THE UNIVERSITY OF CHICAGO
CRIME LAB
Urban Labs

# Summer Safety Analysis

Source: Developed by the Crime Lab with Chicago Data Portal datasets

Based on data queried on 2024-04-17

*Prepared by: Javier Lopez & Thomas Ballard*

# Overview of Summer Gun Violence Trends (2019 – 2023)

**Shooting incidents peak in summer months.**
More than a third (38%) of the annual shooting incidents occurred in the summer, with July alone accounting for 12% of the year's incidents.

**Gun violence is extremely concentrated across place and time during the summer months.**
One quarter (25%) of all 1000x1000ft grid cells in Chicago accounted for 93% of shootings during the summer. Over 50% of summer shootings happened between 8PM and 3AM.

**The people most impacted by summer shooting violence in this period were Black individuals, persons between the age 20-29, and males.**

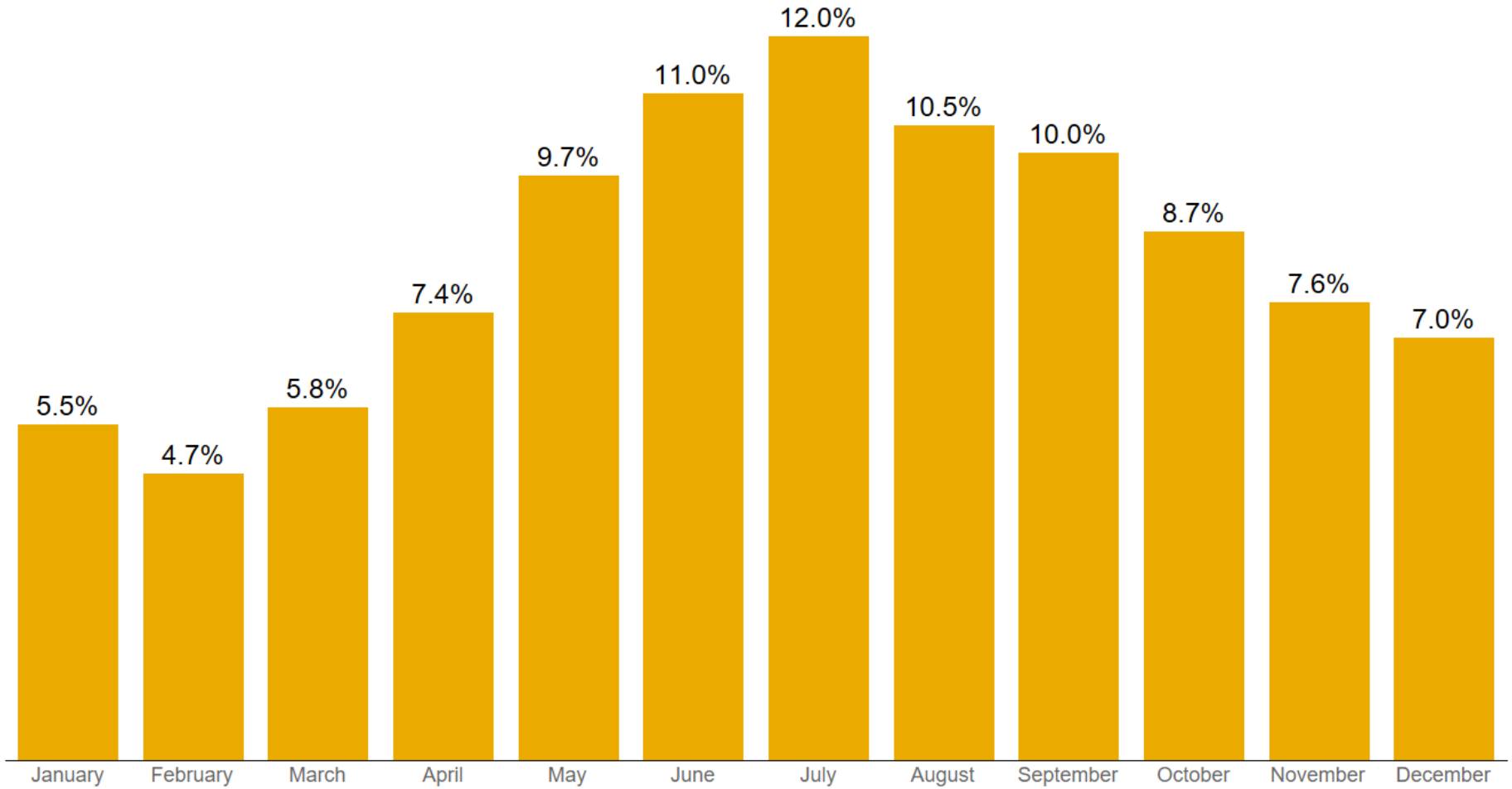
Summer Defined:

The summer period spans between the start of Memorial Day weekend through the end of Labor Day weekend, adjusted by the start/end dates each year. The duration varied between 101 and 108 days from 2019 – 2023.

# Share of annual shootings by month

# Historically, July has experienced the largest share of Chicago's shooting incidents.

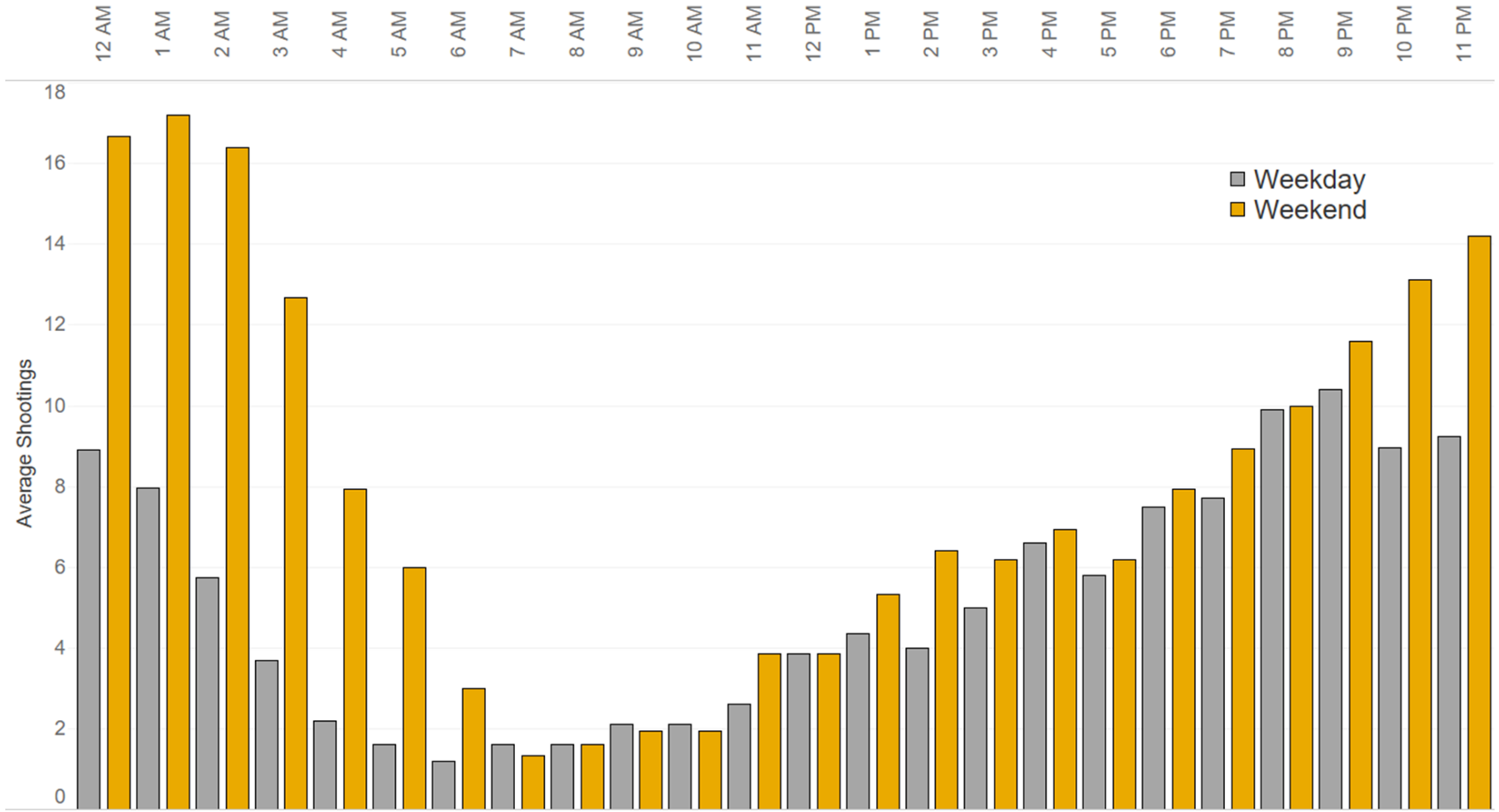
Share of shooting incidents by month, 2019 – 2023




Source: Chicago Data Portal

# Temporal trends of gun violence

# Between 2019 – 2023, more than half of summer shooting incidents happened between 8PM and 3AM, especially on weekends




The average incidents at the hour-level are scaled to the number of days in the group: 4 days for weekday & 3 days for weekend.

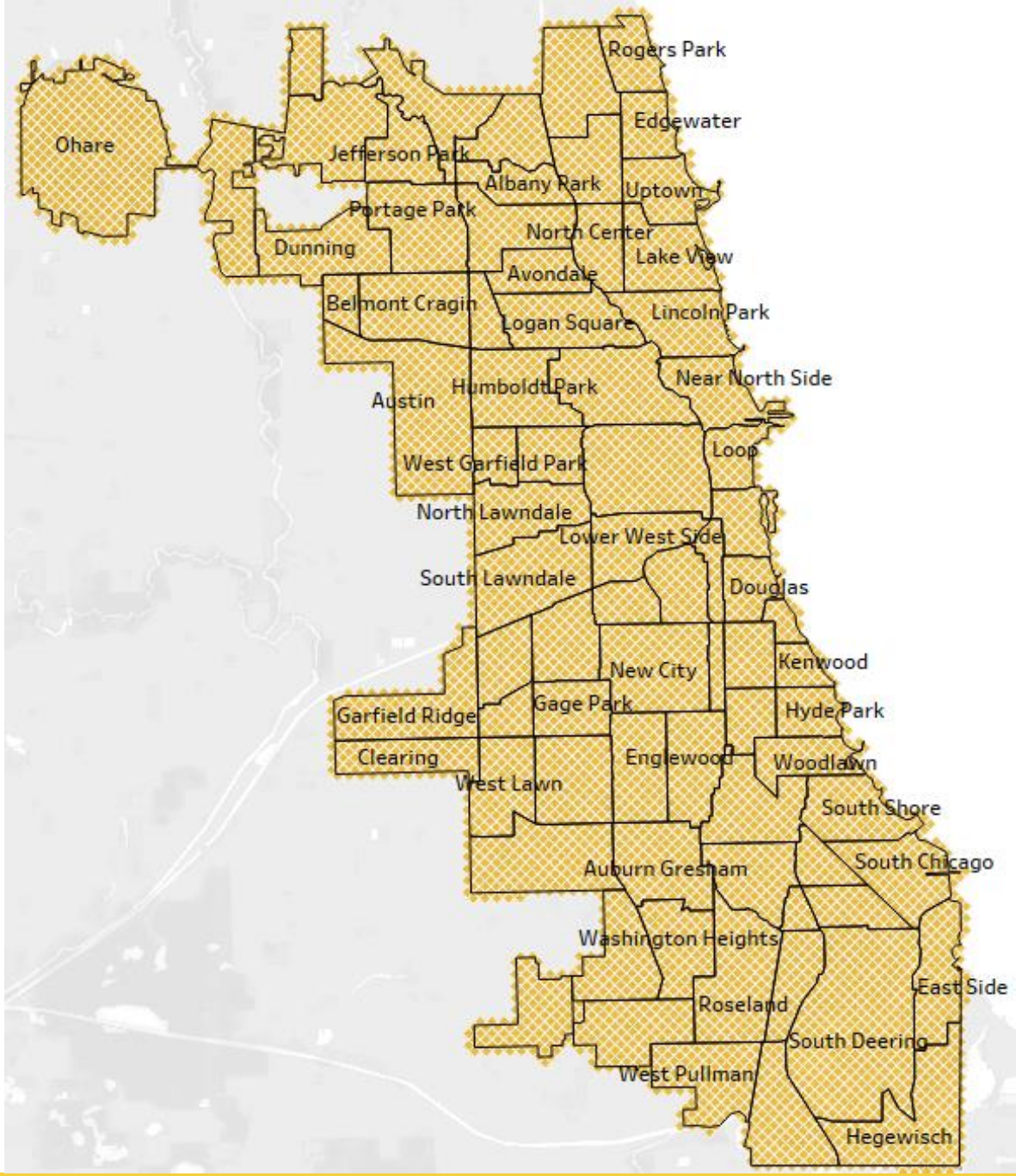
Source: Chicago Data Portal

# Geographic concentration of gun violence

# Grid Cells

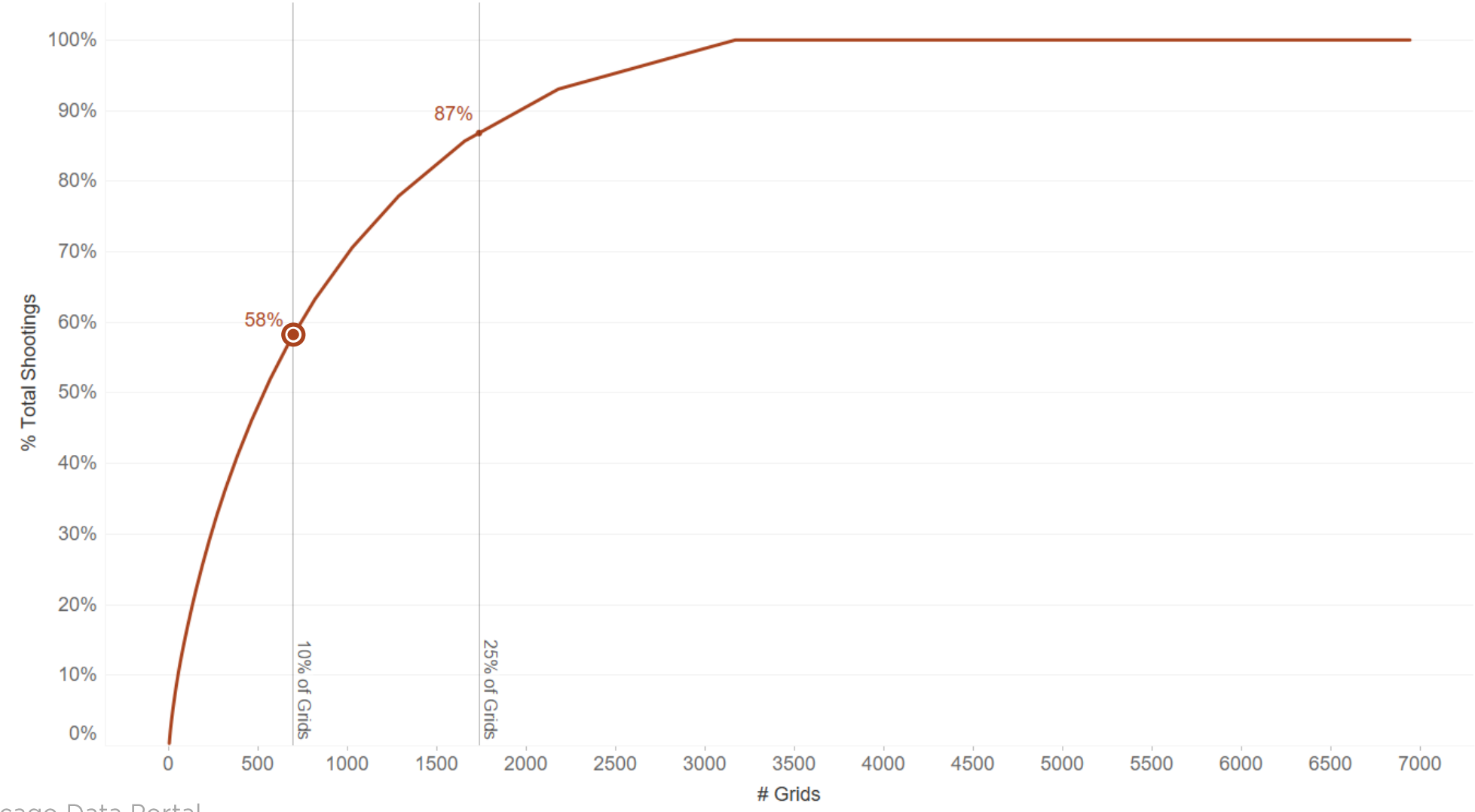
The Crime Lab uses 1000x1000 foot grid cells in the City of Chicago to more precisely identify high violence areas.

There are 6942 grids in Chicago. The cells are angled at 45 degrees to optimize the analysis of high violence areas.



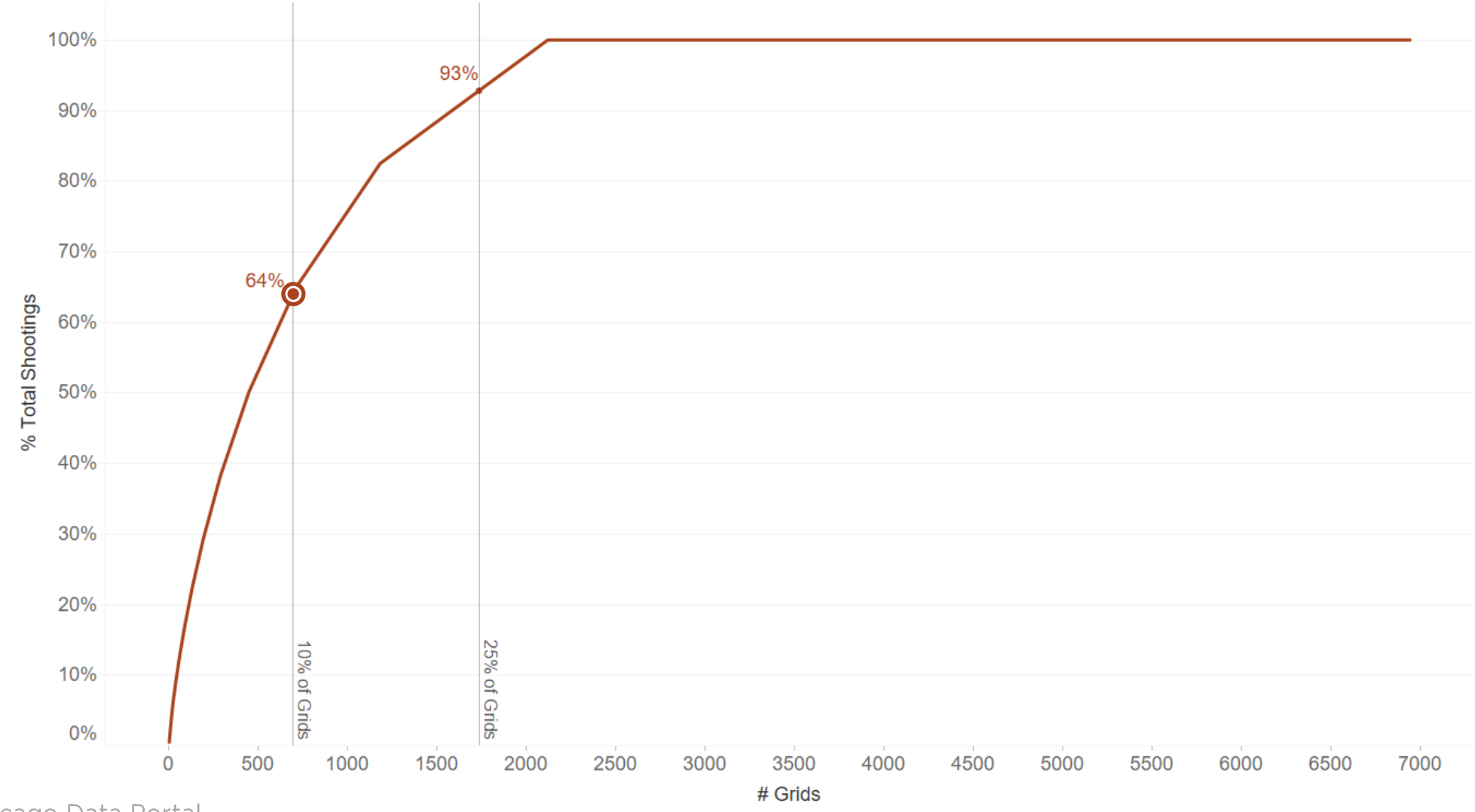
# Shootings by Grids & Community Areas

# 10% of grids accounted for 58% of the annual shooting incidents from 2019 to 2023



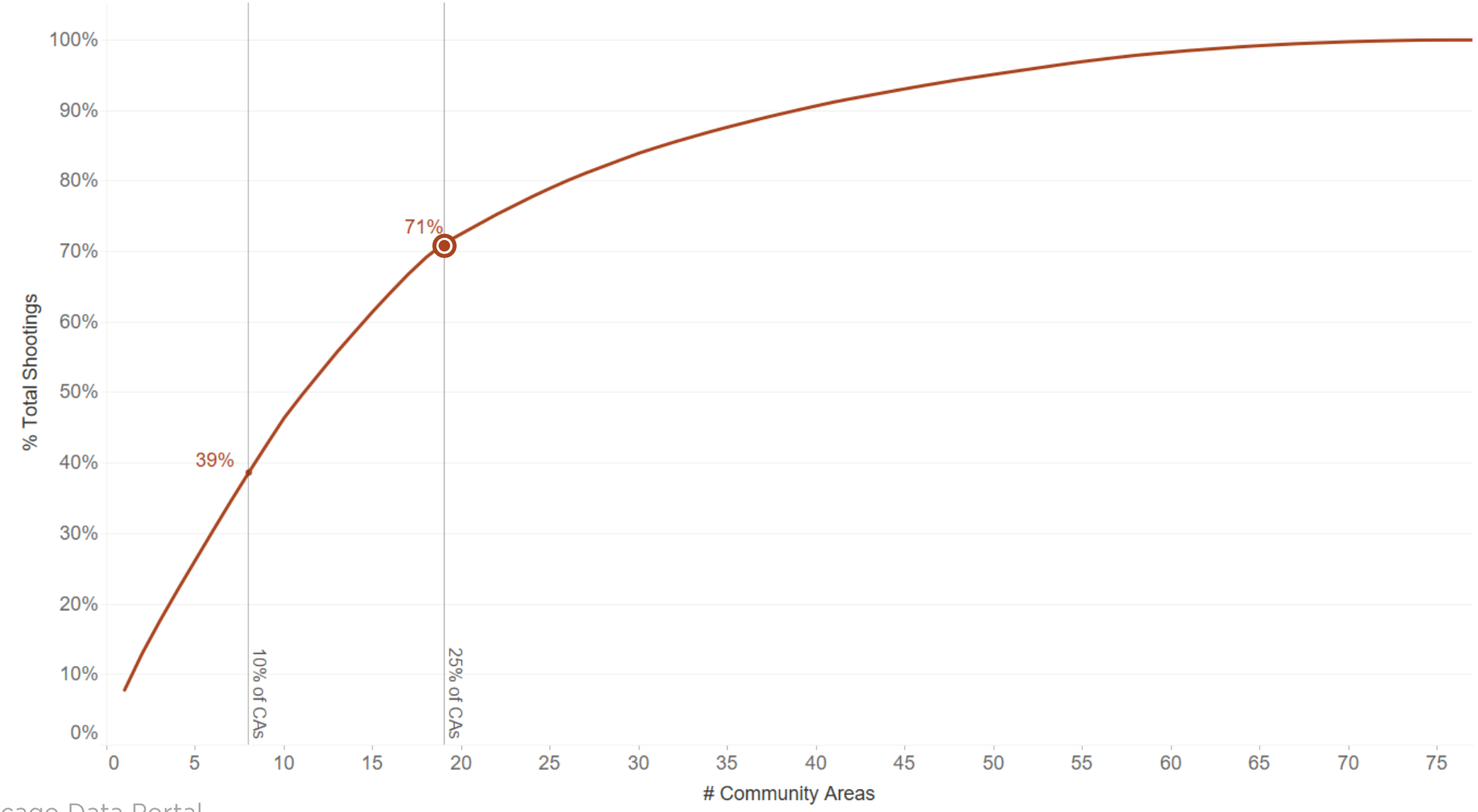

Source: Chicago Data Portal

# 10% of grids accounted for 64% of the annual summer shooting incidents from 2019 to 2023



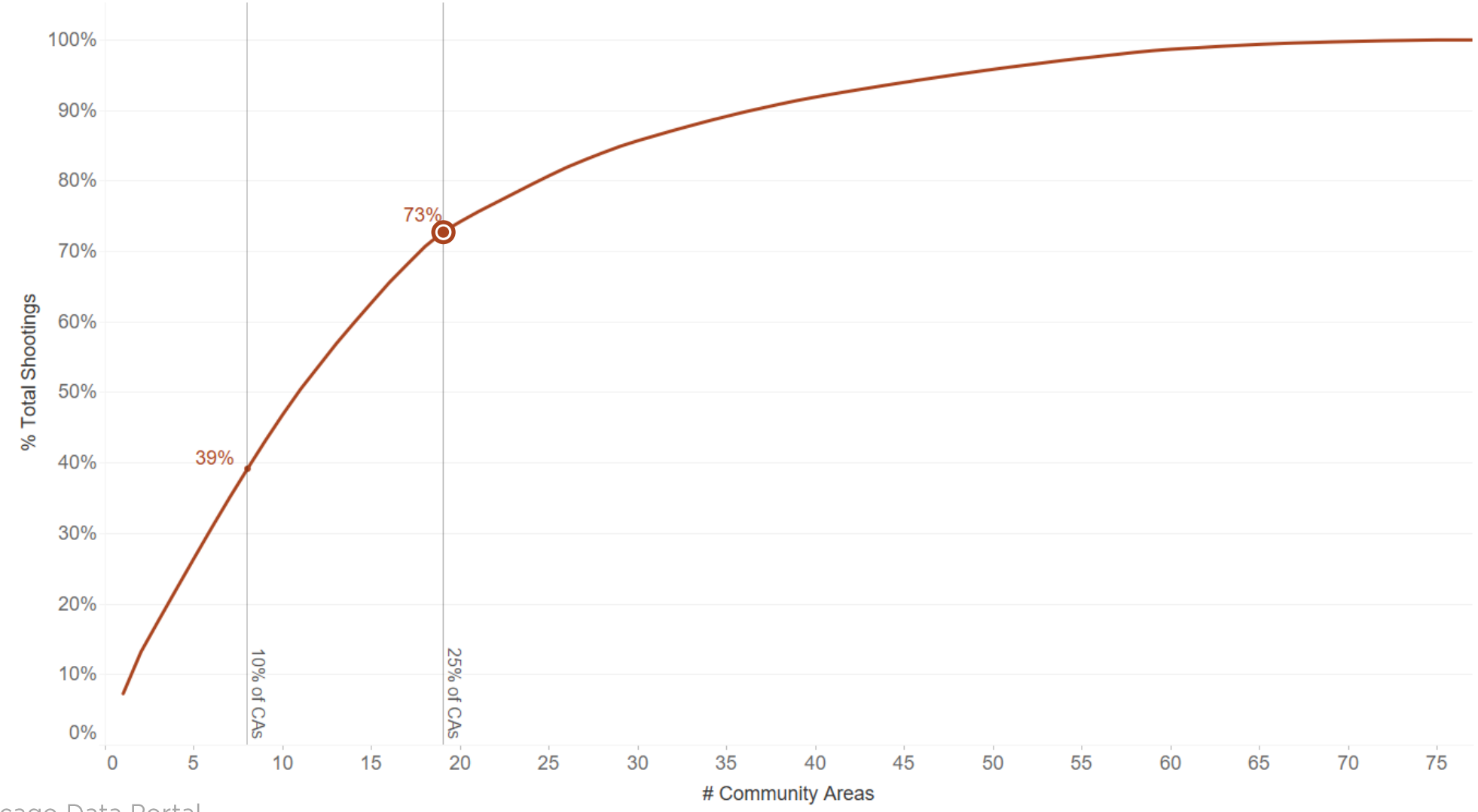

Source: Chicago Data Portal

# 25% of communities accounted for 71% of the annual shooting incidents from 2019 to 2023




Source: Chicago Data Portal

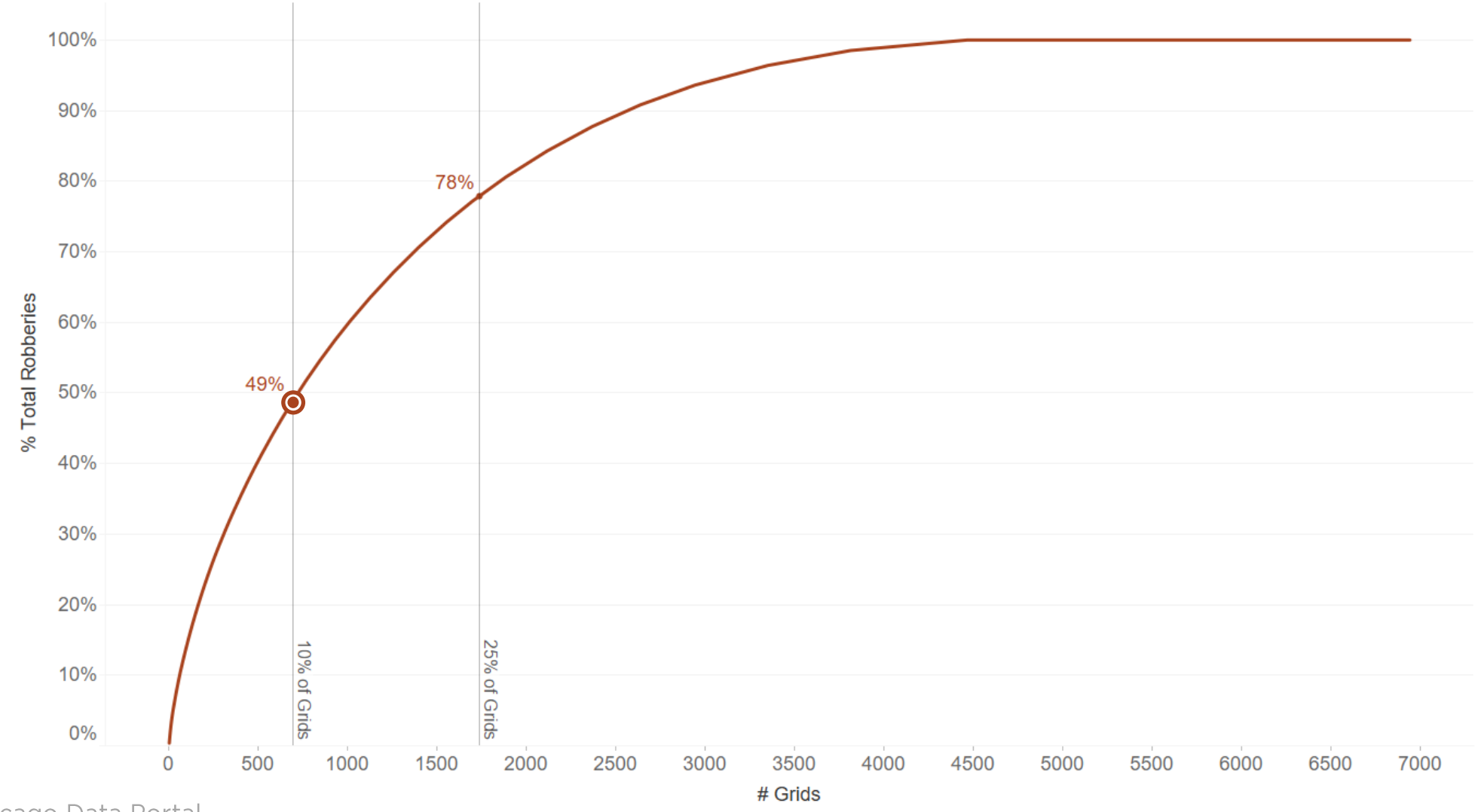
# 25% of communities accounted for 73% of the annual summer shooting incidents from 2019 to 2023




Source: Chicago Data Portal

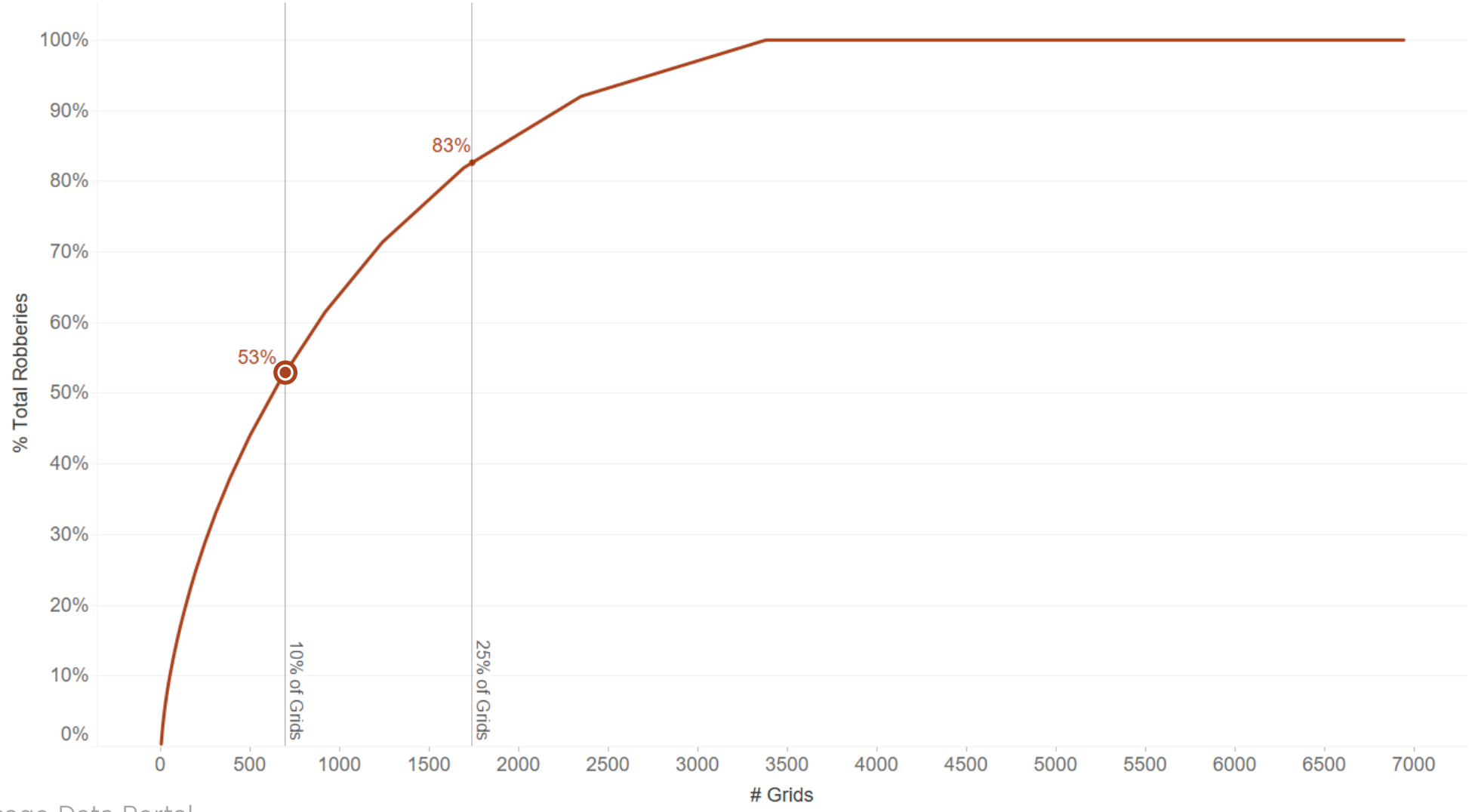
# Robberies by Grids

# 10% of grids accounted for 49% of the annual robbery incidents from 2019 to 2023




Source: Chicago Data Portal

# 10% of grids accounted for 53% of the annual summer robbery incidents from 2019 to 2023



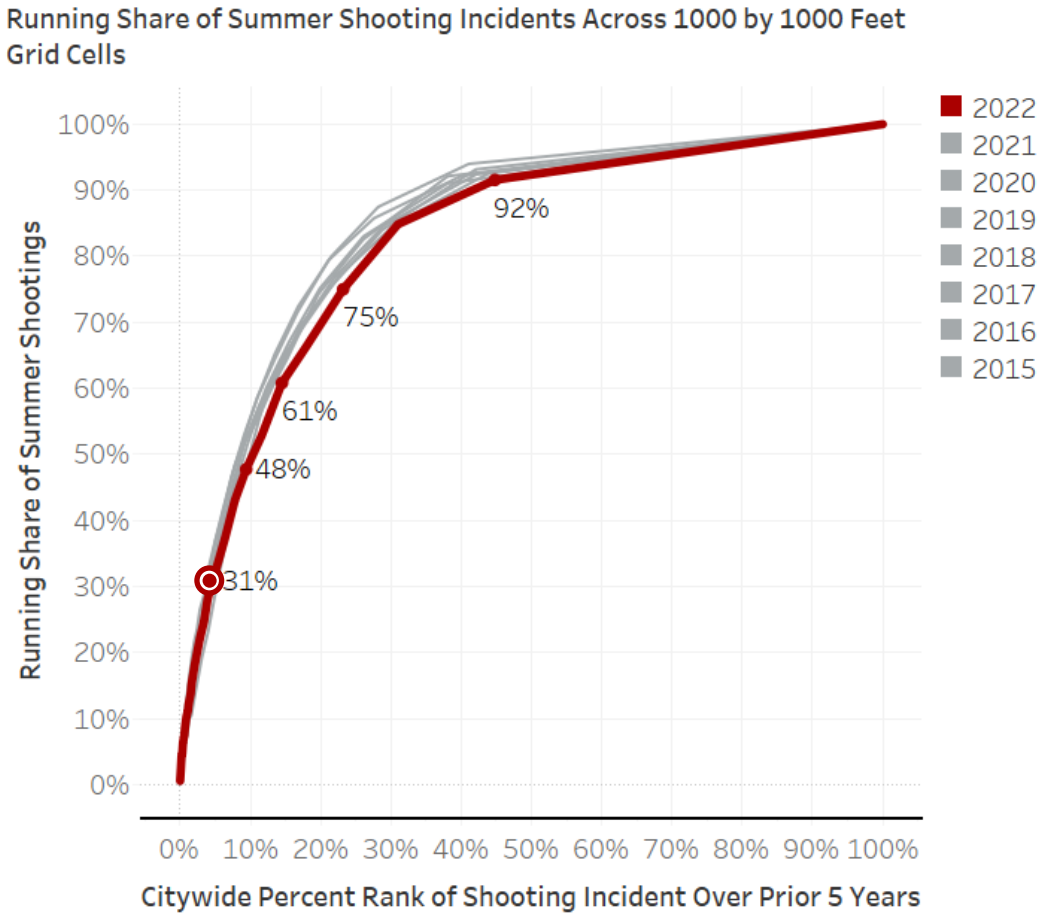

Source: Chicago Data Portal

# Assessment of high violence grids

Using 5 years of historical data, we can anticipate the grids that will likely experience a large share of the summertime shootings & robberies.

# Analyzing historical shooting data at the grid level can be helpful for summer planning

On average, Crime Lab found that around 30% of a year's summer shootings occurred in the top 5% of ranked grid cells from the previous 5-year period. Similarly, 50% of a year's summer shootings occurred in the top 10% of ranked grid cells from the previous 5-year period.

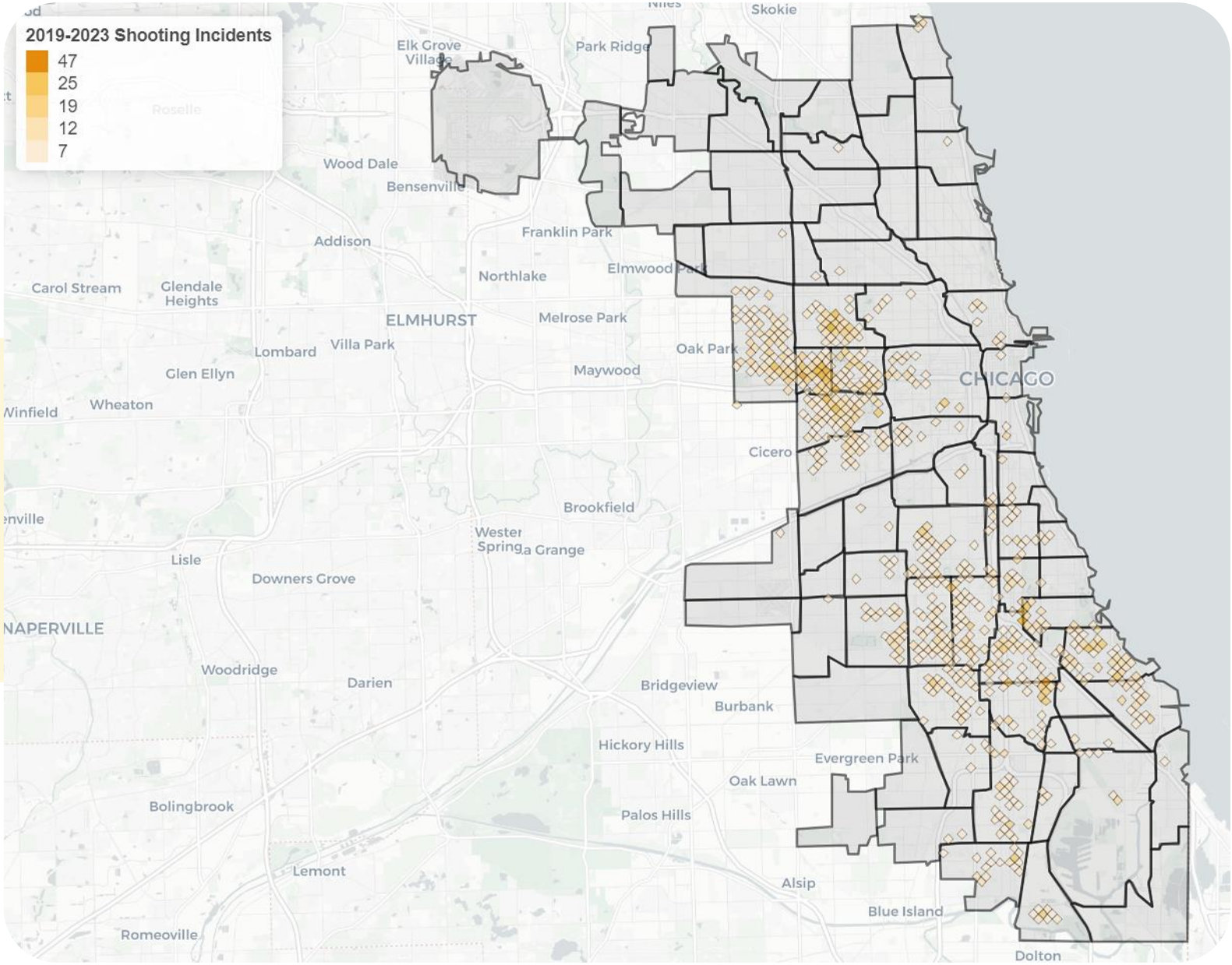



**Note:** The assumption is that 2023's summer shootings observed similar trends.
**Source:** Chicago Data Portal

# 5-year concentration of shootings by grid cells

**Westside** and **southside** communities accounted for the highest share of shootings over the past five years.

Interactive map available upon request.

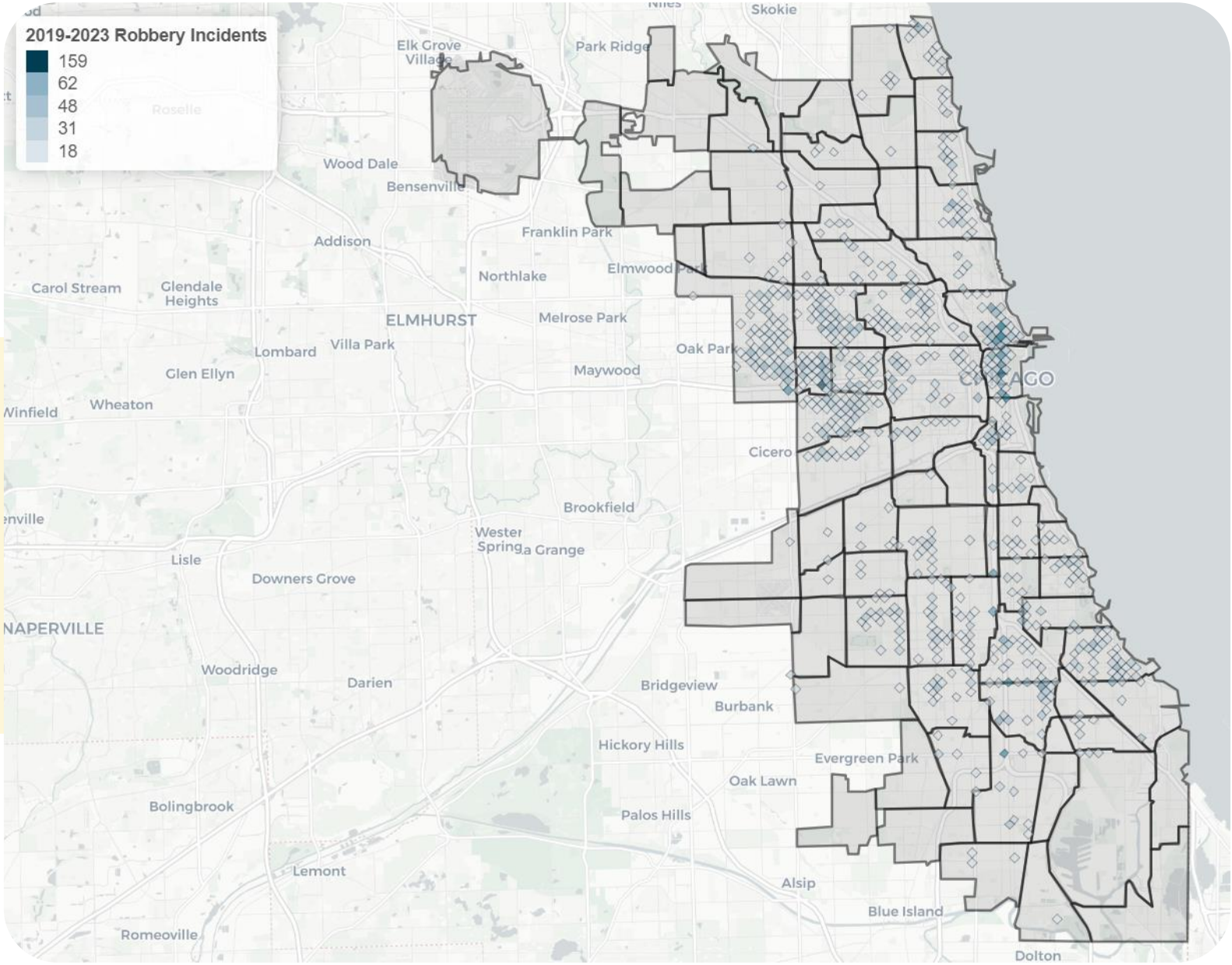



**Note:** The map displays the top 10% ranked grids for shooting incidents, but the excluded 90% may still have observations.
**Source:** Chicago Data Portal

# 5-year concentration of robberies by grid cells

Over the past five years, robberies were concentrated near downtown and on the westside during the summer months.

Interactive map available upon request.




**Note:** The map displays the top 10% ranked grids for robbery incidents, but the excluded 90% may still have observations.
**Source:** Chicago Data Portal

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# Thank You

**Questions?**

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Contact Jens Ludwig, Pritzker Faculty Director jludwig@uchicago.edu

Learn more at crimelab.uchicago.edu

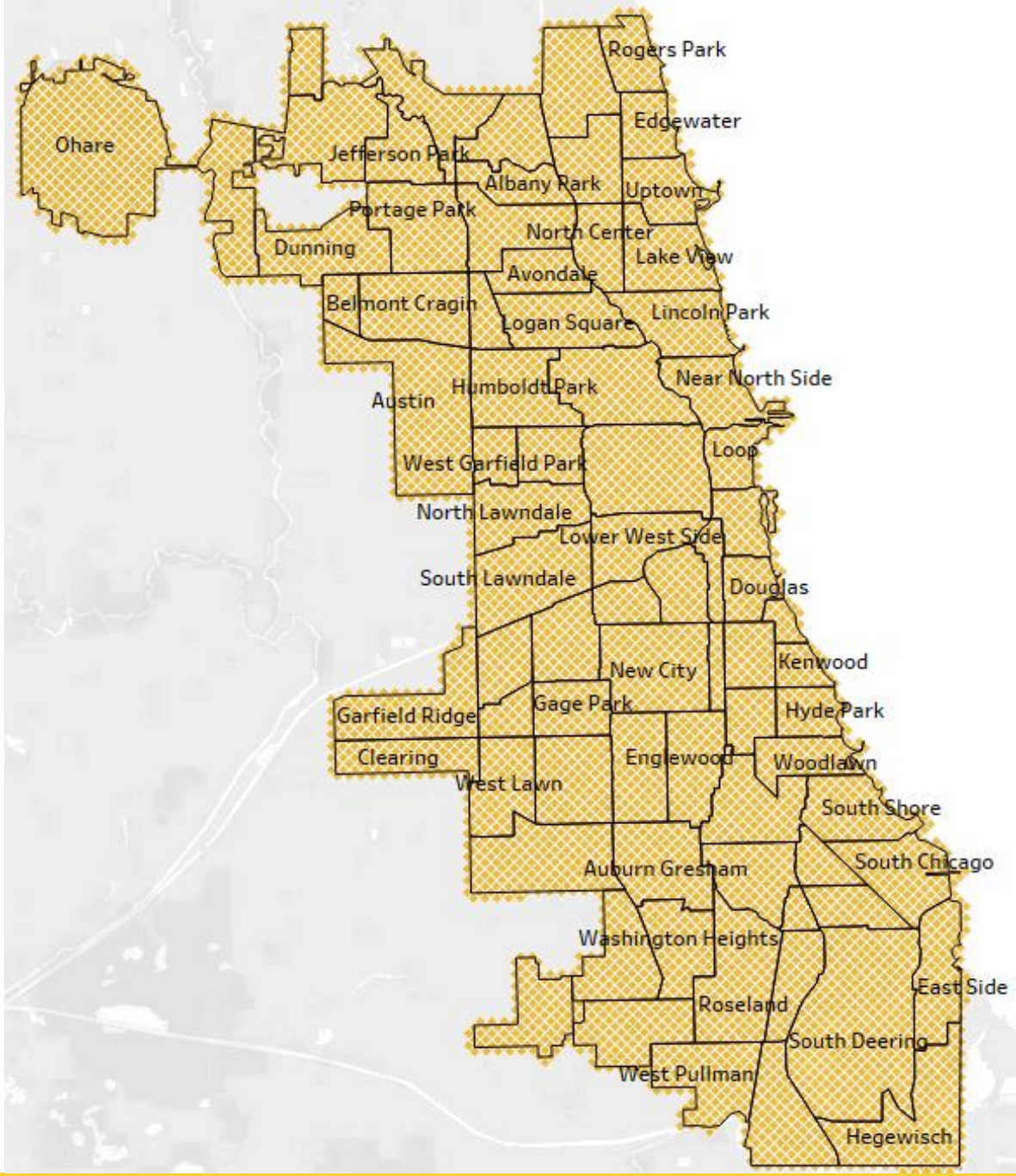
Prepared by Javier Lopez & Thomas Ballard

# Appendix

# Grid Cell Methodology

## To prepare for the 2023 summer, the following steps were taken:

1. Rank the grid cells by shooting incident frequency using the full 5-year period prior to the most recent observed summer.
    - In the 2023 exercise, grids were ranked based on incidents from 2017-2021, using the observed summer of 2022 as the testing period.
2. Compute the share of shooting incidents observed in the summer of 2022 at the grid-level.
3. Rope in the 2017-2021 ranks into the 2022 table, sort from highest to lowest ranking.
4. Document the running share of shooting incidents in the summer of 2022 using the 2017-2021 grid rankings.
5. Report on the running share of 2022 summer shootings represented by each top X% of the 2017-2021 grid cells.

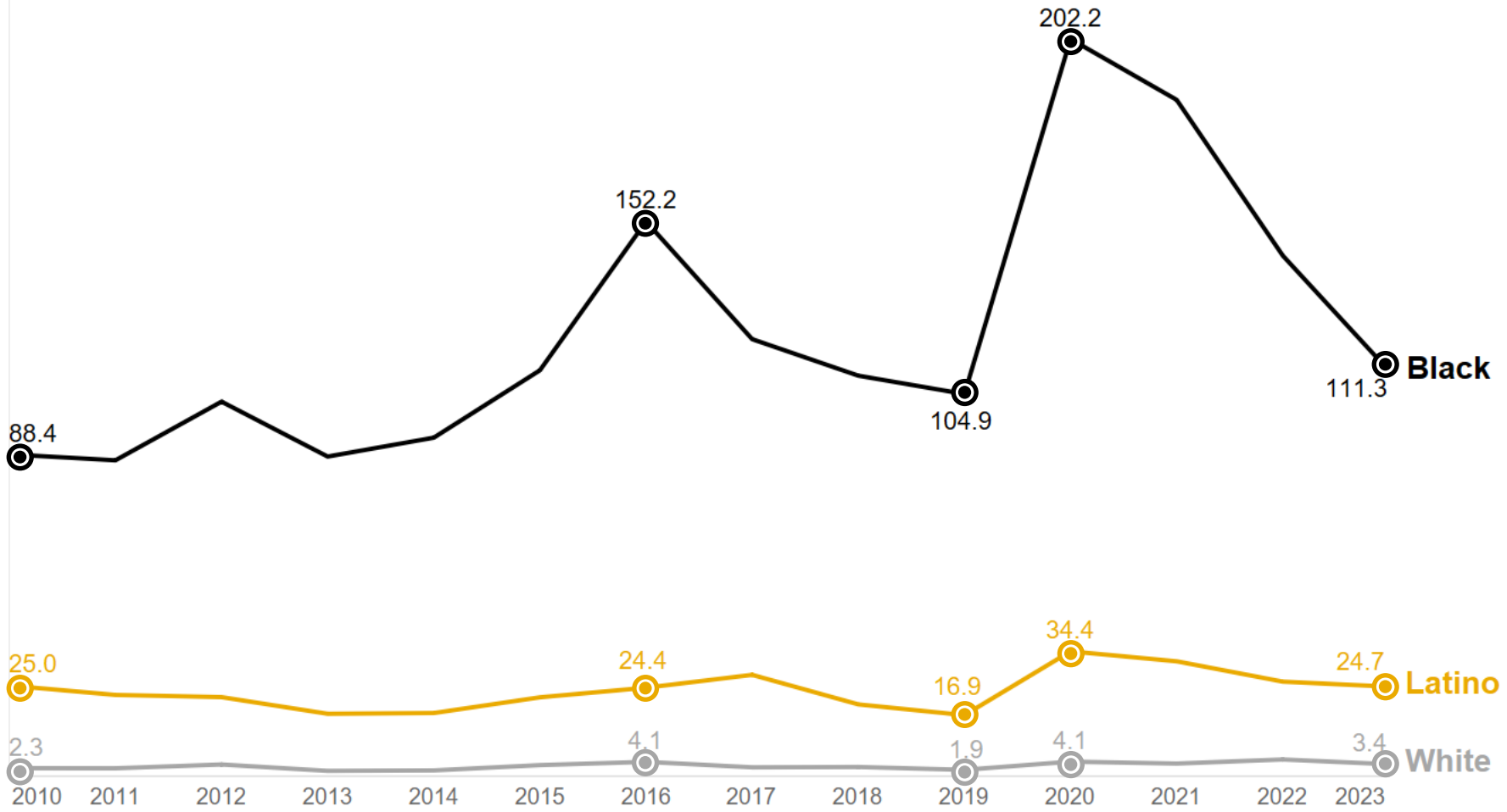


# Demographic trends of shooting victims

The people most impacted by summer shooting violence are Black individuals, persons between the age 20-29, and males.

# Black residents make up a disproportionate share of shooting victims during summer months

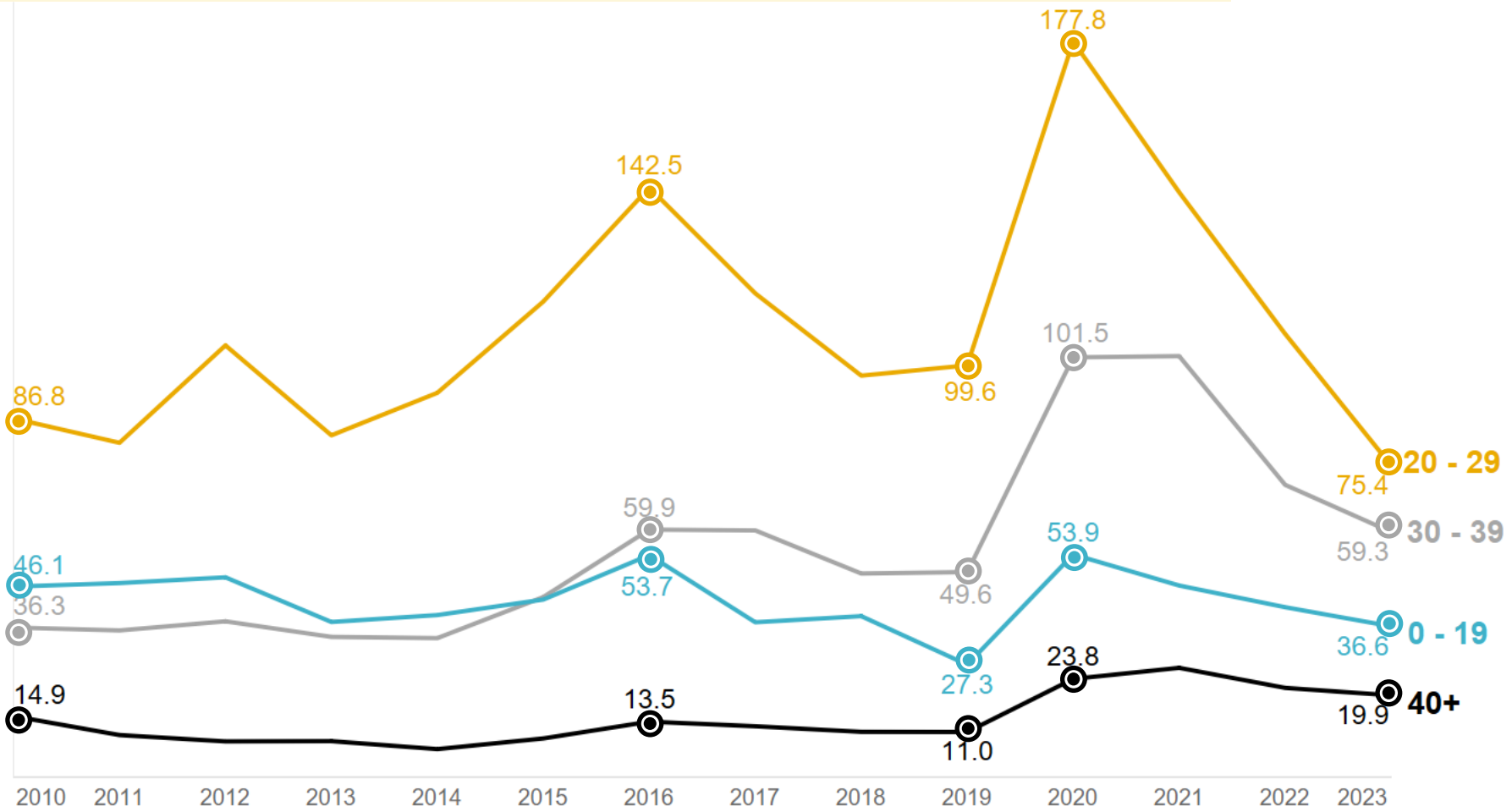
Race-adjusted summer shooting victimizations by race per 100,000 residents




Source: Chicago Data Portal; 1-year ACS

# The 20-29 age group experiences the most shootings during the summer

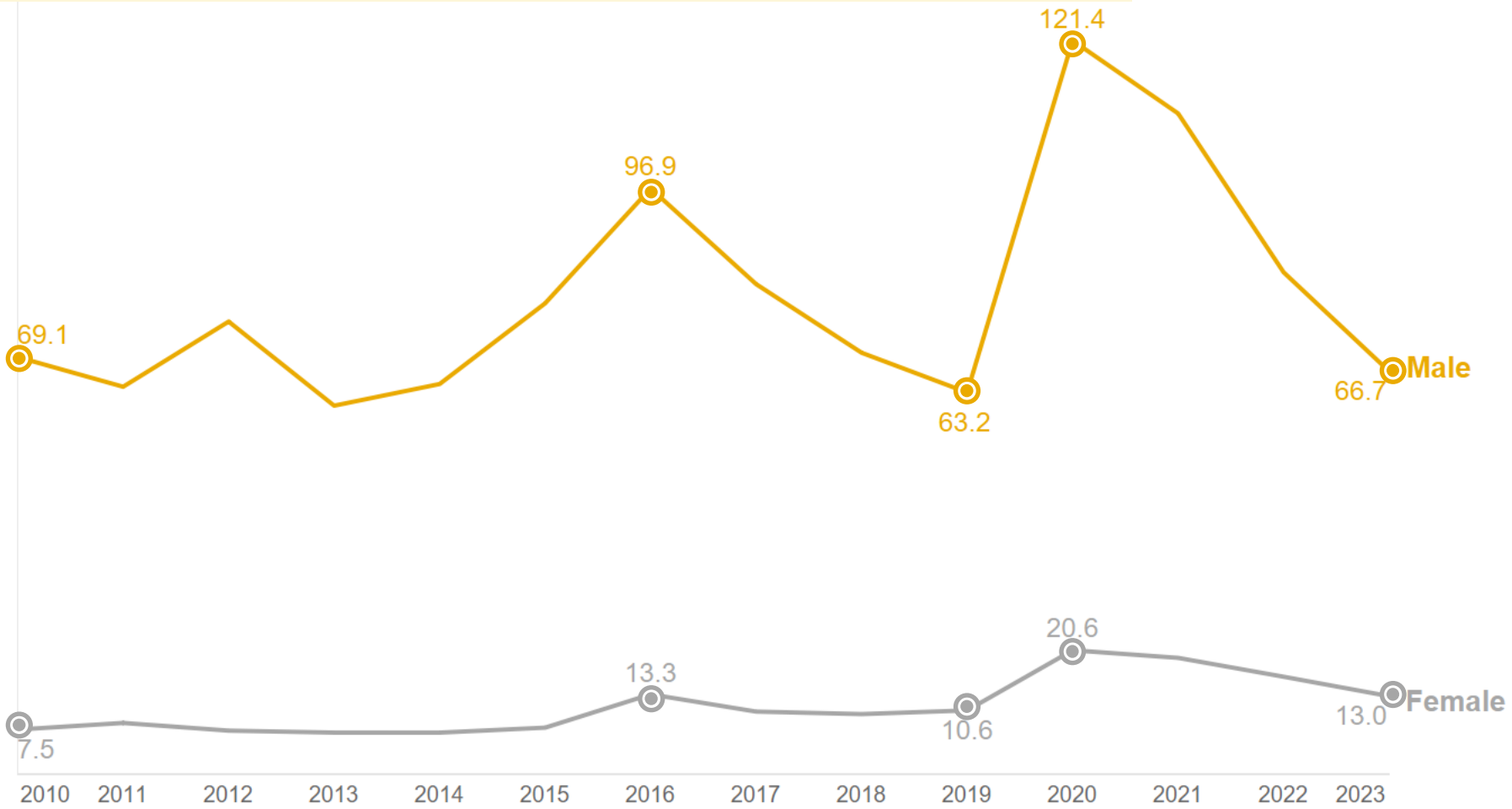
Age-adjusted summer shooting victimizations by age group per 100,000 residents




Source: Chicago Data Portal; 1-year ACS

# Men account for the vast majority of shooting victims during summer months

Sex-adjusted summer shooting victimizations by sex per 100,000 residents




Source: Chicago Data Portal; 1-year ACS