scrutiny in this state—*amici* urge this Court to take seriously its duty to investigate and ascertain the reliability of reports of gunfire that ShotSpotter generates.

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[40] The courts' treatment of ShotSpotter is in alignment with how courts in this state treat other third-party information offered as a basis for suspicion. Absent some "'indicia of reliability,'" police officers are not justified in relying on third-party information alone in conducting a stop "unless they 'conduct additional investigation to verify the information.'" *People v. Jackson*, 348 Ill. App. 3d 719, 731 (1st Dist. 2004) (quoting *People v. Sparks*, 315 Ill. App. 3d 786, 793 (4th Dist. 2000)).

Respectfully submitted,

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