

2014

National Gunfire Index

TRADITIONAL MEASURES OF GUN VIOLENCE
grossly understate the true number of criminal shootings in America.

Communities most impacted by gun violence are **LEAST LIKELY TO CALL THE POLICE**



Less than 1 in 5 units

Getting the Bigger Picture

911

ShotSpotter
data, by far, the most complete and detailed data on gun violence that is currently available.

AGGREGATE & ANALYZE the data

SHED LIGHT ON THE TRUTH.

Gun violence undermines the vitality of America's urban centers and of those who live in American cities.

DISCUSSION ABOUT GUN VIOLENCE
THE TRUE SCOPE OF GUN VIOLENCE
AND UNDER-REPORTED

Recognized experts in gunfire acoustics
FOR OVER 15 YEARS
SST provide the most trusted, scalable and reliable gunfire alert and analysis solutions available today

SST
is the global leader in gunshot detection and location technology

SST HAS THE MOST COMPREHENSIVE AND DETAILED DATA ON GUNFIRE INCIDENTS CURRENTLY AVAILABLE

HOW DOES IT WORK?

Highly powerful and collaborative acoustic sensors are deployed over wide coverage areas.

- Programmed to detect impulsive noises (e.g. gunfire)
- Provide actionable intelligence to law enforcement in real time
- Accurately locate the source of specific gunfire incidents
- A number of mathematical techniques accurately locate the source of gunfire incidents

SST
Goal: to expose the Real Gun Violence Activity in America

SST reviews gunshot incidents 24 x 7 x 365
provides the final gunfire data to authorities

2014 National Gunfire Index

Published March 2015



Table of Contents

- 5 Background**
- 6 Top 4 Findings**
 - 6 Top Finding #1
 - 6 Top Finding #2
 - 7 Top Finding #3
 - 7 Top Finding #4
- 8 Gunfire Summary 2014**
- 10 Gunfire Comparison of 2013 and 2014**
- 11 Perspectives**
 - 12 Camden, New Jersey
 - 14 East Palo Alto, California
 - 16 New Haven, Connecticut
 - 18 Oakland, California
 - 20 Plainfield, New Jersey
 - 22 San Francisco, California
 - 24 South Bend, Indiana
 - 26 Springfield, Massachusetts
- 29 Gunfire Comparison of 2013 and 2014, continued**
- 32 Cities**
- 35 Methodology and Notes**
- 38 Additional Information**

Background

SST, Inc. is the global leader in gunshot detection and location technology providing the most trusted, scalable and accurate gunfire alert and analysis solutions available today.

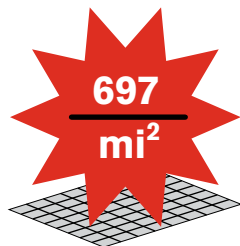
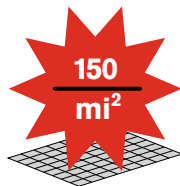
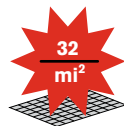
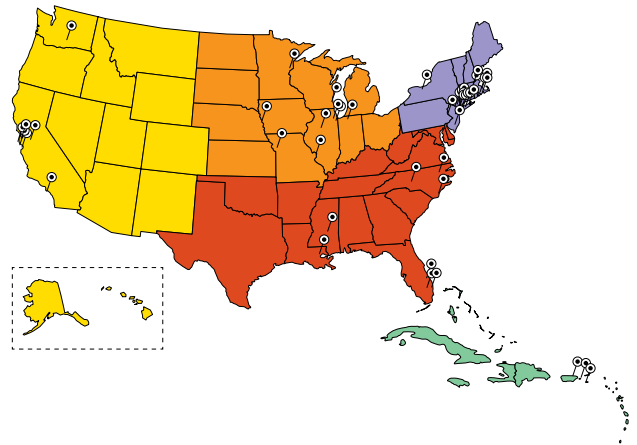
Our company pioneered the concept of deploying an array of powerful and collaborative acoustic sensors programmed to detect gunfire over wide coverage areas and provide actionable intelligence to law enforcement in real time. After applying mathematical techniques to accurately locate the specific source of gunfire incidents, ShotSpotter systems forward the data to the SST Real-Time Incident Review Center (IRC) where expert reviewers provide a final gunfire classification before pushing the alert to authorities—all in less than 45 seconds, on a 24x365 basis. This proven review process yields accurate ground truth related to gunfire incidents. This unique technology and process is protected by over 32 issued patents and honed by 15 years of experience with successful deployments in more than 90 diverse cities worldwide.

SST's real-time intelligence has been sought by law enforcement agencies around the world to combat violent gun crime more effectively, and our data has been admitted into hundreds of court cases in some 17 states, as well as Federal Court. In addition, ShotSpotter data has played a critical role in thousands of investigations.

Gun violence undermines the vitality of our cities and the Americans who call these neighborhoods home. We know from our experience partnering with law enforcement agencies throughout the world that gun violence is both under- and misreported. The tragic consequence is that, at the local level where victimization occurs, there is inadequate public safety. This failed response further complicates the fragile relationships between underserved communities and police. At the national level, the policy narrative around gun violence is trapped within the narrow frame of homicides and gunshot wound victims versus the broader toll by communities under siege from illegal gunfire.

SST believes that the National Gunfire Index provides important insight into the policy discussions about gun violence: it broadens the understanding of the scale and intensity of under reported gun violence and goes well beyond the traditional victimization studies tied to homicides and gunshot wound victims. Our hope is that the data of this Index could be used by social scientists and research organizations to correlate gunfire incidents with disorders such as PTSD and a host of other conditions that in particular impact children. With that, SST has taken the first meaningful step toward understanding the full impact of gunshot violence.

Let's work together to better inform policy makers with this type of data and analysis. We encourage you to comment on this report via twitter, @ShotSpotter, @NGI.



Minimum, Median and Maximum rates of gunfire incidents per square mile in our 2014 Analysis.

Top 4 Findings

SST aggregated the gunshot data from 47 cities out of all those we monitor in the U.S.

Top Finding #1

We reviewed and published 33,975 separate incidents of gunfire in 2014.

That's 105¹ **gunfire incidents** per day, or 4.4 incidents every hour in just the portions of the 47 cities that contributed ShotSpotter data to this analysis.

That compares to more than **11,000 homicides** committed with a firearm each year in the entire United States of America—30 per day, or 1.3 homicides every hour.

The scope and magnitude of gunfire in the U.S. is much greater than that which is measured only in terms of homicides and gunshot wounds.

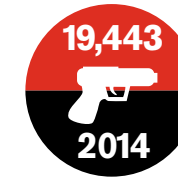
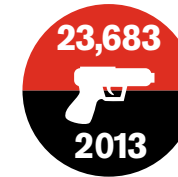
Top Finding #2

In 2014, the rate of gunfire² in areas where ShotSpotter was deployed varied widely:

Minimum: 32 incidents per sq.mi
 Median: 150 incidents per sq.mi
 Maximum: 697 incidents per sq.mi

Top Finding #3

Gunfire is down in the cities we were able to compare 2013 to 2014.



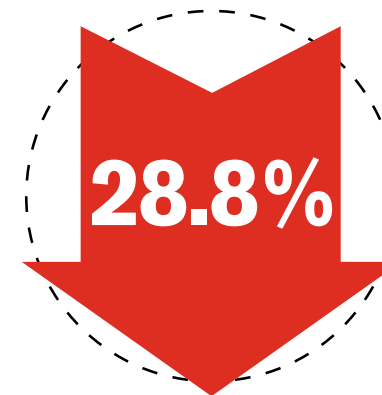
We did a comparative analysis on a sample area of 28 cities across the U.S. that had consistent ShotSpotter coverage in both 2013 and 2014³.

That analysis revealed 23,683 confirmed gunshot incidents in 2013 and 19,443 in 2014 **in the exact same sample area**, showing that illegal gunfire has dropped significantly in ShotSpotter-covered areas.

Top Finding #4

In our sample of 28 cities where ShotSpotter was deployed, the median reduction in gunfire rates in 2014 was 28.8%.

93% or 26 of the 28 cities saw reductions in their rates of gunfire⁴.
43% or 12 of the 28 cities saw reductions greater than 30%.
25% or 7 of the 28 cities saw reductions greater than 40%.



¹ Adjusted for the actual number of days of coverage (average 323 per city)
² Rate of gunfire = number of gunfire incidents per square mile, per year.
³ The 28 cities used in our comparison included 102.84 square miles of urban America. The median coverage area was 3.04 square miles.
⁴ Rate of gunfire = number of gunfire incidents per square mile, per year.

Gunfire Summary 2014

Detailed Findings

The 2014 Gunfire Summary is based on gunfire data aggregated from 47 cities across the U.S. that had ShotSpotter Flex deployed for more than 4/5 of the year.



SST reviewed, classified and published **33,975 separate gunfire incidents** in the 47 cities analyzed here, consisting of 117,161 rounds.

Most intense day:

October 25: 226 incidents in total, 49 in one city.

Single busiest hour for an individual community:

November 14: at 1:00AM (15 incidents of gunfire)

Most dangerous hour of the week in aggregate:

Friday 2:00AM – 3:00AM (803 incidents)

Worst month for any individual community:

January, 60.6 incidents/sq.mi (726.7 annualized)

- Single Gunshot
- Multiple Gunshots
- Possible Gunfire



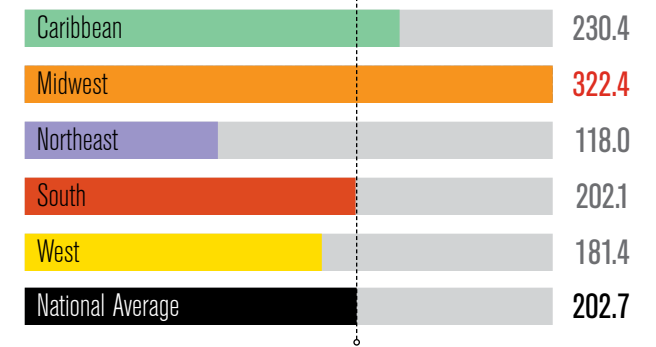
Regional Gunfire Rates

The average gunfire incident rate per square mile varies significantly from region to region.

The highest rate of gunfire is in the Midwest with an average of 322.4 gunfire incidents per square mile during 2014.

The lowest is in the Northeast with 118 gunfire incidents per square mile.

Average Incident Rate by Census Region 2014



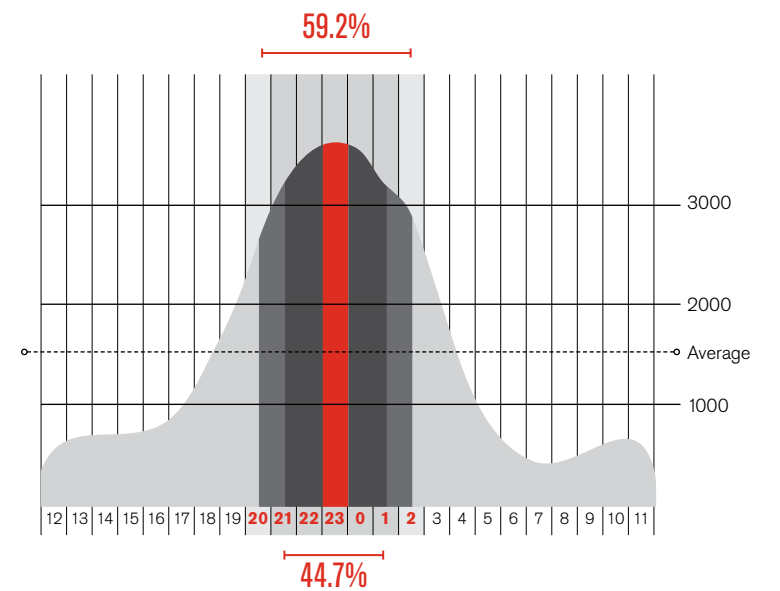
Gunfire Rates Across the Country

Gunfire rates across the country indicate that most gunfire activity happens in the middle of the night.

Almost 45% (44.7%) of all gunfire occurs between 9PM and 1AM.

Almost 60% (59.2%) occurs between 8PM and 2AM.

Number of Incidents by Hour of Day (local time)



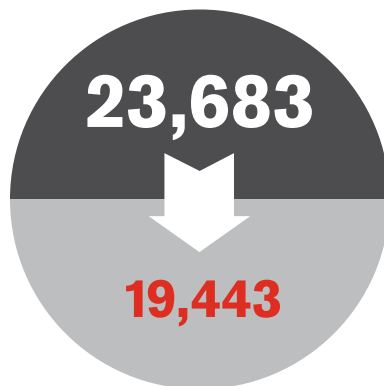
Gunfire Comparison of 2013 and 2014



That comparison revealed 23,683 and 19,443 confirmed gunshot incidents, showing significant gunfire declines in the ShotSpotter-covered areas of these cities.

A representative sample of 28 cities was used in this analysis where ShotSpotter® FlexSM was deployed during both years.

- The 28 cities in our sample covered a total of 102.8 square miles.
- Only cities that had ShotSpotter Flex deployed for more than 4/5 of the year were included in this analysis.
- If a city's contracted coverage area expanded in 2014, the expanded area was not included in this comparison data.



Illegal gunfire has dropped significantly.

We did a comparative analysis, 2013 vs. 2014, on a sample area of 28 cities across the U.S. that had consistent ShotSpotter coverage in both years.

That 'apples-to-apples' comparison revealed 23,683 and 19,443 confirmed gunshot incidents (respectively), that illegal gunfire has dropped significantly in ShotSpotter-covered areas.

Perspectives

Law enforcement agencies across the country share many of the same issues as they work tirelessly to combat gun violence in their communities.

SST partners with approximately 90 law enforcement departments whose cities are currently protected by ShotSpotter.

Several of these public safety agencies have agreed to share their stories, documenting some of the challenges they faced, their plans of action, strategies for success and their results.

These are powerful and useful case studies that offer a glimpse into how any city can approach and succeed in preventing gun violence and engaging with their communities.



Camden, New Jersey

Integrating Technology to Ensure Citizens are Safe and Secure.

Our strategy is a combination of engaging with our community and leveraging technology. We've seen a sharp drop in violent crimes since 2012 which is significant progress. We haven't 'crossed the goal line' just yet, but I'm optimistic about the future.

Gunfire Down 48%

Metro Chief Scott Thomson
Camden, NJ

"I'm hearing from a lot of people that this is a deterrent," says Pastor Tim Merrill, a lifelong resident of the city who runs a youth leadership program. "And I want the police to know instantaneously where a shot came from." It's a key part of Metro Chief Scott Thomson's strategy—community engagement plus leveraging technology—to make Camden as safe as any other town.

In 2012, the murder rate in Camden was about five times that of neighboring Philadelphia—and about eighteen times the murder rate in New York City. Then in 2013 the city dissolved the police department and now contracts police services with a new county-run force (known as "Metro") that was redesigned from the ground up.

In 2014, Camden had half as many homicides and shootings as it did in 2012, which was the city-run force's last full year of operation. Since that period of time residents, children and business owners are buzzing about how the city feels different. "I hear less gun activity, and I feel that it's less likely that I'll be the victim of a violent crime," says Pastor Tim Merrill.

The new Camden County Police Department Metro Division was established with the help of Gov. Chris Christie, and put on the streets.

As a result, murders are down 51 percent, firearm assaults down by one-third. All violent crime is down 22%.

INTERACTING WITH COMMUNITY

Chief Thomson believes human contact is the bedrock of the department's crime reduction strategy and underscores the ethos of the department. "We want our officers to be guardians of this community and provide a visible presence in every neighborhood throughout the city. We want our men and women creating a dialogue with the neighborhood they work in and focusing on engagement with residents," Chief Thomson said. "Correspondingly, we want residents to be able to walk to the corner store, have their kids play outside, and ultimately to feel safe throughout the city."

LEVERAGING TECHNOLOGY

The Metro PD combines license plate readers (capturing every car entering Camden), iCan software, cameras and microphones in a surveillance system that actually makes communities safer. When a gun is fired in the city, ShotSpotter triangulates the signal and pinpoints the location of the shooter within several feet. Using their home computers, a team of citizen volunteers can direct the city's many surveillance cameras to zone in on activity that they deem suspicious. All this liberates police from having to rely on citizens to report gunfire and can bring a squad car to the scene of a shooting in real time. When ShotSpotter detects gunfire, Camden's new Automatic Vehicle Locator System can instantly determine the location of the two nearest patrol cars, which has brought the city's average 9-1-1-response time from one hour to 90 seconds.

Citywide Murders



Citywide Non-Fatal Shooting Victims





East Palo Alto, California

Source: richp.com

Proactive Community Policing Reduces Violence and Random Gunfire.

Although no single effort can be credited with reducing violence and random gunfire in East Palo Alto, we believe that a focused effort by the community and the police department using ShotSpotter data to make informed decisions were essential elements to the success in East Palo Alto.

Gunfire Down 29.1%

Chief Albert Pardini
East Palo Alto, CA

East Palo Alto experienced less violent crime and a substantial (29%) reduction in random gunfire in 2014. These reductions occurred amongst the East Palo Alto Police Department (EPAPD) building strong partnerships with East Palo Alto residents and community groups, as well as using ShotSpotter technology to implement data-driven policing efforts.

Using U.S. Department of Justice funds from the Bureau of Justice Assistance's Smart Policing Initiative (SPI), EPAPD studied gunshot data over a four year period, identified shooting hot spots and peak shooting times, and developed various gunshot reduction efforts.

EPAPD strategically deployed officers into hot spots to enhance patrols and deter violent crime and random gunfire during peak periods. The department also conducted increased investigations in hot spots and home visits to known firearms offenders.

SPI funds also enabled EPAPD to perform increased community outreach in hot spots. Community outreach was performed preemptively as well as following

gunfire incidents. EPAPD staff walked door to door and distributed informational materials to residents living in hot spots informing them of dangers of gunfire as well as the appropriate mechanisms to make anonymous reports.

Whenever gunfire was detected, officers responded to the area and searched for the suspects and evidence linking them to the crime.

When the ShotSpotter technology identified a specific location, officers went to all of the residences and businesses in the area attempting to locate witnesses. If there was no answer at the door, the officers would leave a door tag with their contact information and guidelines for residents to anonymously provide EPAPD with information related to the incident. This proactive effort to engage with the community seems to be paying off.

East Palo Alto Hot Spots (2,568 Activations)





New Haven, Connecticut

Gun Violence is a Public Health Issue.

For four years in a row, the number of homicides in New Haven has been steadily declining, from 34 in 2011 to 12 in 2014. That's a pretty dramatic steady decline in crime from 2011 to last year. Surely there is more than one reason, but ShotSpotter was an important part of the overall approach that enables us to save lives in New Haven.



Chief Dean Esserman
New Haven, CT

In order to prevent gun crime in real time, we need to have as much contextual information as possible to effectively fight gun violence while keeping our officers safe. ShotSpotter gives us timely and accurate information; exactly where the shooting happened, how many shots were fired, how many guns are involved, and whether the shooter was moving or not. ShotSpotter allows us to respond to calls quickly and accurately even when no one is shot.

“VICTIMIZATION” REDEFINED

Gun violence is much larger than what can be measured in homicides and gunshot victims. Confirmed gunfire rates in several cities have been measured at up to 500-1000 incidents per square mile per year. At those rates, even when there are no physically harmed victims, gunfire represents the real “possibility” of being shot and killed. This everyday constant exposure to violence can have a profound effect, especially on children. They, too, are victims of the American gun crime epidemic.

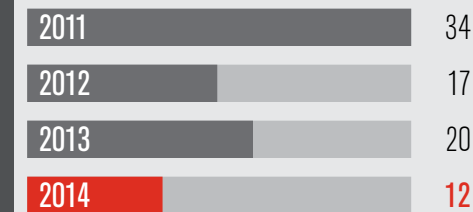
Since 1992, New Haven has been a partner of Yale Child Study Center at Yale Medical School. As a result of our collaboration, the term “victim” has been redefined more broadly, to include anyone who has been traumatized by gun violence. It’s a public health issue, and the impact of gun violence on public health concerns us at the New Haven Police as much as any other aspect of community security.

Consequently, New Haven Police follow up with residents after a crime event. We’ll go back to the scene and check on that address two or three days later. In fact, every graduate rookie officer does a walking beat for a year and will have ShotSpotter on his/her cell phone. The message to the community is, ‘Use a gun illegally in New Haven at your peril!’

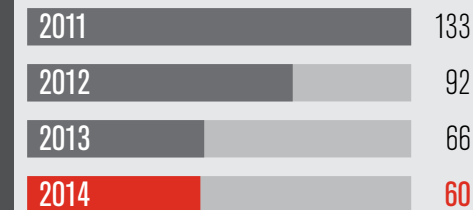
ShotSpotter is a powerful tool for proactive policing, preventing gun violence, and for building trust between police and the community. ShotSpotter evidence is even assisting detectives in court, as corroborating evidence in testimony, bringing the number of unsolved crimes in the city down.

ShotSpotter gunshot detection technology currently covers a small portion of the city, but this year our department will triple coverage in the city. We are data-driven and we put it where we see the need.

Citywide Murders



Citywide Non-Fatal Shooting Victims



Citywide Shots Fired



Oakland, California

Intelligence-based Policing to Safeguard our Community.

The Oakland Police Department is committed to reducing violent crime in our community. Protecting human life is our number one priority. The people of Oakland deserve to live in a city free from the constant threat of gun violence. We are dedicated to utilizing intelligence-based and effective policing strategies to create a safer Oakland.

Gunfire Down 26.1%

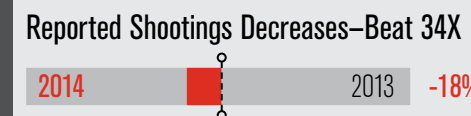
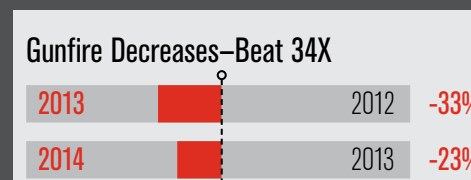
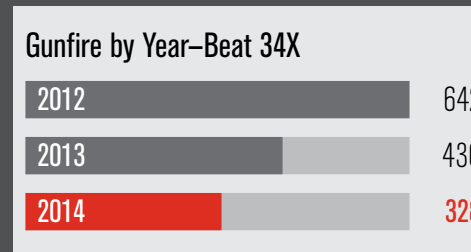
Chief Sean Whent
Oakland, CA

Gun related violence remains a significant challenge in the City of Oakland and the Oakland Police Department is determined to use strategies that work.

Among them:

- ShotSpotter is an effective crime fighting tool. It is cutting edge technology with the ability to pinpoint the location of gunshots in real time. ShotSpotter assists us in locating victims and crime scenes quickly. It also assists us in identifying patterns of gunfire which is important when making deployment decisions.
- Operation Ceasefire which began in October, 2012 in Oakland, involves police, prosecutors, faith leaders, and community members who work collaboratively to directly communicate with young men at highest risk of gun violence. These respectful communications provide young men with information on their specific risk of gun violence and prosecution while simultaneously offering services and providing support so that they can make rational decisions to stay away from gun violence.

2013 Gunfire Rate (Incidents/sq.mi)	2014 Gunfire Rate (Incidents/sq.mi)	Absolute Difference	Percent Change
258.9	191.3	-67.6	-26.4%



The City of Oakland saw an 11 percent reduction in homicides and a 13 percent reduction in reported shootings in 2014 compared to 2013.

There were 10 fewer homicides in 2014 compared to 2013. Chief Whent states: "We understand we have much more work to do but we are on the right track and appreciate our partnership with ShotSpotter."

Plainfield, New Jersey

Preventing Gun Violence.

ShotSpotter, as a key part of our approach to gun crime prevention, enables dispatchers to locate a call for service and dispatch the nearest officer, decreasing our response times, while supporting officer safety. We are committed to using all available resources to ensure the safety of every citizen.

**Gunfire Down
39.8%**

Carl Riley
Director of Public Safety
and Police, Plainfield, NJ

In 2014, the City of Plainfield, NJ saw a significant reduction in violent crime in comparison to 2013. That included a 39.8 percent decrease in gunfire in the ShotSpotter-monitored areas of Plainfield, NJ. Alongside that, we recovered 50 guns from the streets last year and saw a 67 percent reduction in homicides and a 33 percent reduction in aggravated assaults with firearms.

SHOTSPOTTER— A “FORCE MULTIPLIER”

ShotSpotter as one of the key parts of our approach to gun crime prevention enables dispatchers to locate a call for service and dispatch the nearest officer, decreasing our response times, while supporting officer safety. Leveraging ShotSpotter as a ‘force multiplier’, officers are able to quickly respond to the areas in question to help save lives, at times apprehend viable suspects and retrieve valuable evidence for investigations. As a result, we recovered 50 guns from the streets.

Crime Type	2013, Jan–Dec	2014, Jan–Dec	Change
Murder/Manslaughter	9	3	-67%
Aggravated Assaults	190	174	-8%
with Firearm	46	31	-33%
Robbery	166	135	-19%
Burglary	387	321	-17%
Motor Vehicle Theft	97	72	-26%
Arson	15	4	-73%

DIRECTED PATROLS IN COMMUNITY

Over the past year we redeployed our Patrol Officers to conduct directed patrols throughout specific areas within the City between answering calls for service. The Officers do an excellent job with getting out of their cars and positively engaging the community.

NEXT UP

We absolutely look forward to integrating ShotSpotter with other tools we have at our disposal. In the near future we will also be installing 30 high-definition cameras at various locations throughout the City, and outfitting 20 patrol vehicles with GPS Systems with funding from a small technology grant the Police Division has received.

Our mission is clear. We want to reduce gun or any type of violence to have a safe and prosperous City. We are committed to using all available resources to ensure the safety of every citizen in the City of Plainfield.



San Francisco, California

Caring for our Community through Gun Crime Deterrence.

As part of our efforts to reduce violent crime, especially relating to gun violence, ShotSpotter is used as a resource to deploy officers to locations of reported gunfire. Many times, officers arrive within minutes of a shooting, locate a victim, and are able to render aid until paramedics arrive; saving lives through advanced technology. In some incidents, due to a quick response, suspects are still on scene or within a short distance of the crime, and officers have made notable arrests.



Chief Greg Suhr
San Francisco, CA

Providing a wide variety of tools, such as ShotSpotter, to assist law enforcement identify areas of concern within their jurisdiction has been a benefit to the City and County of San Francisco. Whenever there is a report of gunfire through ShotSpotter, each instance is fully investigated to determine if it is an actual shooting, not a car backfire or firecrackers, and tracked as part of our overall gun violence statistic.

REAL TIME SITUATIONAL AWARENESS

Officer safety has increased since the deployment of ShotSpotter as officers now are aware of the exact location of where gun activity has occurred, how many shots were fired, and how many times, as well as number of shooters involved. This increased situational awareness allows officers to respond to actual incidents with real-time information, with supervisors more prepared with a plan of action to address the potential danger at hand to both the officers and the community.

CARING FOR OUR COMMUNITY THROUGH GUN CRIME DETERRENCE

Although gun violence can occur in any neighborhood at any time of day, the data gathered through ShotSpotter allows staff to identify areas with a history of shooting incidents. The information is used not only to deploy additional enforcement resources, but more importantly, to increase community policing efforts in neighborhoods affected by gun violence.

We know that repeated exposure to critical and adverse stress, such as trauma associated with gun violence, at an early age can affect the long-term development of children; both cognitive and physical. Our officers, as part of their daily patrol activity, interact with youth in these identified high-risk neighborhoods, as well as volunteer as coaches and mentors at local non-profit organizations as a way to reduce the cycle of violence.

Through positive interactions between youth and law enforcement, the goal is to reduce chronic stress and build a strong foundation for success for these children. And more importantly, we strive to provide safe and secure neighborhoods for those who live, work, and visit San Francisco.



South Bend, Indiana

The Importance of Community Engagement.

ShotSpotter alerts, which come in with precise location information, enable us to put officers on the scene quickly. Knowing the exact address where the gun was fired enables us to survey that neighborhood—we can knock on doors, check on residents, we can find out if anyone needs help.



Chief Ron Teachman
South Bend, IN

Before ShotSpotter was deployed in South Bend, law enforcement there had to rely on residents to report gunfire through 9-1-1 calls, even though they knew that only a fraction of the gunfire was reported through the 9-1-1 system. Since they only knew about a fraction of the gunfire, it wasn't possible to address it. Now, South Bend PD get more qualified alerts in the small area of South Bend that is protected by ShotSpotter than they do in the entire rest of the city combined.

REAL TIME SITUATIONAL AWARENESS

The 9-1-1 system is inherently fraught with many levels of delays, the last of which is a police visit to the caller's home to verify the nature of the emergency. Critical time is lost, often up to several minutes. Now, knowing the exact location where the gunfire just took place, less than a minute ago, enables us to send our officers into the community exactly where they are needed.

Our officers are safer because they have that situational awareness: they know where the gun was fired, how many rounds were fired, how many shooters there are and whether they are/were moving.

CARING FOR OUR COMMUNITY

Our officers can knock on the doors of all of the homes within a block radius of the shooting and check on our residents. We want to be sure that each person is safe. This near-immediate conversation is not one that we could have had a year ago, since (like the rest of the country) we only knew about ~20% of the gunfire. South Bend officers don't clear the scene until each of those residents are confirmed to be safe and we have verified that no one is hiding out on their property.

This approach of community engagement is helping us to solve crimes. In 2013, about 5% of the 9-1-1 calls led us to discover evidence, such as shell casings, and/or interview witnesses. Now, when we leverage 9-1-1 calls together with ShotSpotter alerts, we recover evidence about 60% of the time. That's a huge improvement.

In 2014, South Bend Police Department has proactively pursued both Group Violence Intervention strategies and ShotSpotter-related "best practices". Although it's hard to measure how much improvement results from which strategy, both are cornerstones of our gun violence reduction portfolio.

As a result, our community has recently come to understand the depth of our care for each and every citizen of South Bend.

Evidence Recovered



Springfield, Massachusetts

Aggressive ‘Best Practices’ Help Reduce Crime, and Prevent Gun Violence.

We’ve implemented aggressive ‘best practices’ in an effort to provide public safety and to contribute to the quality of life for the citizens of the City of Springfield. We aim to establish a partnership between our citizens and police to enhance law enforcement, aid in the prevention of crime, and preserve the public peace.

**Gunfire Down
51.2%**

Police Commissioner
John Barbieri
Springfield, MA

In Springfield, Massachusetts, each and every ShotSpotter activation is treated as a felony crime in progress. The “stop-watch” starts when dispatch answers a call for service.

AGGRESSIVE RESPONSE POLICY

Uniformity in the way the police respond helps to enable us in tracking shell casings, knowing what caliber guns are

out there, and measuring results. We keep an extremely accurate database of crimes and outcomes, and treat every call the same way every time.

Springfield began a newly adopted, aggressive policy for response with the move to ShotSpotter Flex in November, 2012. We get an average of 1.75 ShotSpotter alerts each day, and for each activation, we dispatch four units, often coming from four different directions, including a supervisor and a detective. We’ve found that 95% of gunshot activity is actually a crime in progress—not some form of celebratory gunfire. The intent is to kill. That’s why Springfield PD ensures we’re operating at maximum efficiency during those “golden ten minutes”. Doing so has directly boosted the rate of successful prosecutions.

If we can get a car on scene in the first five minutes:

- There’s a much greater probability we will apprehend a suspect.
- We’re ten times more likely to make an arrest—we track the number of arrests we make due to ShotSpotter alerts.
- We’re ten times more likely to collect evidence.

If we can get a car on scene in less than three minutes, officers have had great success in apprehending suspects at the scene.

In addition, last year we started doing more patrols, and more visible marked cars were assigned to the streets. This put a stop to gunfire in some key neighborhoods, and it hasn’t picked up since.

CELL PHONES MEAN MORE DELAY

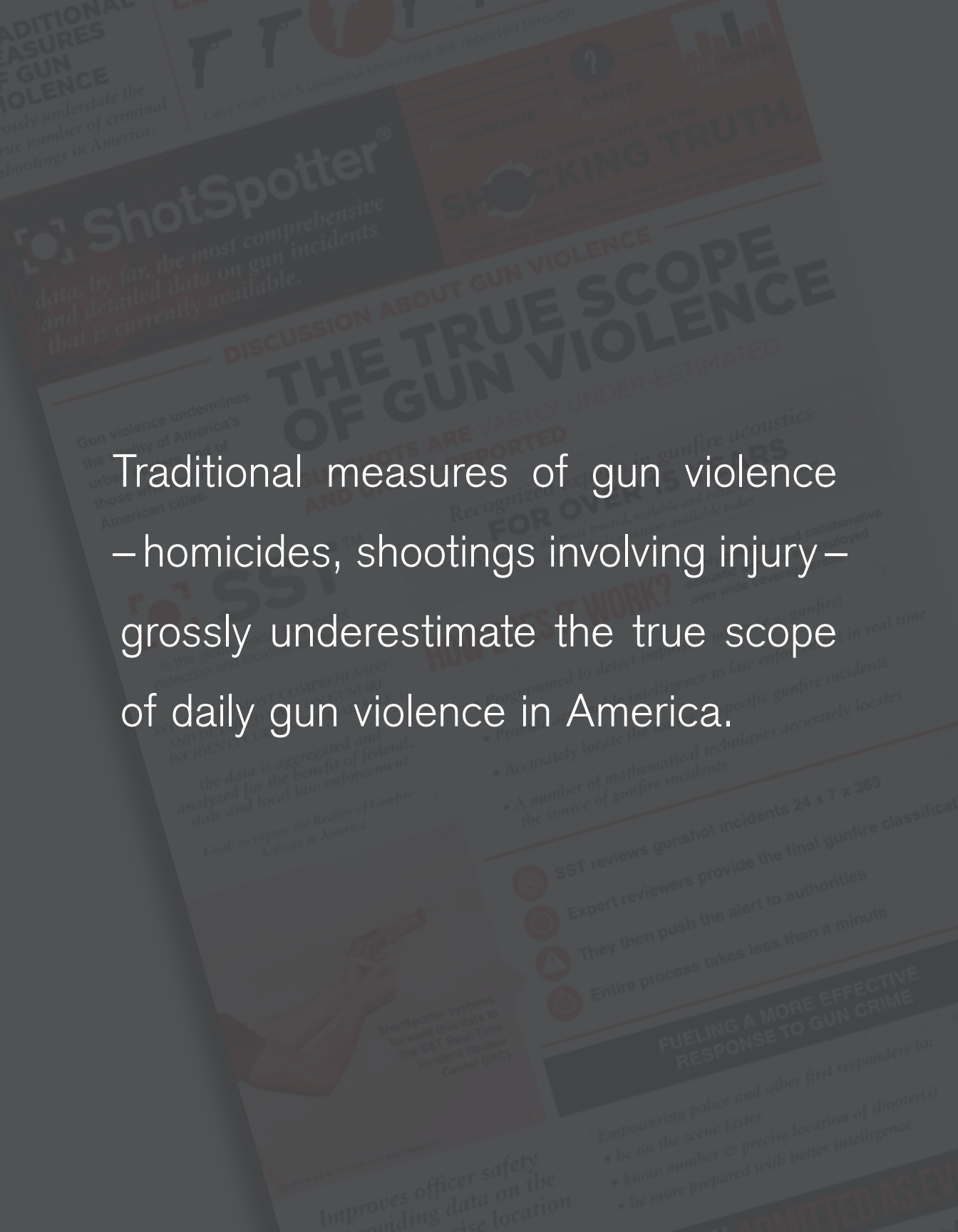
Springfield PD has found that people tend to call 9-1-1 after the discovery of a victim, a body. Then they’ll call. Most people calling 9-1-1 are doing so on their cell phone, which comes with inherent delays. All 9-1-1 calls go to the state police in North Hampton, several towns away. Then they are routed to the appropriate town’s local dispatch. If there are language barriers, we encounter additional delays. The 9-1-1 system introduces latency on several levels—it can take about 3 minutes before the information gets to first responders.

INCIDENT AUDIO IS HELPFUL

Allowing officers to hear the actual audio of the gunfire incident they are responding to enables them to prepare themselves before they enter the situation, and that increases officer safety.

Now that alerts come to every cruiser, self-dispatching helps speed police response. There’s no downside to this: if we can dispatch a car to an active shooter situation in real time, it’s a no-brainer. And clearly it’s working: Springfield’s decline in shootings from 2013 to 2014 was over 51%, one of the most improved cities’ performances in SST’s Gunfire Index.

Springfield Cases	90
Shell Casings Recovered	340
Victims Located	28
Guns Recovered	8
Homicide Cases	7
Arrests Made	10



Traditional measures of gun violence – homicides, shootings involving injury – grossly underestimate the true scope of daily gun violence in America.

Gunfire Comparison of 2013 and 2014, continued

Gunfire rates have decreased significantly in almost all ShotSpotter cities.

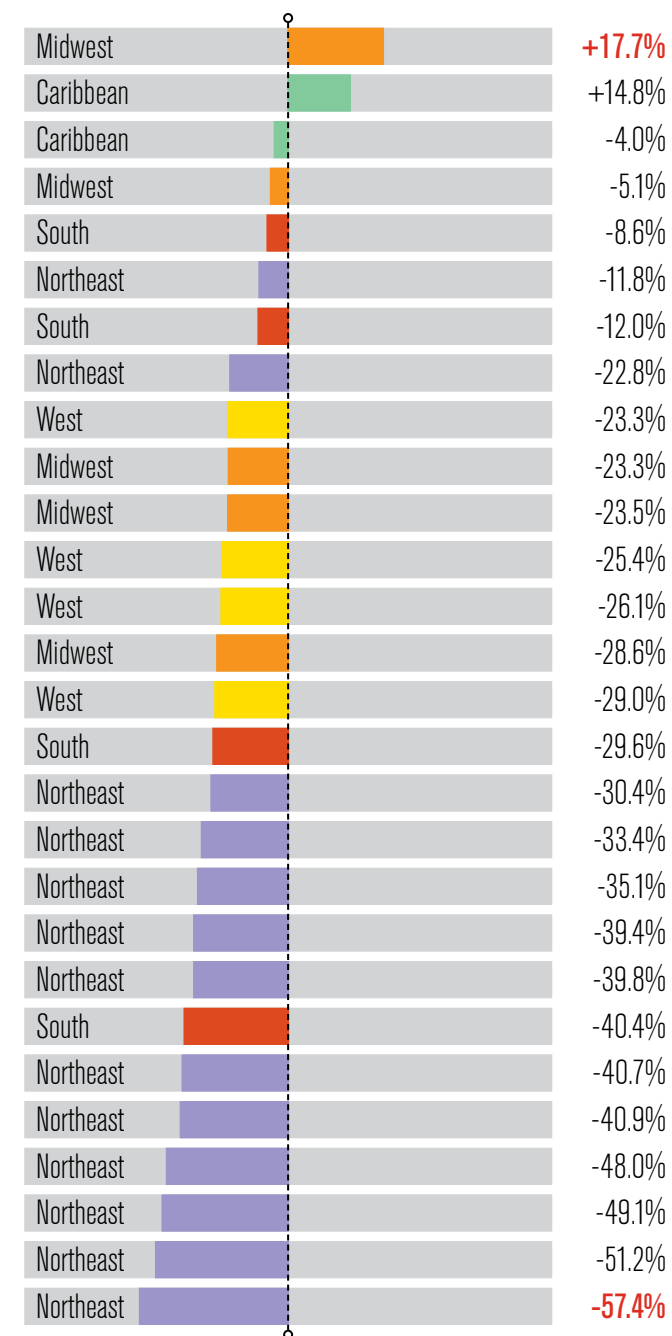
26 of the 28 ShotSpotter cities in the 2014 to 2013 comparison saw reductions in gunfire.

Only 2 of the 28 cities saw increases.

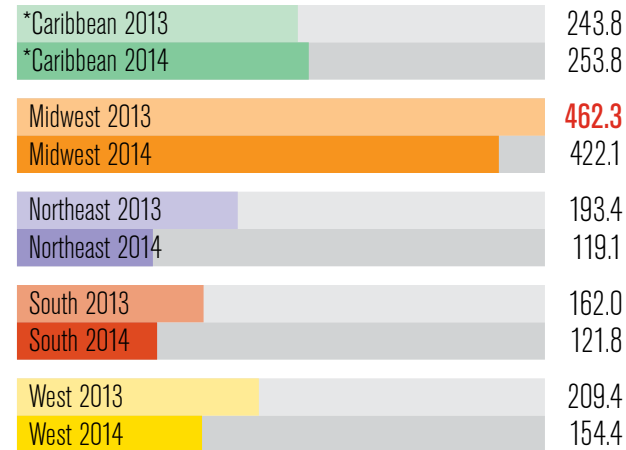
On a city-by-city basis, **median reduction was 28.8%.**

Gunfire rates (incidents per mile) decreased between 4% and 58% in 2014 in those 26 ShotSpotter cities.

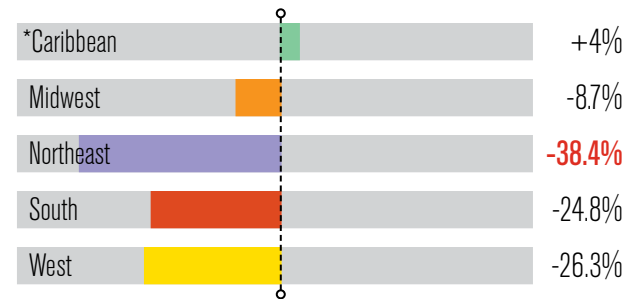
Difference in Gunfire Rate by City 2014 to 2013 (incidents/sq.mi)



Incidents per Square Mile



Percent Change in Incidents per Square Mile



*The Caribbean numbers only include St. Thomas and St. Croix (USVI). The San Juan (PR) system went live in May 2013, and so was not operational long enough in 2013 to be included in this year-on-year comparison. However, an SST analysis revealed a 66% reduction in San Juan gunfire activity between May 2013 and November 2014. On December 16, 2014, Puerto Rico Governor Padilla announced the gunfire reduction, a corresponding 46% reduction in homicides within the ShotSpotter coverage areas, a reduction in police response times from 18-22 minutes to 3 minutes, and his plans to expand the ShotSpotter program in Puerto Rico.

Gunfire rates have decreased significantly on a per square mile basis, in most regions.

The median number of gunfire incidents dropped from 186 gunfire incidents per square mile in 2013 to 150 gunfire incidents per square mile in 2014⁵.

The gunfire incident rates per square mile decreased in every region of the country except for the Caribbean.

The most significant percentage decrease was seen in the Northeast, where ShotSpotter also has the largest coverage area.

⁵The 28 cities in our sample covered a total of 102.84 square miles. The median coverage area was 3.04 square miles per city.

The average number of rounds fired per incident increased across the country.

The number of rounds fired per incident increased in every region of the country.

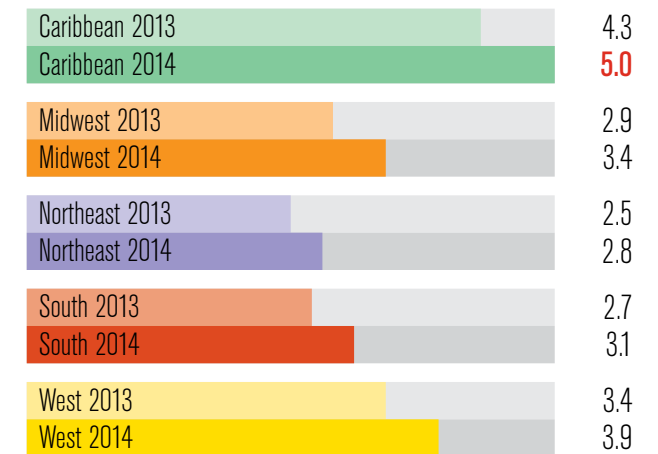
The 2013 average was 3.0 rounds per incident, while the 2014 average increased to 3.5 rounds per incident.

Gunfire remains mostly concentrated on the weekends.

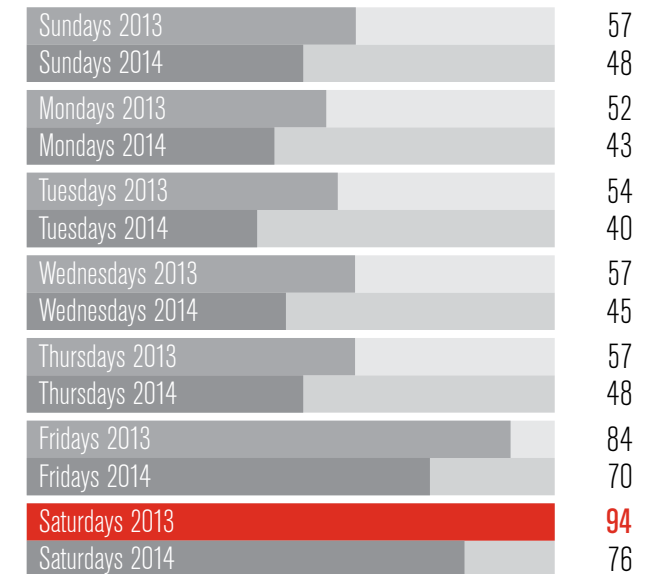
Almost 40% of gunfire in each year takes place on weekends.

(Note: A weekend is 6:00AM Friday morning – 5:59AM Sunday morning).

Average Rounds per Incident by Census Region



Gunfire Incidents by Night of Week (days begin and end at 6AM)



Cities

Cities in the SST, Inc. National Gunfire Index

The 2014 gunfire summary is based on the following superset of 47 cities:

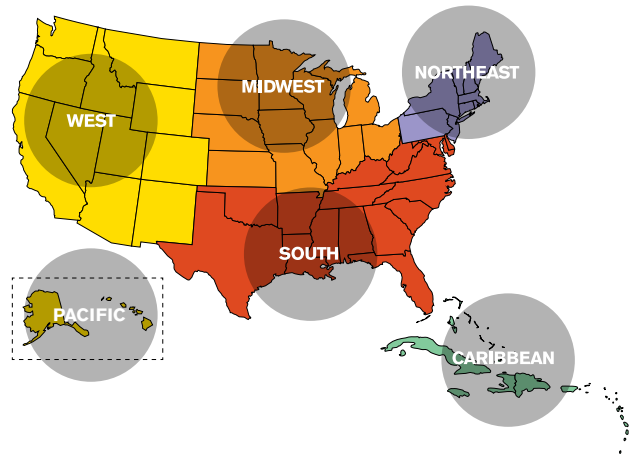
Amityville, NY Northeast	Hempstead, NY Northeast	Riviera Beach, FL South
Atlantic City, NJ Northeast	Huntington Station, NY Northeast	Rochester, NY Northeast
Baton Rouge, LA South	Jackson, MS South	Rocky Mount, NC South
Bell Gardens, CA West	Kansas City, MO Midwest	San Francisco, CA West
Belle Glade, FL South	Miami Gardens, FL South	San Juan, PR Caribbean
Bellport, NY Northeast	Milwaukee, WI Midwest	San Pablo, CA West
Brentwood, NY Northeast	Minneapolis, MN Midwest	South Bend, IN Midwest
Brockton, MA Northeast	New Bedford, MA Northeast	Springfield, MA Northeast
Camden, NJ Northeast	New Haven, CT Northeast	St. Croix, USVI Caribbean
Canton, OH Midwest	Oakland, CA West	St. Louis, MO Midwest
Charlotte, NC South	Omaha, NE Midwest	St. Thomas, USVI Caribbean
Chicago, IL Midwest	Paterson, NJ Northeast	Stockton, CA West
East Chicago, IN Midwest	Peoria, IL Midwest	Wilmington, NC South
East Palo Alto, CA West	Plainfield, NJ Northeast	Wyandanch, NY Northeast
Fall River, MA Northeast	Quincy, WA West	Yonkers, NY Northeast
Hartford, CT Northeast	Richmond, CA West	

Sample Cities Used in Comparison of 2013 and 2014

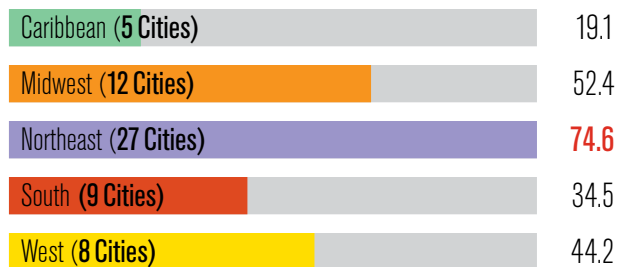
When comparing 2013 gunfire data to 2014 gunfire data, 28 cities where ShotSpotter Flex was deployed during both years were used in this analysis⁶⁺⁷. The 28 cities that make up the “apples to apples” comparison are:

Bellport, NY Northeast	Kansas City, MO Midwest	Rochester, NY Northeast
Brentwood, NY Northeast	Miami Gardens, FL South	Rocky Mount, NC South
Brockton, MA Northeast	Milwaukee, WI Midwest	San Francisco, CA West
Camden, NJ Northeast	New Bedford, MA Northeast	Springfield, MA Northeast
Charlotte, NC Midwest	New Haven, CT Northeast	St. Croix, USVI Caribbean
Chicago, IL Midwest	Oakland, CA West	St. Louis, MO Midwest
East Palo Alto, CA West	Omaha, NE Midwest	St. Thomas, USVI Caribbean
Fall River, MA Northeast	Paterson, NJ Northeast	Wilmington, NC South
Hartford, CT Northeast	Plainfield, NJ Northeast	
Hempstead, NY Northeast	Quincy, WA West	

⁶If a city was not using ShotSpotter Flex for more than 4/5 of either 2013 or 2014, that city was excluded from this analysis.
⁷If a city's contracted coverage area expanded in 2014, the expanded area was not included in this comparison data.



Coverage Area by Census Region (Cities)



ShotSpotter Coverage Regions

Coverage areas are not evenly distributed across the country. To illustrate the variability in coverage area size, we grouped cities within the sample along the four U.S. Census "Regions". We added a single Caribbean region, for which the Census Bureau does not have a corresponding grouping, because the region constitutes a meaningful subset of ShotSpotter coverage areas.

In its smallest U.S. region, ShotSpotter is deployed in 19.1 square miles over five Caribbean communities. In its largest region, ShotSpotter monitors 74.6 square miles across 27 cities in the Northeast.

Methodology and Notes

1. The data in this Index is taken only from the areas covered by ShotSpotter systems. There is no assurance that conclusions drawn from this data will be valid outside the coverage areas.
2. The 2014 analysis in this report is based on 61 communities that had ShotSpotter Flex coverage (reviewed alerts) and were collecting data as of December 31, 2014.
3. 47 of the communities with at least 285 days of coverage in 2014 were used for a detailed study of 2014 gunfire data. 28 communities with at least 285 days of coverage in 2013 and 2014 and at least 50 gunfire incidents in 2013 were used for the detailed comparison of 2013 vs. 2014.
4. The average coverage area for the cities was 3.4 square miles in 2013 and 3.5 square miles in 2014.
5. Gunfire incidents for a year period were counted if the local time in the time zone of their occurrence was between 00:00:00 standard time (i.e., midnight) on January 1 and 23:59:59 daylight saving's time on December 31 (i.e., 1 second before midnight on January 1).

Incidents during the holiday periods of New Years and 4th of July are not counted in the statistics unless explicitly noted because of the prevalence of celebratory gunfire during those holiday periods and the fact that it is highly inconsistent with the normal pattern. The holiday periods are from December 30 to January 2 and from June 27 to July 9.
6. Gunfire per square mile rate calculations take into account growth in coverage areas that occurred in several communities during the reporting periods.

7. Some communities were not monitored by ShotSpotter for the entire 365 days of each reporting year but were monitored by ShotSpotter for enough of the year that it made sense to include them in the report. The inclusion of these areas demands that the days of non-coverage must be accounted for, especially for those calculations involving gunfire incidents per square mile.

The simplest method is to calculate gunfire incidents per square mile for the actual days with coverage and assume that this value represents the entire year. But this method may be inaccurate because of seasonal variation. The gunfire rate for the non-covered days may not be the same as the covered days.

The solution is to impute the number of gunfire incidents for those days for which there was no coverage using a regression-based imputation method, taking account known information about incident rates for the community and trends over time.

Imputation of incidents data is done only for gunfire rates for communities that have coverage data for more than 285 days (about 4/5 of the non-holiday part of a year) in both 2013 and 2014. Communities with less than 285 days were not used in the gunfire rate calculations, leaving 28 communities for the 2013 to 2014 comparisons and 47 communities for 2014 alone, out of the 61 total communities used in the rest of the Index.

This method was cross-checked using cities with two full years of data, comparing actual data to imputed values for simulated missing values. The average difference by city between the gunfire rates using imputed values vs. using actual values was only 2.2%, showing that imputation can be relied upon to give accurate results.

8. Incidents were counted only after formal qualification and operational use of ShotSpotter data by the client agency began, even if gunfire or other incidents were detected previously. Incidents were counted as gunfire if they were classified as Single Gunfire, Multiple Gunfire, or Possible Gunfire by SST-certified review personnel. All other incident types (fireworks, firecrackers, explosions unrelated to gunfire, transformer explosions, thunder, lightning, helicopters, etc.) were excluded from all statistics presented in this report. Gunfire incidents not reviewed by SST-certified review personnel are also excluded.
9. ShotSpotter data does not remain static, as information and adjustments are often made several days or weeks after initial detection (as forensic evidence is analyzed, cases are investigated, etc.). This report takes into account the most accurate and recently-available information.
10. Square mileage is measured on the basis of contractual coverage area. For each such area, the geographic area is defined as a polygon surrounding each coverage area. If the polygon coordinates are not available, the contracted area is used. In some cases, small areas within these coverage areas are intentionally excluded when gunfire is regularly expected in those specific locations (e.g. a legal outdoor shooting range or police practice range). Gunfire which takes place in those locations outside of authorized areas is still included in the tallies, but gunfire which takes place during permitted (expected) periods is not included.

Gunfire incidents occurring outside the immediate vicinity of the contracted coverage areas were excluded from the study.
11. When the Friday, Saturday and Sunday gunfire totals are compared to the rest of the week, a day is defined as starting at 06:00:00 local time and extending to 05:59:59 the next morning.
For example, early 02:05 Sunday morning is counted as Saturday night.
12. Individual hours of the week and days of the week were calculated on a local time basis.

Additional Information

Email and Phone

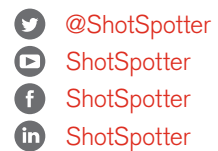
For more information, please contact SST, Inc. at NGI@ShotSpotter.com or at 1.888.274.6877, x244, and indicate that you are seeking information on the SST National Gunfire Index. Please provide all your contact information, including name, title, organization, address, email and telephone.

Download

Download a copy of this SST National Gunfire Index Report and prior reports at www.ShotSpotter.com/2015NGI.

Join the Discussion Online

For more information, please contact SST, Inc. at NGI@ShotSpotter.com or at 1.888.274.6877, x244, and indicate that you are seeking information on the SST National Gunfire Index. Please provide all your contact information, including name, title, organization, address, email and telephone.





SST, Inc.

7979 Gateway Boulevard, Suite 210
Newark, California 94560

+1.888.274.6877 x244

NGI@ShotSpotter.com

www.ShotSpotter.com/2015NGI

Copyright © 2015 SST, Inc. All rights reserved.

ShotSpotter® Flex™, ShotSpotter® SiteSecure™, ShotSpotter®, ShotSpotter® Gunshot Location System™, and the ShotSpotter logo are registered trademarks of SST, Inc.; SST and ShotSpotter technology are protected by one or more issued U.S. and foreign patents, with other domestic and foreign patents pending, as detailed at www.ShotSpotter.com/patents.