National Gunfire Index

2014

Traditional measures of gun violence—homicides, shootings involving injury, and victimization surveys—grossly underestimate the true scope of daily gun violence.

SST™

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Summary of First Half 2014 Results

Total Gunfire

SST™ aggregated the gunshot data from 56 cities out of all those we monitor in the U.S. In the first six months of this year, in those 56 cities, ShotSpotter® Flex℠ detected a total of 19,946 separate incidents of gunfire.

Excluding holidays, there were 17,863 gunfire incidents in our coverage area in the first half of 2014, or 98.7 every day, approximately 4.1 incidents every hour.

17,863

First Half 2014

98.7

Every Day

4.1
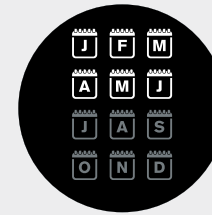
Every Hour

Summary of
First Half 2014
Results

Gunfire Incidents per Square Mile, by Region

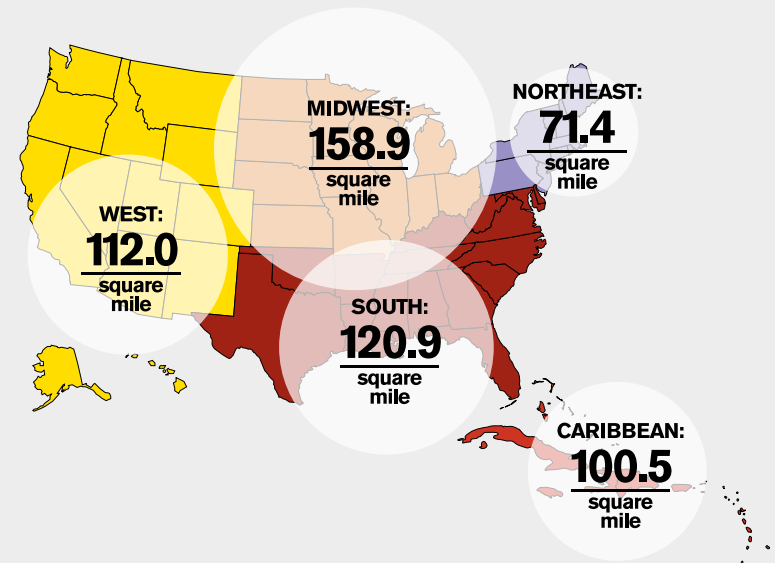Most incidents per square mile were in the Midwest and least were in the Northeast.

Median: 87.8/square mile
Average: 110.2/square mile

The city with the highest rate of gunfire had an average of 381.8 gunfire incidents in the 6 month reporting period in a single square mile (2.1 per day). That city's gunfire rate was 3.5 times higher than national average of 110.2.

The average incident rate per square mile is shown here.

Regional numbers are based on sample cities in that region.
See Communities.

MIDWEST:
158.9
square mile

NORTHEAST:
71.4
square mile

WEST:
112.0
square mile

SOUTH:
120.9
square mile

CARIBBEAN:
100.5
square mile

Summary of First Half 2014 Results

Peaks of Gunfire Incidents, Local Time by Region

By time zone, the peak for gunfire gets later as you move East. In the Pacific time zone, it's 10:25pm.

The peak gunfire in Central time is 11:30pm, Eastern Standard time it's 12:20am and in the Caribbean the peak gunfire time is 1:00am.

Friday, Saturday and Sunday together accounted for 53% of all weekly gunfire.

Pacific **Mountain** **Central** **Eastern** **Caribbean**

10:25pm   11:30pm   12:20am   1:00am

Notes on Coverage Areas: ShotSpotter Flex coverage on June 30, 2014 was comprised of 181 square miles across 56 U.S. communities. ShotSpotter Flex coverage per agency ranges from 1 to 13 square miles. Mean coverage area was 3.2 square miles per community. Those 181 square miles break down as follows: 59.6 in Northeast (across 23 communities), 36.9 in Midwest (across 12 communities), 36.4 in West (across 8 communities), 34.5 in South (across 9 communities), and 14.1 in the Caribbean (across 4 communities).
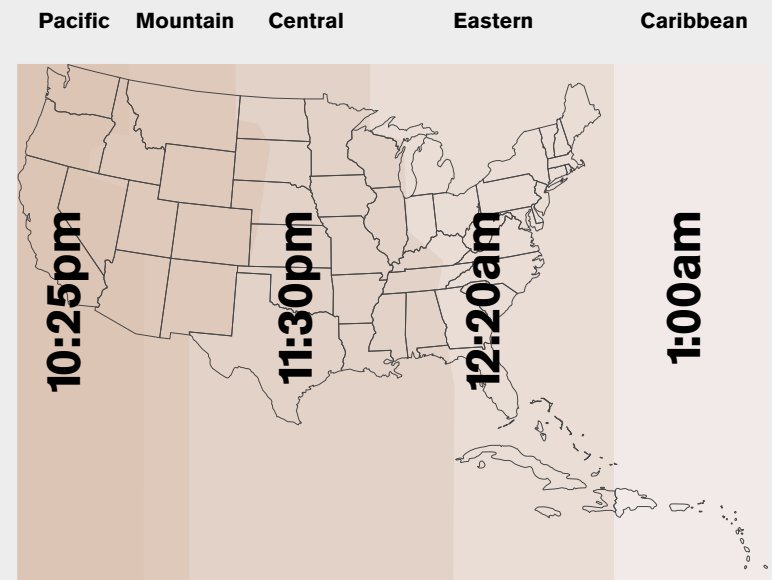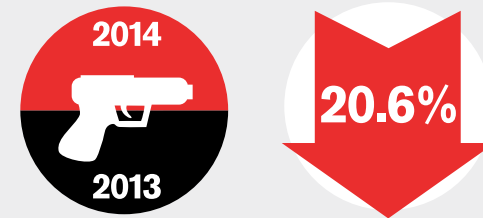
Comparing
First Half 2014 with
First Half 2013

In order to make a meaningful comparison between the First Half 2014 and the First Half 2013, we selected a subset of 31 of the 56 cities that maintained continuous ShotSpotter Flex coverage throughout both periods. The data from those 31 cities represents an "apples-to-apples" comparison.

Gunfire Incidents

Overall the number of gunfire incidents is down, significantly, by 20.6% both in absolute numbers from 14,703 to 11,675 and also in density, per square miles -27.2%, from 149.1 to 108.5/square mile in every region of the U.S. where ShotSpotter Flex is deployed.

At the same time, the average number of rounds fired per incident is up about 14%.

2014

2013

20.6%

Gunfire Incidents

2014

2013

14%
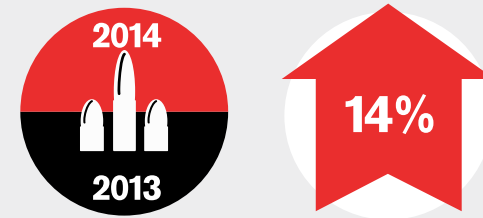
Rounds Fired

Comparing
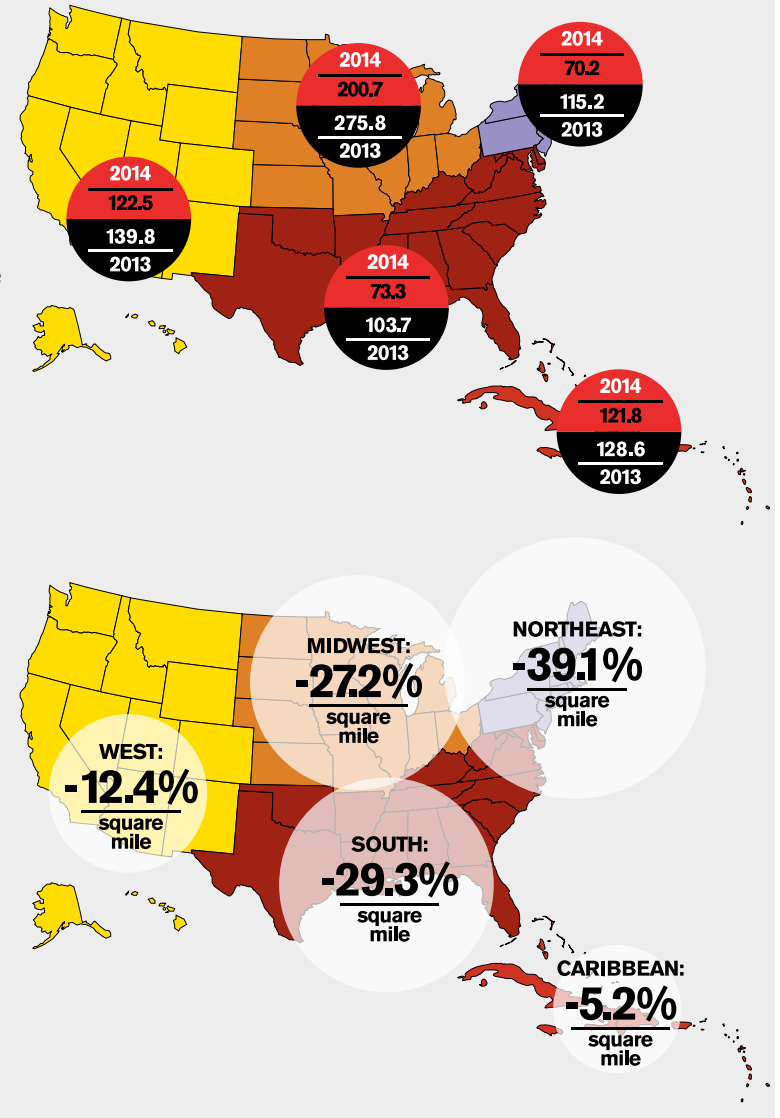# First Half 2014 with
First Half 2013

Gunfire Incidents, by Region

Every single region in our sample of 31 communities saw a decrease in incidents per square mile.

The Midwest had the greatest decrease, from 275.8 gunfire incidents per mile in 1H2013 to 200.7 the following year. The Northeast had the largest decrease of 39.1% while the Caribbean had the least change, decreasing 5.2%.

Gunfire incidents are down in almost every ShotSpotter Flex city. In the 31 communities that we were able to analyze both for 1H2013 and 1H2014, gunfire incidents were down in 28 of the 31 communities, or 90% of them.

Regional numbers are based on sample cities in that region. See Communities.

2014	70.2	115.2	2013
2014	200.7	275.8	2013
2014	122.5	139.8	2013
2014	73.3	103.7	2013
2014	121.8	128.6	2013

MIDWEST: **-27.2%** square mile

NORTHEAST: **-39.1%** square mile

WEST: **-12.4%** square mile

SOUTH: **-29.3%** square mile
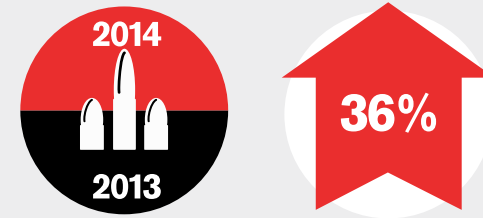
CARIBBEAN: **-5.2%** square mile

Comparing
First Half 2014 with
First Half 2013

Rounds (Bullets) Fired per Gunfire Incident

Rounds (bullets) fired per gunfire incident were up by 36%. On average, 3.2 rounds were fired per incident during the first half of 2014, up 10% from first half 2013 average of 2.9 rounds per incident.

1H2014: 58,087 Rounds fired, 3.2 Average
1H2013: 42,830 Rounds fired, 2.9 Average

2014
2013

36%

**Total Number of Rounds
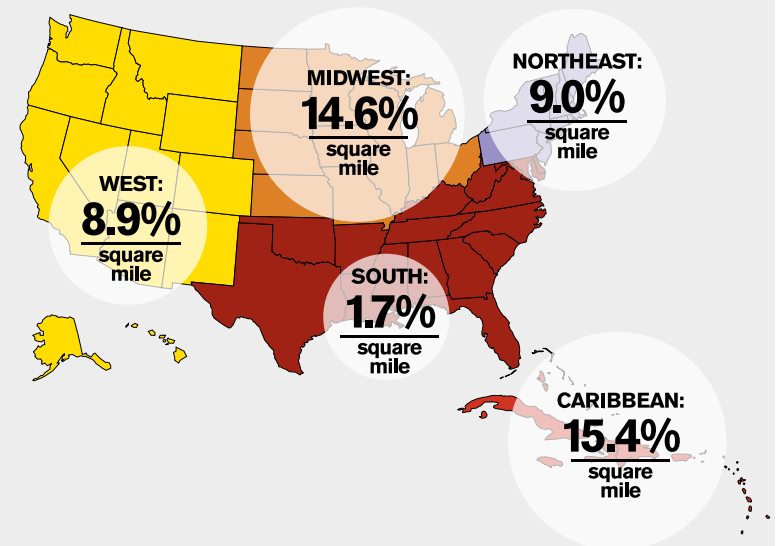Fired Per Incident**

2014
2013

14%
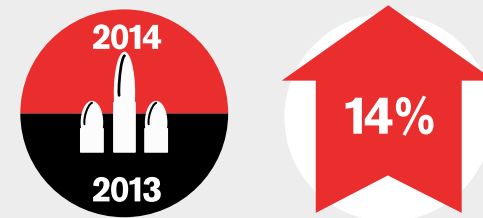
**Average Number of Rounds
Fired Per Incident**

Comparing
First Half 2014 with
First Half 2013

Rounds (Bullets) Fired by Gunfire Incident, by Region

The average number of bullets fired per incident varies by region (i.e. 3.7 rounds/incident in the West this year), but comparing 1H2014 to 1H2013, that number dropped in each region.

Regional numbers are based on sample cities in that region. See Communities.

2014 3.1 / 2.7 **2013**

2014 2.7 / 2.4 **2013**

2014 3.7 / 3.4 **2013**

2014 3.0 / 2.9 **2013**

2014 4.7 / 4.1 **2013**

MIDWEST: 14.6% square mile

NORTHEAST: 9.0% square mile

WEST: 8.9% square mile

SOUTH: 1.7% square mile

CARIBBEAN: 15.4% square mile
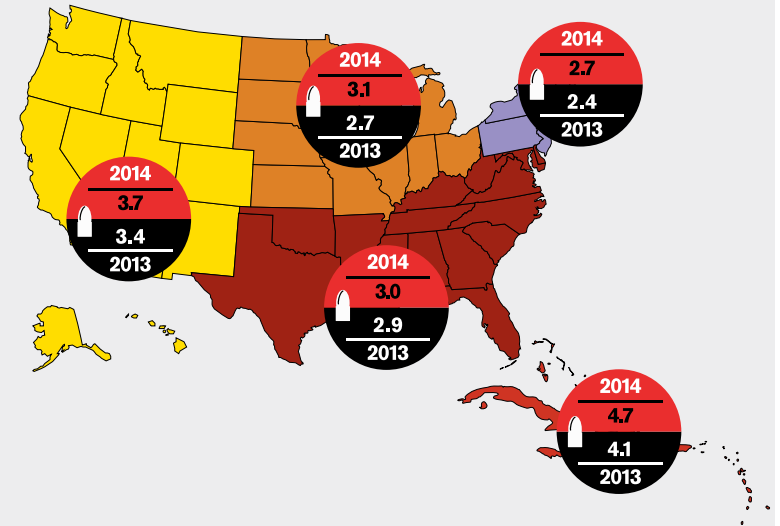
Communities with their Census Regions

These 31 cities were consistently monitored during 1H2013 and 1H2014, and represent an "apples-to-apples" comparison: Brockton, MA; Camden, NJ; Charlotte, NC; Chicago, IL; East Palo Alto, CA; Fall River, MA; Hartford, CT; Hempstead, NY; Kansas City, MO; Miami Gardens, FL; Milwaukee, WI; New Bedford, MA; New Haven, CT; Oakland, CA; Omaha, NE; Paterson, NJ; Plainfield, NJ; Prince Georges County, MD; Quincy, WA; Rochester, NY; Rocky Mount, NC; Saginaw, MI; San Francisco, CA; St. Croix, USVI; St. Louis, MO; St. Thomas, USVI; Springfield, MA; Suffolk County (Brentwood), NY; Suffolk County (Huntington Station), NY; Suffolk County (N Bellport), NY; Wilmington, NC.

The superset of 56 cities we analyzed in 1H2014 are:

City	Region	City	Region	City	Region
Atlantic City, NJ	Northeast	Miami Gardens, FL	South	San Pablo, CA	West
Baton Rouge, LA	South	Milwaukee	Midwest	Somerville, MA	Northeast
Bayamon, PR	Caribbean	Minneapolis, MN	Midwest	South Bend, IN	Midwest
Bell Gardens, CA	West	New Bedford, MA	Northeast	Springfield, MA	Northeast
Belle Glade, FL	South	New Haven, CT	Northeast	St. Croix, USVI	Caribbean
Brockton, MA	Northeast	Oakland, CA	West	St. Louis, MO	Midwest
Camden, NJ	Northeast	Omaha, NE	Midwest	St. Thomas, USVI	Caribbean
Canton, OH	Midwest	Paterson, NJ	Northeast	Stockton, CA	West
Cambridge, MA	Northeast	Peoria, IL	Midwest	Suffolk County (Amtyville), NY	Northeast
Charlotte, NC	South	Plainfield, NJ	Northeast	Suffolk County (Brentwood), NY	Northeast
Chelsea, MA	Northeast	Prince Georges County, MD	Northeast	Suffolk County (Huntington Station), NY	Northeast
Chicago, IL	Midwest	Quincy, WA	West	Suffolk County (N Bellport), NY	Northeast
East Chicago, IN	Midwest	Richmond, CA	West	Suffolk County (Wyandanch), NY	Northeast
East Palo Alto, CA	West	Riviera Beach, FL	South	Wilmington, DE	South
Fall River, MA	Northeast	Rochester, NY	Northeast	Wilmington, NC	South
Hartford, CT	Northeast	Rocky Mount, NC	South	Worcester MA	Northeast
Hempstead, NY	Northeast	Saginaw, MI	Midwest	Yonkers, NY	Northeast
Jackson, MS	South	San Francisco, CA	West	Youngstown, OH	Midwest
Kansas City, MO	Midwest	San Juan, PR	Caribbean		

Appendix

Methodology and Notes

1. The 56 communities that had ShotSpotter Flex coverage as of June 30, 2014 are included in the first half analysis in this report.

2. In order to perform an 'apples-to-apples' comparison of gunfire rates during 1H2013 and 1H2014, only those 31 communities that had ShotSpotter Flex coverage for more than 98 days in both 1H2013 and 1H2014 are used in the comparison.

   Some communities were not covered during the entire six months in 1H2013 or 1H2014. Therefore, when calculating values such as gunfire incidents per square mile, care was taken to account for the different number of days of coverage for different communities. In these few cases, the chosen solution was to calculate the number of incidents by day and impute the number of gunfire incidents for those days for which there was no coverage, taking account known information about incident rates for the community, the day of the year, the day of the week, and the year. This method is like proration, but is more accurate. Imputation of incidents data for a half is done only for communities that have coverage data for more than 98 days in that half.

3. The incident data for Youngstown, OH and for Suffolk County (Amityville), and Suffolk County (Wyandanch), NY were are not used in the 1H2013 vs. 1H2014 comparisons because of changes to the coverage areas which would have made this comparison not 'apples-to-apples'.

4. 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.) are not classified as confirmed gunfire and were excluded from all statistics presented in this report. Gunfire incidents not reviewed by SST-certified review personnel are also excluded.

   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.

5. Square mileage is measured on the basis of contractual coverage area. For each such area, the geographic area is defined as the convex hull surrounding each coverage area. If the convex hulls data 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). In those cases, 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.

6. Gunfire incidents for a half 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 June 30 (i.e., 1 second before midnight on July 1).

   Incidents during the New Years and 4th of July holiday periods are not counted in the statistics unless explicitly noted because because gunfire during those holiday periods is highly inconsistent with the normal pattern. The holiday periods are from January 1, 00:00:00 to January 1, 06:00:00 and from June 30, 12:00:00 to June 30, 23:59:59.

7. 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.

8. Individual hours of the week and days of the week were calculated on a local time basis.

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