Crime and Murder in 2018: A Preliminary Analysis

by Ames C. Grawert, Adureh Onyekwere, and Cameron Kimble

This report analyzes available crime data from police departments in the 30 largest U.S. cities.[*] It finds that across the cities where data is available, the overall murder and crime rates are projected to decline in 2018, continuing similar decreases from the previous year. This report is based on preliminary data and is intended to provide an early snapshot of crime in 2018 in the 30 largest cities. This data will be updated in later reports.

Declines in homicide rates appear especially pronounced in cities that saw the most significant spikes during 2015 and 2016. These findings directly undercut claims that American cities are experiencing a crime wave. Instead, they suggest that increases in the murder rate in 2015 and 2016 were temporary, rather than signaling a reversal in the long-term downward trend.

This report's main findings are explained below and detailed in Figure 1, and Tables 1 and 2:

- *Murder:* The 2018 murder rate in these cities is projected to be 7.6 percent lower than last year. This estimate is based on data from 29 of the nation's 30 largest cities. This murder rate is expected to be approximately equal to 2015's rate, near the bottom of the historic post-1990 decline.[1] Especially sharp de-
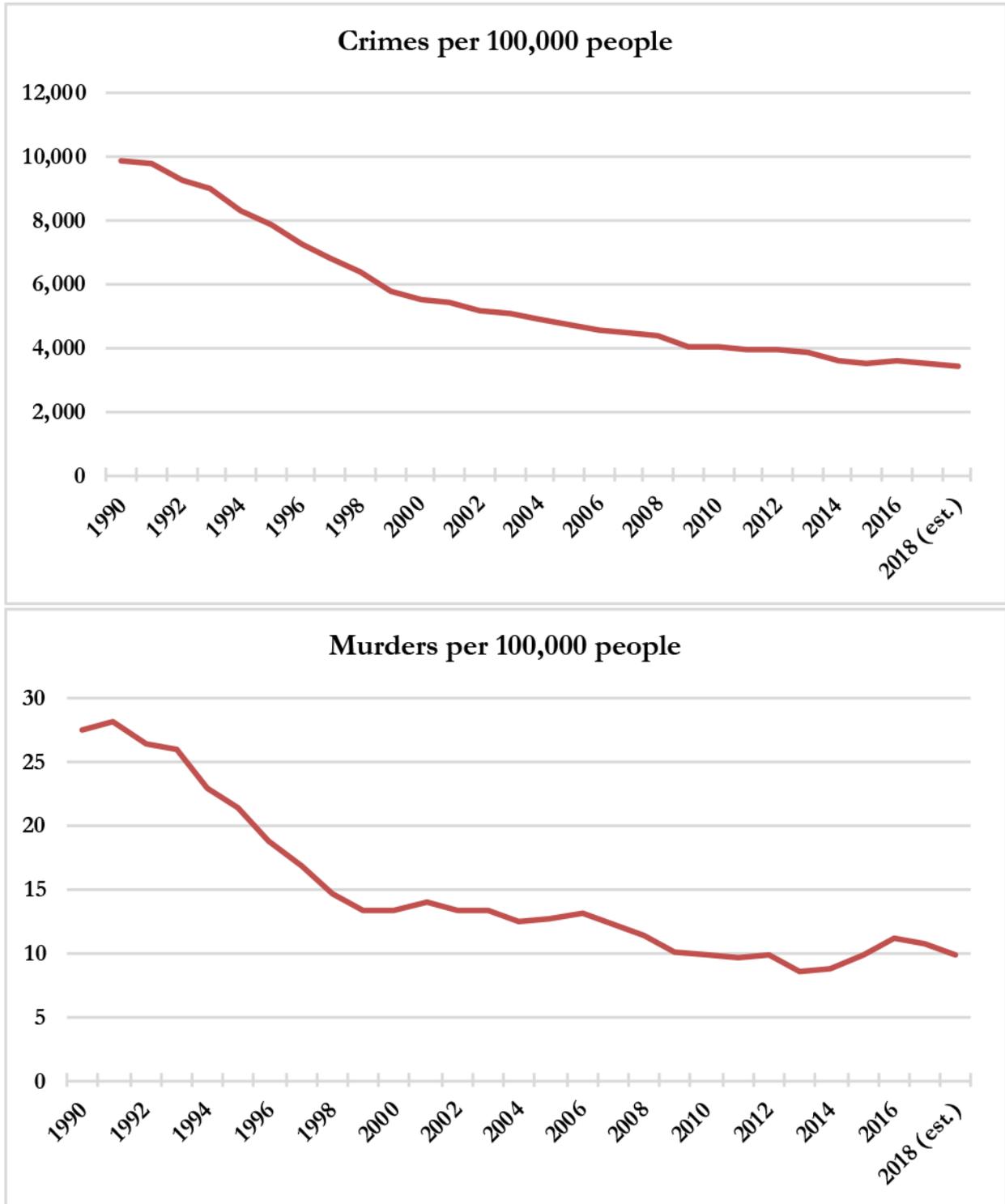
clines appear in San Francisco (-35.0 percent), Chicago (-23.2 percent), and Baltimore (-20.9 percent). These estimates are based on preliminary data, but if they hold, the number of murders in Chicago could fall by year's end to the lowest since 2015. In Baltimore, homicides could drop to the lowest since 2014. While the city's murder rate remains high, this would mark a significant reversal of the past two years' increases.

- While the overall murder rate is estimated to decline this year in these cities, a few cities are projected to experience increases. For example, Washington, D.C.'s murder rate is expected to rise 34.9 percent. Several cities with relatively low murder rates are also seeing increases, such as Austin (rising by roughly 30 percent). Since the city has relatively few murders, any increase may appear large in percentage terms.

- *Overall Crime:* At the time of publication, full crime data — covering all Part I index crimes tracked by the FBI — were only available from 19 of the 30 largest cities. (Past Brennan Center reports included, on average, 21 cities.) In these cities, the overall crime rate for 2018 is projected to decrease by 2.9 percent, essentially holding stable. If this estimate holds, this group of cities will experience the lowest crime rate this year since at least 1990. These findings will be updated with new data when available.

This report does not present violent crime data because the authors could not collect sufficient data by the time of publication.

While the estimates in this report are based on early data, previous Brennan Center reports have correctly estimated the direction and magnitude of changes in major-city crime rates.[2] The Brennan Center's final report analyzing crime data in 2017 is available here.

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[*] This report collected data on six Part I index crimes tracked by the FBI in the Uniform Crime Reports: murder, robbery, and aggravated assault (collectively, "violent crime"), and burglary, larceny, and motor vehicle theft (collectively, "property crime"). "Overall crime" includes all six offenses.

Year-end 2018 estimates are based on year-to-date crime data projected over the full year to simulate past years' month-to-month variation for each city. As noted in Tables 1 and 2, the authors were unable to secure data from some cities. As the FBI's Uniform Crime Report for 2017 has not been released yet, our 2018 estimates are compared to the Brennan Center's final 2017 estimates. An updated version of this report will be released after the release of the Uniform Crime Report for 2017. Notably, the Center's 2015, 2016, and 2017 preliminary estimates accurately predicted whether crime and murder were increasing or decreasing based on the same methodology.

FIGURE 1: CRIME IN MAJOR AMERICAN CITIES (1990-2018 EST.)

Source: Brennan Center analysis.[3] The crime graph represents the trendline for the 19 cities with available data, and the murder graph for 29 cities.

I. DATA TABLES

TABLE 1: CRIME IN THE 30 LARGEST CITIES (2017-2018 EST.)

City	1990 Crime Rate (per 100,000)	2017 Crime Rate Est. (per 100,000)	2018 Crime Rate Est. (per 100,000)	Percent Change in Crime Rate Est.* (2017-2018)
New York[4]	9,656.4	1,922.9	1,899.2	-1.2%
Los Angeles[5]	9,167.4	3,153.7	3,033.8	-3.8%
Chicago[6]	11,062.3	4,308.1	4,162.3	-3.4%
Houston[7†]	11,255.9	5,011.7	Unavailable	Unavailable
Philadelphia[8]	7,145.5	3,942.6	3,970.0	0.7%
Las Vegas[9]	7,070.7	Unavailable	Unavailable	Unavailable
Phoenix[10]	10,704.4	4,439.0	Unavailable	Unavailable
San Antonio[11]	12,430.8	5,424.5	6,278.2	15.7%
San Diego[12]	9,105.9	2,153.2	1,626.0	-24.5%
Dallas[13‡]	15,386.5	3,869.8	Unavailable	Unavailable
San Jose[14]	4,816.1	2,732.8	2,822.9	3.3%
Austin[15]	11,653.9	3,485.6	3,306.7	-5.1%
Charlotte[16]	12,496.5	4,440.9	Unavailable	Unavailable
Jacksonville[17]	10,352.8	Unavailable	Unavailable	Unavailable
San Francisco[18]	9,604.3	6,820.4	6,006.2	-11.9%
Indianapolis[19]	6,637.2	Unavailable	Unavailable	Unavailable
Columbus[20]	9,804.9	Unavailable	Unavailable	Unavailable
Fort Worth[21]	14,880.5	3,281.3	2,993.0	-8.8%
El Paso[22]	11,189.7	Unavailable	Unavailable	Unavailable
Seattle[23]	12,507.7	5,925.9	6,067.8	2.4%
Denver[24]	7,676.1	4,210.8	3,914.3	-7.0%
Louisville[25]	Unavailable	4,711.0	4,361.3	-7.4%
Detroit[26]	12,030.3	6,354.7	5,989.1	-5.8%
Washington, D.C.[27]	10,724.3	4,938.0	4,778.2	-3.2%
Boston[28]	11,756.9	2,684.8	2,559.4	-4.7%
Nashville[29]	7,768.2	4,883.1	4,906.6	0.5%
Memphis[30]	9,736.3	Unavailable	Unavailable	Unavailable
Oklahoma City[31]	10,516.3	4,397.4	Unavailable	Unavailable
Baltimore[32]	10,502.8	6,660.8	5,492.9	-17.5%
Portland[33]	11,003.6	6,385.3	6,304.6	-1.3%
TOTAL				**-2.9%**

Source: Police department and city reports. See endnotes for specific sources. Data from 1990 are from the UCR Data Tool.[34] The authors were unable to obtain complete data from cities marked "Unavailable." Cities are ordered by estimated 2017 population size.[35]

*   Rates of change in Tables 1 and 2 are calculated based on raw, unrounded estimates, whereas estimates for rates are presented as rounded in the Tables. For example, in Table 2, San Jose's murder rate appears the same in 2017 and 2018 but unrounded numbers yield a slight percent change.

†   Houston is currently updating its crime data reporting system and had not finished by the time of publication. Accordingly, crime data could not be obtained for the city, though homicide data were obtained from other sources.

‡   The authors initially collected crime data from the Dallas Police Department, but the site was inaccessible during the final round of fact-checking and the data could not be verified. The authors obtained murder data from other sources.

TABLE 2: MURDER IN THE 30 LARGEST CITIES (2017-2018 EST.)

City	2017 Total Murders	2018 Total Murders	Percent Change in Murder	1990 Murder Rate (per 100,000)	2017 Murder Rate Est. (per 100,000)	2018 Murder Rate Est. (per 100,000)	Percent Change in Murder Rate Est. (2017-18)
New York	292	307	5.1%	30.7	3.4	3.5	4.5%
Los Angeles	282	267	-5.3%	28.2	7.0	6.5	-6.4%
Chicago	671	515	-23.2%	30.5	24.6	18.9	-23.2%
Houston	256	289	13.0%	34.8	10.7	11.8	10.3%
Philadelphia	310	313	0.9%	31.7	19.7	19.8	0.6%
Las Vegas*	199	143	-28.2%	12.8	12.3	8.6	-29.6%
Phoenix	161	195	20.8%	13.0	10.0	11.8	18.7%
San Antonio	125	137	9.8%	22.2	8.2	8.7	7.3%
San Diego	34	26	-25.0%	12.2	2.4	1.7	-26.2%
Dallas	168	184	9.6%	44.4	12.5	13.4	7.7%
San Jose	32	32	0.0%	4.5	3.0	3.0	-1.6%
Austin	27	36	33.3%	9.9	2.7	3.5	29.3%
Charlotte	85	47	-44.7%	23.5	9.3	5.0	-45.9%
Jacksonville	119	Unavail.	Unavail.	27.6	13.4	Unavail.	Unavail.
San Francisco	56	37	-34.1%	14.0	6.3	4.1	-35.0%
Indianapolis	153	194	26.8%	12.0	17.5	22.1	26.1%
Columbus	123	111	-9.8%	14.1	14.0	12.4	-11.5%
Fort Worth	69	57	-17.9%	29.0	7.9	6.3	-20.2%
El Paso	16	17	7.7%	6.6	2.3	2.5	7.2%
Seattle	27	33	23.1%	10.3	3.7	4.5	19.7%
Denver	58	65	12.8%	14.3	8.1	8.9	10.1%
Louisville	107	79	-26.1%	Unavail.	15.5	11.4	-26.5%
Detroit	261	241	-7.6%	56.6	39.6	37.0	-6.5%
Washington, D.C.	116	159	37.2%	77.8	16.7	22.6	34.9%
Boston	57	59	3.0%	24.9	8.3	8.5	1.5%
Nashville	112	81	-27.5%	13.4	16.5	11.7	-28.7%
Memphis	177	166	-6.0%	31.9	27.0	25.3	-6.1%
Oklahoma City	81	49	-40.0%	15.3	12.4	7.3	-41.1%
Baltimore	342	270	-21.2%	41.4	55.4	43.8	-20.9%
Portland	22	24	9.1%	7.5	3.5	3.8	9.1%
TOTAL							**-7.6%**

Source: Police department and city reports. See Table 1 endnotes for specific sources. Data from 1990 are from the UCR Data Tool.[36] Cities are ordered by estimated 2017 population size.

*Las Vegas's 2017 homicide count includes deaths due to the October 1, 2017 mass shooting outside of the Mandalay Bay Resort and Casino. Because this shooting was an isolated, tragic, and unanticipated occurrence, 2018 projections were calculated using 2017's baseline homicides excluding the mass shooting deaths.

II. CONSEQUENCES FOR NATIONAL CRIME TRENDS

Murder trends in major cities can offer some insights into nationwide trends, though they do not mirror them exactly. For example, in 2015 and 2016, Brennan Center final analyses showed murder rates in major cities rising by around 13 percent each year.[37] As shown in Figure 2, similar increases occurred nationally — the murder rate rose by roughly 11 percent and 8 percent in those years, respectively.

In 2017 and 2018, Brennan Center estimates show the murder rate in major cities with available data declining slightly in 2017 and declining even more in 2018.[38] The 2018 estimates presented here represent a sizeable share of the population: The 29 cities included in the major-city murder rate are home to more than 40 million people, or more than 12 percent of the population.[39] While it is too early to say for sure, declines in major cities could signal a reversal of the previous two years' increases in the national homicide rate.

If final FBI data show that the murder rate declined in 2017 — and if 2018 estimates are borne out — it is likely that the increases in homicides observed in 2015 and 2016 were momentary upticks amidst the broader downward trend, similar to the shallower increases observed in the early 2000s. While the causes of the previous years' increases require further study, this reversal would definitively reject any claims of the country being in a "crime wave."

FIGURE 2: NATIONAL MURDER RATE (1990-2017 EST.)
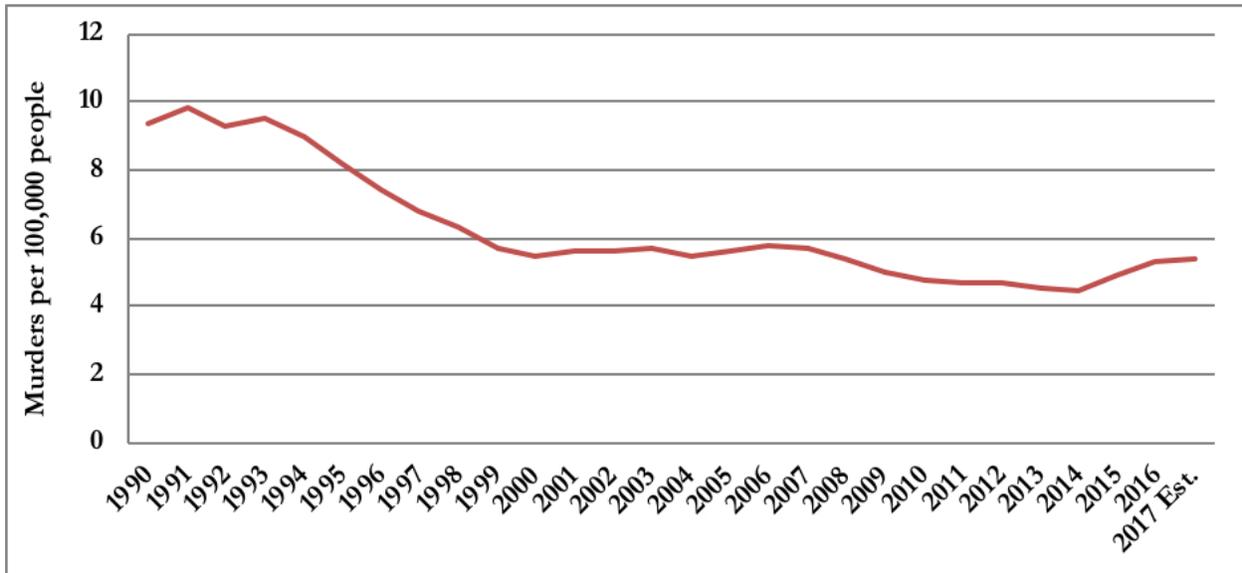
Source: Federal Bureau of Investigation, Uniform Crime Reports.[43]

METHODOLOGY

Sources for Crime Data

Annual data on crime through 2016 are from the Federal Bureau of Investigation's Uniform Crime Reports (UCR).[40] Final UCR data for 2017 and 2018 have not yet been released. For both years, the authors collected crime data directly from police departments in the 30 largest American cities and used that data to compile year-end estimates as described below.

Some cities did not respond to the authors' data requests in time for publication. Complete data on crime was obtained for 19 cities, and murder data from 29 cities. One city is missing entirely. As the overall crime finding in this report is based on 19 out of 30 cities, it is slightly less predictive of the 30-city overall crime rate than past reports (which on average included 21 cities). This finding still offers insight into this year's overall crime rate for the 30 largest cities. As in past years, the updated and final 2018 Brennan Center reports will include data from more cities, resulting in more predictive estimates. For example, Crime in 2017: A Preliminary Analysis included overall crime data from 20 cities and Crime in 2017: Final

Analysis included overall crime data for 23 cities.[41] Offense data was categorized according to UCR definitions. Violent crime includes: murder, robbery, and aggravated assault. Property crime includes: burglary, larceny-theft, and motor vehicle theft. Murder included only murder. Overall crime includes all of the above. Rape was excluded from this analysis because its UCR definition has changed over time, creating inaccuracies when data over time is compared. While most city crime reports use UCR definitions of offenses, some variation between cities may exist based on state or local laws.

Notably, crime rates and murder rates often move in different directions in the same city. This is because the "crime rate" is the sum of 6 different offenses compared to population. Since property crimes are much more common than murders, a surge up or down in property crime can make the crime rate move in a different direction than the murder rate.

2018 Projections and 2017 Comparisons

To estimate year-end crime data for 2018, the authors started with raw data from cities on crimes that have occurred so far this year. Where cities offered incident-level data, this raw material was interpreted so as to ensure consistencies between years and with each city's previous UCR reports. Next, the authors assumed that the ratio of crimes committed year-to-date last year and crimes committed by year-end last year would be the same for

the current year and used the number of crimes committed year-to-date this year to solve for a year-end estimate. For example, if a city had 100 murders through July 2017 and 200 by the end of 2017, then if the same city had 150 murders by July 2018, the authors would project a year-end total of 300 murders this year. While this method is empirically accepted as a method to calculate rough estimates, it is based on the assumption that month-to-month variation does not differ significantly year-to-year and cannot account for unique events.

Brennan Center projections in the second and third annual report of each year are based on comparisons to UCR data from the immediately preceding year. That was not possible here, since the FBI had not yet released its final 2017 analysis by the time of publication. To minimize assumptions and ensure the most accurate possible comparison, the authors instead used raw data reported by cities for both 2017 year-end numbers and 2018 projections. Toward that end, 2017 crime data in Tables 1 and 2 of this report are reproduced from Crime in 2017: Final Analysis. Detailed information on that report's methodology is available on page 4 of that report.[42]

Each year, the authors attempt to collect crime data from the 30 largest cities. Due to changes in data availability, the precise group of cities presented changes from report to report. Each report in this series, however, presents a sample of the 30 largest cities. Additionally, to eliminate cohort bias, inter-year comparisons are calculated using only cities where data is available for both years. For example, if San Francisco reported murder data for 2017 but not 2018, and Houston reported murder data for 2018 but not 2017, both cities would be excluded when reporting the overall, major city murder rate. These year-to-year comparisons of samples are able to estimate whether crime is going up or down in the 30 largest cities.

For rate calculations, the authors projected city population assuming the average rate of population growth for the past three years remained constant through 2018.

Endnotes

1 For the 29 cities where data were available for this report, the total murder rate in 2015 was 9.9 killings per 100,000 people. The estimated murder rate for 2018 is 9.8. For information on the decline in crime and murder rates since 1990, see Matthew Friedman, Ames Grawert, and James Cullen, *Crime Trends: 1990-2016*, Brennan Center for Justice, 2017, https://www.brennancenter.org/publication/crime-trends1990-2016.

2 Ames Grawert, James Cullen, Inimai M. Chettiar, "Five Things to Know About the Brennan Center's Analyses of Crime Data," Brennan Center for Justice, Oct. 9, 2017, https://www.brennancenter.org/blog/five-things-know-about-brennan-centers-analyses-crime-data.

3 To ensure consistent comparisons through the present day, cities were only included in each graph if data were available for 2017 and 2018. Where the UCR lacks a single year of pre-2017 data for a city — such as Baltimore in 1999, and Portland in 2015 — the city was excluded from that year.

4 "NYPD CompStat 2.0," New York City Police Department, last accessed Sep. 11, 2018, http://www1.nyc.gov/assets/nypd/downloads/pdf/crime_statistics/cs-en-us-city.pdf.

5 "COMPSTAT Citywide Profile, 6/17/18 – 07/14/18," Los Angeles Police Department, last updated July 16, 2018, http://assets.lapdonline.org/assets/pdf/cityprof.pdf.

6 "City of Chicago, Crimes – 2001 to Present (2018)," Chicago Data Portal, last modified Sep. 4, 2018, last accessed Sep. 11, 2018, https://data.cityofchicago.org/view/5cd6-ry5g. For cities where data was collected from a data portal, the authors build in a three-month "lag time" to ensure the portals were fully updated. Therefore, for this city, the authors compiled their estimates by comparing June 2017 year-to-date figures to June 2018 year-to-date figures.

7 The authors were not able to obtain complete, reliable data from this city. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

8 "Major Crimes as Reported to P.P.D. — Citywide — Week 36," Philadelphia Police Department, last updated Sep. 9, 2018, last accessed Sep. 12, 2018, https://drive.google.com/drive/folders/1vb9uu5K6priz-oBhfVQN-hi_M8PJEOmQP.

9 Email from Public Information Office, Las Vegas Metropolitan Police Department, to author (Aug. 22, 2018, 13:42 EST). Lacking 2017 year-end data, the authors cannot estimate 2018's year-end crime rate.

10 The authors were not able to obtain complete, reliable data from this city. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

11 "Uniform Crime Reports," San Antonio Police Department, last updated Sep. 12, 2018, last accessed Sep. 12, 2018, https://www.sanantonio.gov/SAPD/Uniform-Crime-Reports#30263041-2018.

12 "Crime and Statistics," Automated Regional Justice Information System, last accessed Sep. 11, 2018, http://crimestats.arjis.org/default.aspx (from the drop-down boxes, select "Jan / 2017" for "Begin Date," "Aug / 2017" for "End Date," and "San Diego" for "Agency"; then repeat for 2018).

13 The authors were not able to obtain complete, reliable data from this city. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

14 "UCR — Part One Crimes Reported," San Jose Police Department, last updated July 16, 2018, last accessed Sep. 12, 2018, http://www.sjpd.org/crimestats/updates/part_one_crimes_reported_ytd.pdf?cacheID=20161205.

15 "Chief's Monthly Report, Citywide" Austin Police Department, last accessed Sep. 12, 2018, http://www.austintexas.gov/sites/default/files/files/APD_ChiefMonthlyReport_july_2018.xls.

16 The authors were not able to obtain complete, reliable data from this city. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

17 The authors were not able to obtain complete, reliable

data from this city or other sources.

18 "Compstat: Citywide Profile," San Francisco Police Department, last accessed Sep. 12, 2018, http://sanfrancis-copolice.org/sites/default/files/Documents/PoliceDocu-ments/CompStat/July_CompStat_AllDistrict%281%29.pdf.

19 The authors were not able to obtain complete, reliable data from this city. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

20 The authors were not able to obtain complete, reliable data from this city. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

21 "2nd Quarter Crime Report; April-June 2018," Fort Worth Police Department, last accessed Sep. 12, 2018, https://online.flippingbook.com/view/1012029/8/.

22 The authors are in the process of obtaining complete, reliable data for this city but had not finished by the time of publication. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

23 "SeaStat," Seattle Police Department, last updated July 17, 2018, last accessed Sep. 11, 2018, https://www.seattle.gov/Documents/Departments/Police/SeaStat/SEASTAT_2018JUL18_FINAL.pdf.

24 "Crime in the City and County of Denver by Month Based on UCR Standards," Denver Police Department, last accessed Sep. 12, 2018, https://www.denvergov.org/content/dam/denvergov/Portals/720/documents/statis-tics/2018/Xcitywide_Reported_Offenses_2018.pdf.

25 "LMPD UCR Report, January-July 2018," Louisville Police Department, last accessed Sep. 12, 2018, http://www.louisville-police.org/ArchiveCenter/ViewFile/Item/85.

26 "DPD: All Crime Incidents, December 6, 2016 — Present," City of Detroit, last accessed Sep. 11, 2018, https://data.detroitmi.gov/Public-Safety/DPD-All-Crime-Inci-dents-December-6-2016-Present/6gdg-y3kf. For cities where data was collected from a data portal, the authors build in a three-month "lag time" to ensure the portals were fully updated. Therefore, for this city, the authors compiled their estimates by comparing June 2017 year-to-date figures to June 2018 year-to-date figures.

27 "2018 Year-to-Date Crime Comparison," Metropoli-tan Police Department, DC.gov, last updated Sep. 12, 2018, last accessed Sep. 12, 2018, https://mpdc.dc.gov/node/197622.

28 "Part One Crime Reported to the Boston Police Depart-ment," Boston Police Department, last updated Aug. 18, 2018, last accessed Sep. 12, 2018, https://static1.square-space.com/static/5086f19ce4b0ad16ff15598d/t/5b-7b29ee03ce646d8c7d17ba/1534798318199/Week-ly+Crime+Overview+8-19-18+3.pdf.

29 "Year-to-Date Analysis," Nashville Metropolitan Police Department, last updated last accessed Sep. 12, 2018, http://compstat.nashville.gov/2018/20180811_Comp-Stat_Report.pdf.

30 The authors were not able to obtain complete, reliable data from this city. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

31 The authors are in the process of obtaining complete, reliable data for this city but had not finished by the time of publication. However, the authors were able to obtain homicide data from other sources. *See* "American Violence," AmericanViolence.org, Marron Institute of Urban Management, New York University, updated September 2018, http://www.americanviolence.org. From the main page, the authors selected a custom time interval, from January 2017 through June 2018, and compared year-to-date figures from January to June 2017 to the same period in 2018.

32 Open Baltimore, "BPD Part 1 Victim Based Crime Data," last updated Sep. 12, 2018, last accessed Sep. 11, 2018, https://data.baltimorecity.gov/Public-Safety/BPD-Part-1-Victim-Based-Crime-Data/wsfq-mvij (from the raw spreadsheet, data was exported and then filtered by date to remove all years other than 2017 and 2018, and then filtered again by crime type to include only Part 1 index crimes). For cities where data was collected from a data portal, the authors build in a three-month "lag time" to ensure the portals were fully updated. Therefore,

for this city, the authors compiled their estimates by comparing June 2017 year-to-date figures to June 2018 year-to-date figures.

33 "Monthly Neighborhood Offense Statistics," Strategic Services Division, Portland Police Bureau, last updated Aug. 27, 2018, last accessed Sep. 11, 2018, https://www. portlandoregon.gov/police/71978.

34 "State and National Crime Estimates by Year(s)," Federal Bureau of Investigation (2018), last accessed Jan. 31, 2018, https://www.ucrdatatool.gov/Search/Crime/State/ StateCrime.cfm. Note that elements of the Louisville greater metropolitan area reported to the UCR as sepa-rate entities before 2004; thus, data on "Louisville" are not available before that date.

35 Population estimates were created using the same methodology as previous reports. For more information, and detailed explanation of how data was compiled and analyzed, please see the methodology.

36 "State and National Crime Estimates by Year(s)," Federal Bureau of Investigation (2018), last accessed Jan. 31, 2018, https://www.ucrdatatool.gov/Search/Crime/State/ StateCrime.cfm. Note that elements of the Louisville greater metropolitan area reported to the UCR as sepa-rate entities before 2004; thus, data on "Louisville" are not available before that date.

37 Ames Grawert and James Cullen, *Crime in 2016: Final Year-End Data*, Brennan Center for Justice, 2017, https://www.brennancenter.org/analysis/crime-2016-final-year-end-data. Ames Grawert and James Cullen, *Crime in 2015: A Final Analysis*, Brennan Center for Justice, 2016, https://www.brennancenter.org/analysis/crime-2015-final-analysis.

38 Ames Grawert, James Cullen, and Vienna Thompkins, *Crime in 2017: Final Analysis*, Brennan Center for Justice, 2018, https://www.brennancenter.org/analysis/crime-2017-final-analysis.

39 "U.S. and World Population Clock," U.S. Census Bu-reau, last visited Sep. 18, 2018, https://www.census.gov/popclock/.

40 Data through 2014 were compiled from "State and National Crime Estimates by Year(s)," Federal Bureau of Investigation (2018), last accessed Jan. 31, 2018, https://www.ucrdatatool.gov/Search/Crime/State/StateCrime. cfm. Data for 2015 was taken from U.S. Dep't of Justice, Federal Bureau of Investigation, *Crime in the United States, 2015* (Washington, D.C., 2016), tbl. 8, http://bit. ly/2druPZQ. Data for 2016 was taken from U.S. Dep't of Justice, Federal Bureau of Investigation, *Crime in the United States, 2016* (Washington, D.C., 2017), tbl. 6, http://bit.ly/2FkUVvi.

41 Ames Grawert and James Cullen, *Crime in 2017: A Preliminary Analysis*, Brennan Center for Justice,

2017, https://www.brennancenter.org/publication/crime-2017-preliminary-analysis; Ames Grawert, James Cullen, and Vienna Thompkins, *Crime in 2017: Final Analysis*, Brennan Center for Justice, 2018, https://www. brennancenter.org/analysis/crime-2017-final-analysis.

42 Ames Grawert, James Cullen, and Vienna Thompkins, *Crime in 2017: Final Analysis*, Brennan Center for Justice, 2018, https://www.brennancenter.org/analysis/crime-2017-final-analysis.

43 Data through 2014 were compiled from "State and National Crime Estimates by Year(s)," Federal Bureau of Investigation (2018), last accessed Jan. 31, 2018, https:// www.ucrdatatool.gov/Search/Crime/State/StateCrime. cfm. Data for 2015 was taken from U.S. Dep't of Justice, Federal Bureau of Investigation, Crime in the United States, 2015 (Washington, D.C., 2016), tbl. 1, https:// bit.ly/2hnpghC. Data for 2016 was taken from U.S. Dep't of Justice, Federal Bureau of Investigation, Crime in the United States, 2016 (Washington, D.C., 2017), tbl. 1, https://bit.ly/2MUVKmX. The murder rate for 2017 was estimated by taking the estimated percentage change in the number of homicides from the Preliminary UCR Report for 2017, applying it to the previous year's UCR total, and calculating a new projected rate for 2017 by assuming that the average rate of population growth between 2010 and 2016 remained constant through 2018. U.S. Dep't of Justice, Federal Bureau of Investi-gation, Crime in the United States, 2017: January-June Preliminary Semiannual Uniform Crime Report (Wash-ington, D.C., 2018), tbl. 1, https://bit.ly/2NbTQhR. This is an extremely rough estimate and is shown here for visualization purposes only.