



# School Shooting Incident

A Retrospective Analysis to uncover pattern in School Shooting

Prepared by By Huiting Wu, Anisha Sharma and Melissa Bustamante



# Contents



**B**

**Background**



**V**

**Data Analysis and Visualization**



**C**

**Conclusion**

# ... Background

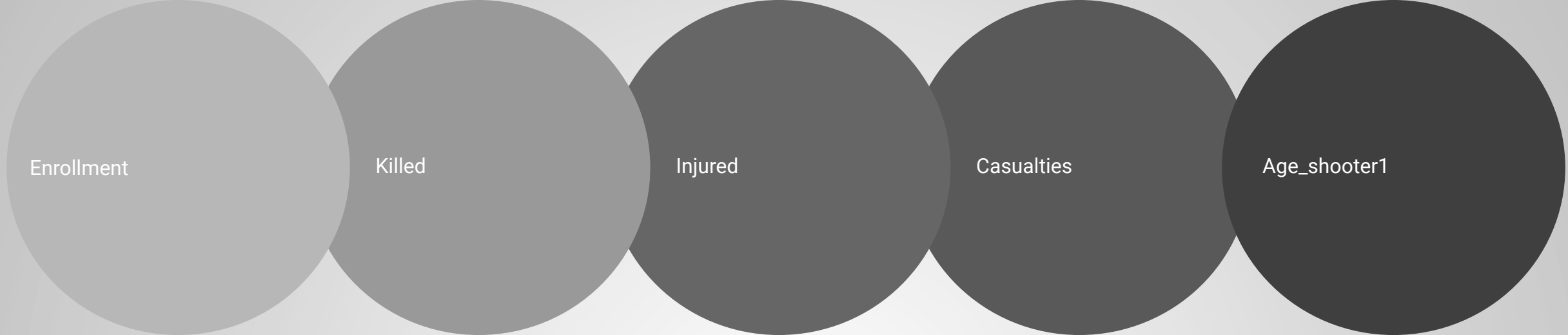
## **What and Why is it important**

- School shooting are deeply troubling issue that has affected many families.
- School shooting incident happens more often in the United States when compared to other developed country.
  - According to a study published in the journal "Health Affairs," between 2009 and 2018, the U.S. had 57 times more school shootings than the other major industrialized nations combined.
- It is important to retrospectively look at the incidence to uncover a pattern and implement preventive measures.

# Background

## Data Source :

- Since the federal government does not maintain database on school shootings, the data used for this project was gathered by The Washington Post (TWP).
  - TWP used news articles, open-source databases, law enforcement reports, and calls to schools and police departments to create the database with comprehensive data points on school shooting.
- Data contains information on gunfire which met the TWP violence criteria since the Columbine High massacre on April 20, 1999.
  - Shootings at after-hours events, accidental discharges that caused no injuries to anyone other than the person handling the gun, and suicides that occurred privately or posed no threat to other children were excluded.
  - The database contains 50 columns and 387 rows.
- The purpose of the data is to identify and record every act of gunfire at k-12 schools.
- Reference: <https://github.com/washingtonpost/data-school-shootings>



Enrollment at school at time of shooting

Number killed in shooting (excludes shooter)

Number injured in shooting (excludes shooter)

Number killed and injured in shooting (excludes shooter)

Age of first shooter for each schools

# Variables

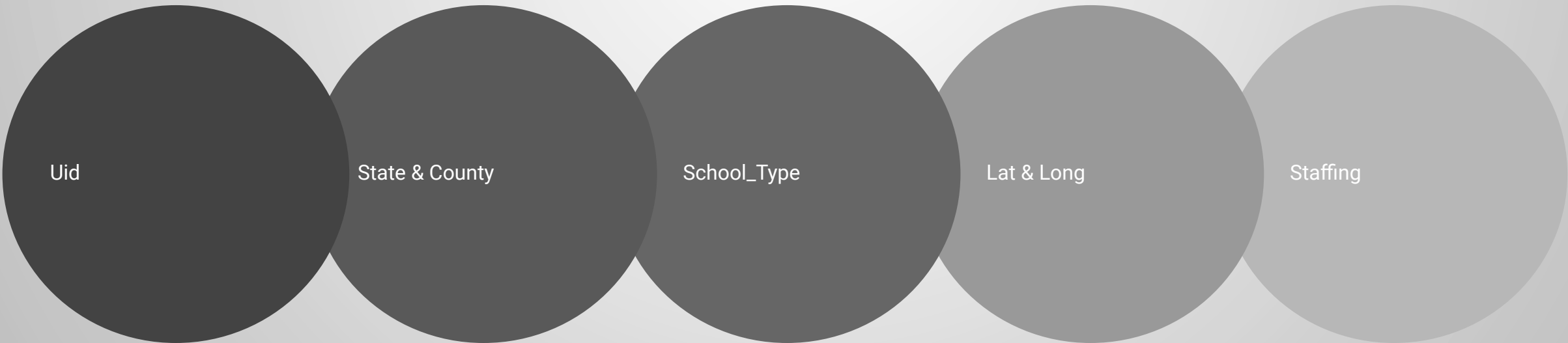
Unique identifier

State where school is located & County name where school is located

Type of school (public or private)

Latitude of school & Longitude of school

Full-time equivalent teachers at school at time of shooting



Uid

State & County

School\_Type

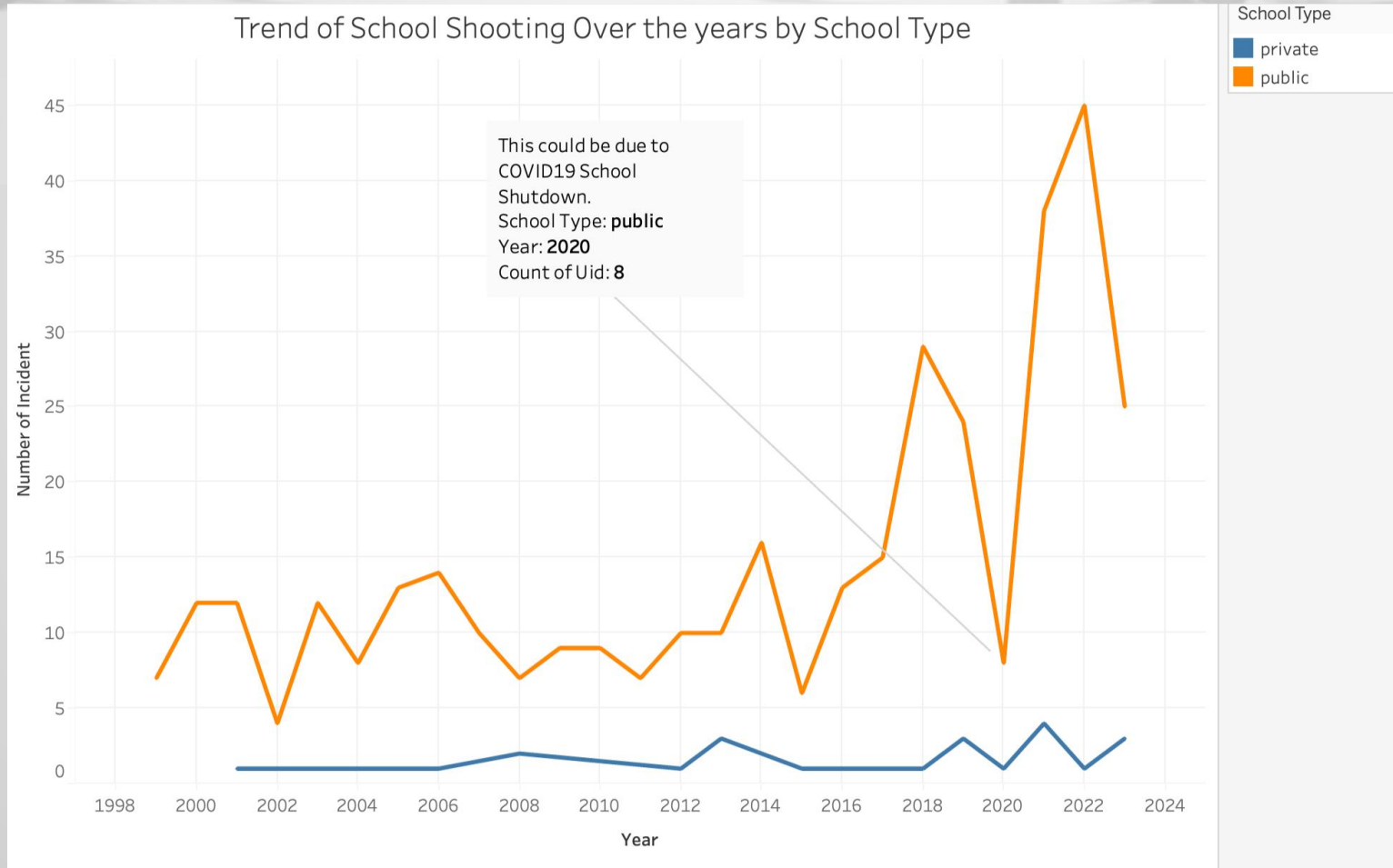
Lat & Long

Staffing

# Data Analysis and Visualization

Is there any correlation between school shooting, the rate of incident and type of school (Public vs Private) ?

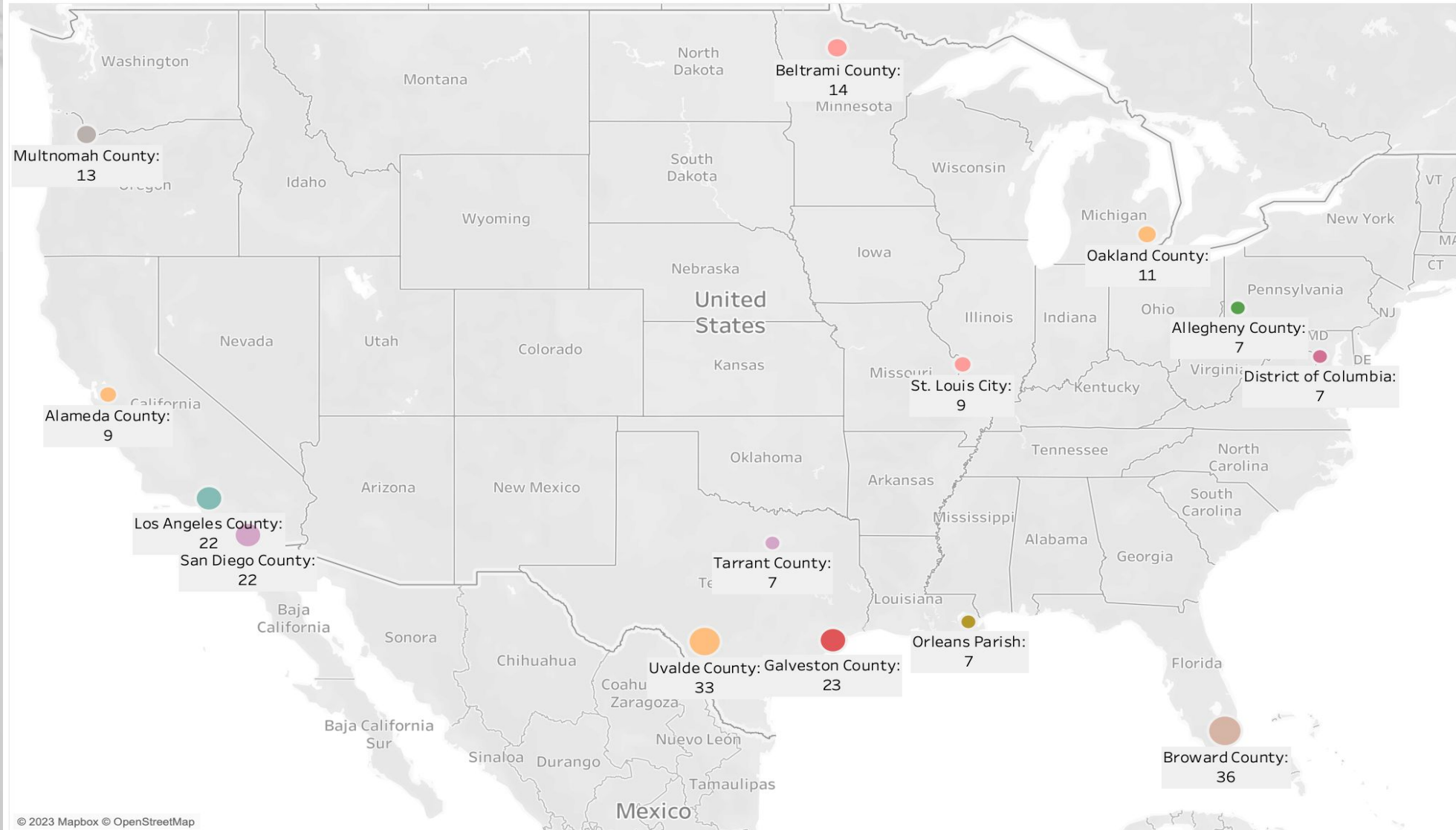
- There seems to be more school shootings at public than private school.
  - One potential reason could be there are more public school than private school.
  - According to National Center for Education Statistics (NCES), there are 3 times more public school than private.



# Data Analysis and Visualization

Any pattern from geographically location of the incident?

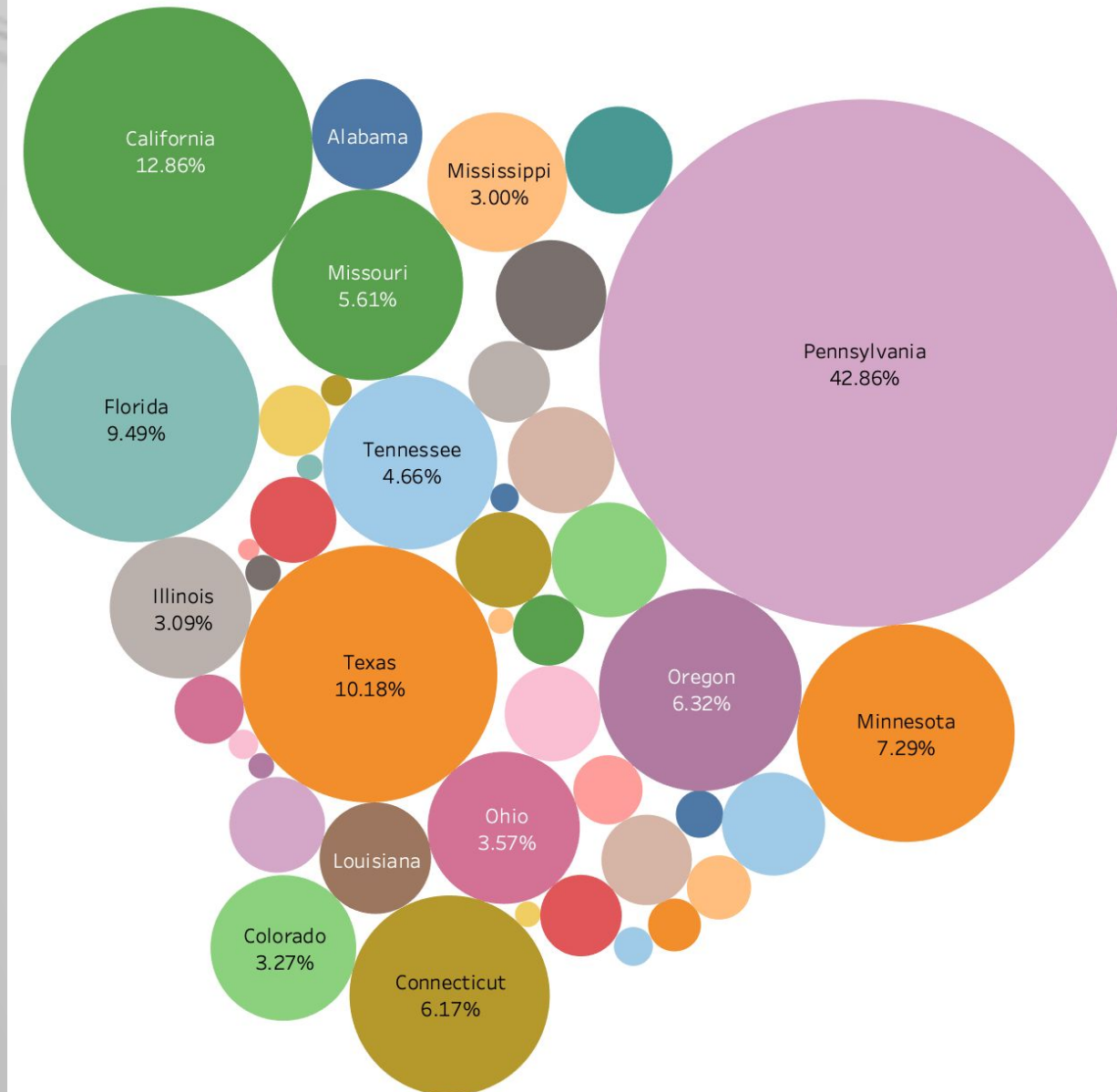
The total of k-12 students got killed or injured in selected county map





# Data Analysis and Visualization

The proportion of Casualties in different states



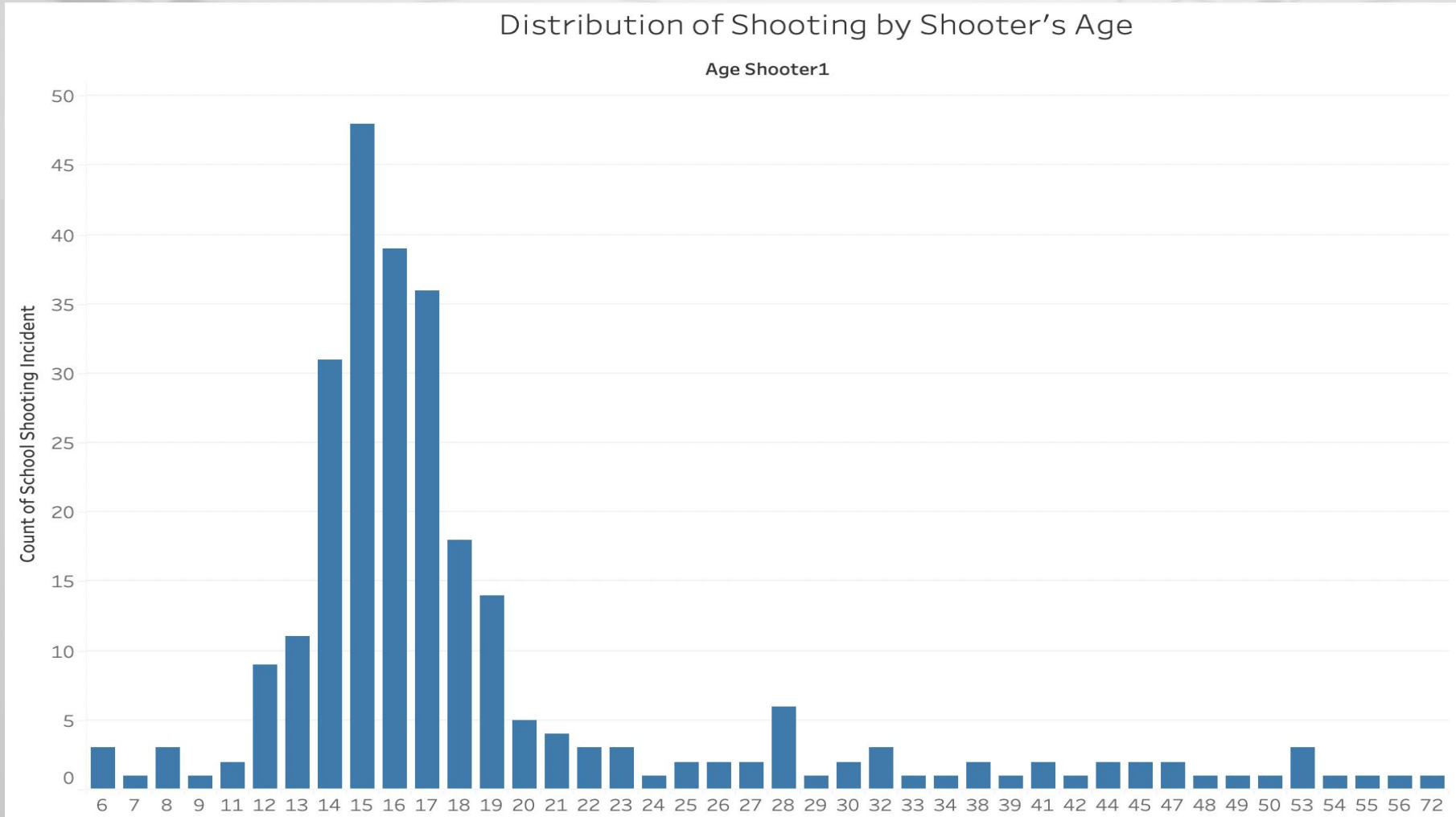
Which state has the highest proportion of causality ?



# Data Analysis and Visualization

Is there age group that are more likely to cause school shooting ?

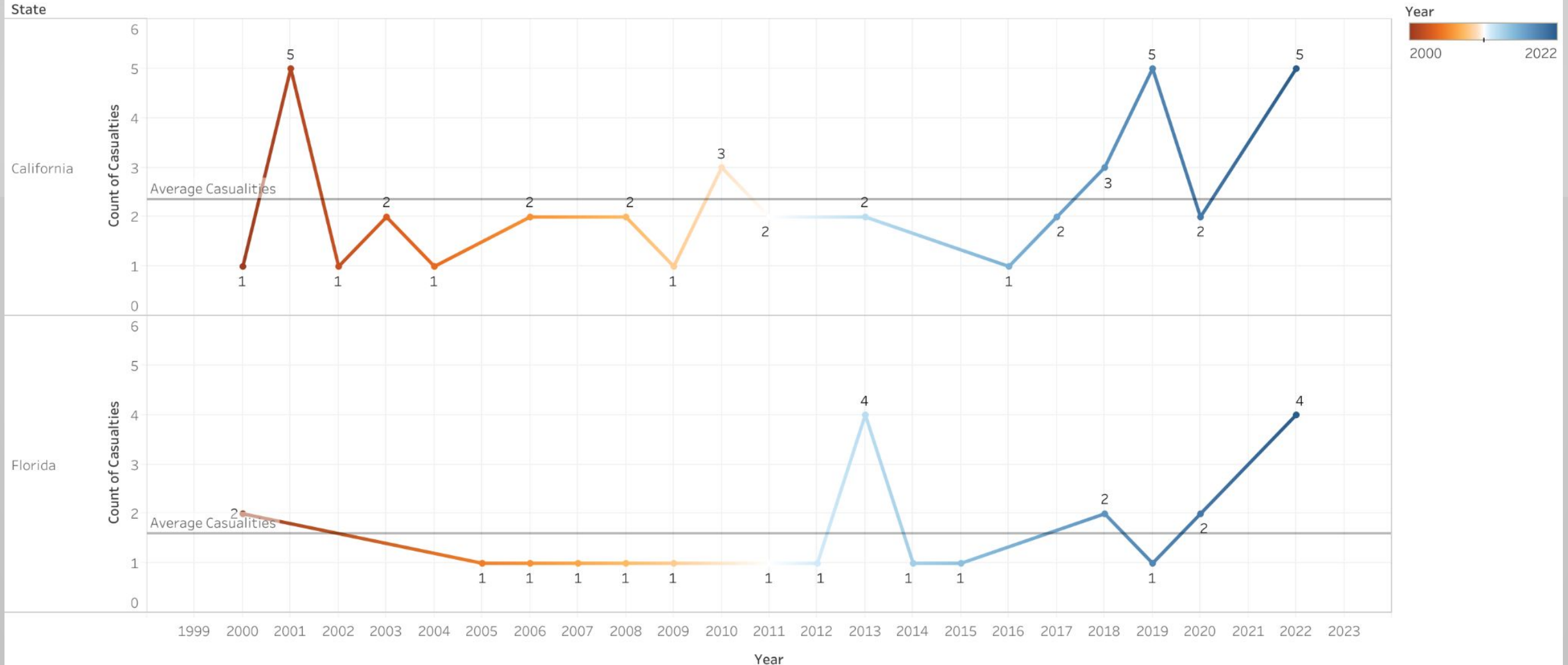
- From the data, it looks like most of the shooters are between 14 and 17 years old. Therefore, it also suggest that there is higher chances of shooting happening in High school.



# Data Analysis and Visualization

Is there difference in incident rate between California and Florida over the last 25 years ?

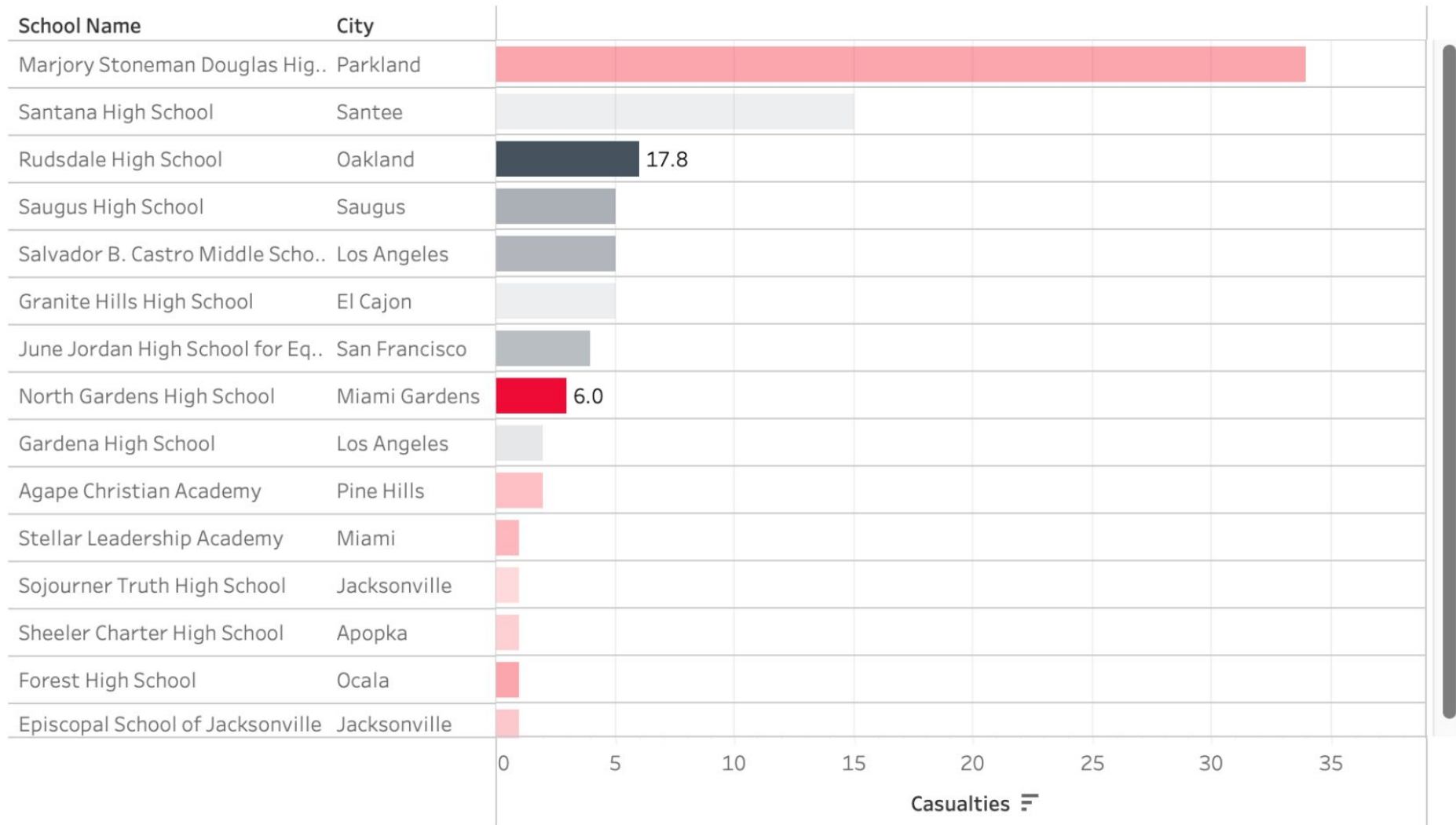
Incidence vs. Time



# Data Analysis and Visualization

What is the relationship between staffing per school and the count of casualty during school shooting ?

Casualties and Staffing per School- 2022



State

- California
- Florida

Year

< 2022 >

◀ ▶

☒ Show history ▼

# Conclusion

- Most school shooting casualties located at south of the United States.
- Pennsylvania has the highest proportion of casualties.
- The rate of school shootings has significantly increased since 2015.
- Public schools experience more incidents of shootings compared to private schools.
- Most shooters are between 14 and 17 years old, implying a higher likelihood of incidents in high schools.



**Q&A**

**Thank you**