

U.S. Lightning Strike Metrics Dashboard Data Summary

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Overview

This interactive dashboard visualizes lightning strike intensity across the U.S. from 2009 to 2018. The goal was to provide a tool for analyzing total strikes, average strikes per location, and the most active zones over time. The design supports fast location-based exploration and year-over-year comparison of lightning activity.

Project

The dashboard was built in Tableau using a dataset with four columns: latitude, longitude, date, and number of strikes. Key features include:

- Geospatial map showing strike volume at each location, using color intensity to reflect density
- Interactive year filter allowing users to toggle between 2009, 2012, 2015, and 2018 or view all combined
- Metrics panel summarizing total strikes, average per point, and the highest strike count recorded at any location
- Location interaction enabling users to click map points for localized insights

All calculations and filters were performed natively in Tableau to ensure performance and usability.

Key Insights

- The dataset includes over 141 million lightning strikes across the U.S.
- Average strike count per location: 10.98
- Maximum recorded at a single point: 2,211 strikes
- High strike density is concentrated in the southern central U.S., with some clusters extending into the Gulf region and southeastern states
- The interactive filter highlights how lightning activity fluctuates year to year and shifts geographically

Next Steps

- Incorporate monthly or seasonal filters to study temporal weather patterns
- Add geographic labels or clustering to make hotspots easier to analyze at a glance
- Combine with population data to assess risk exposure in highly active areas
- Enable export or download options for site-specific lightning reports