

---

---

# Nashville Emergency Communications Center

Tornado and Derecho Data Analysis

---

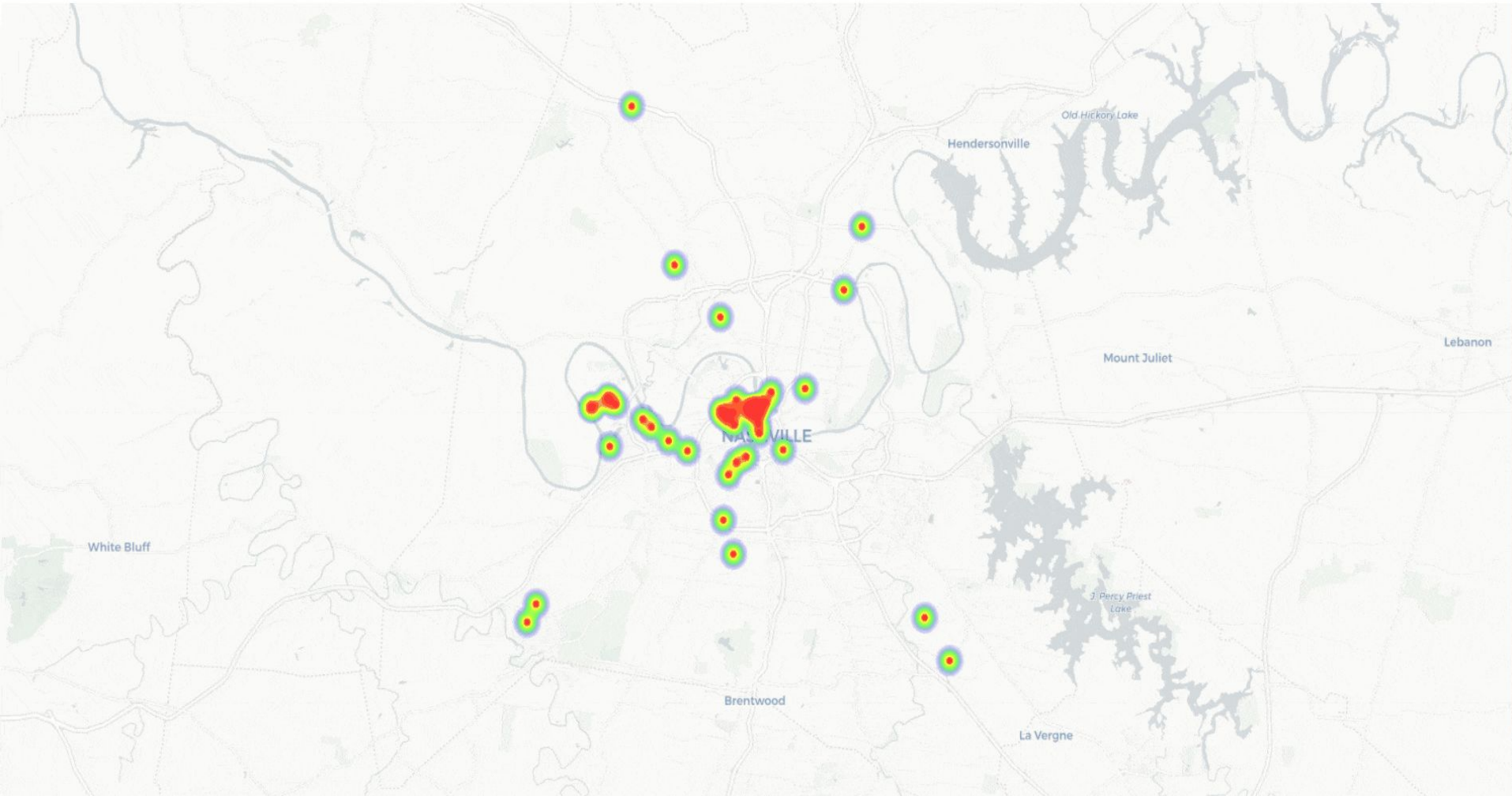
---

---

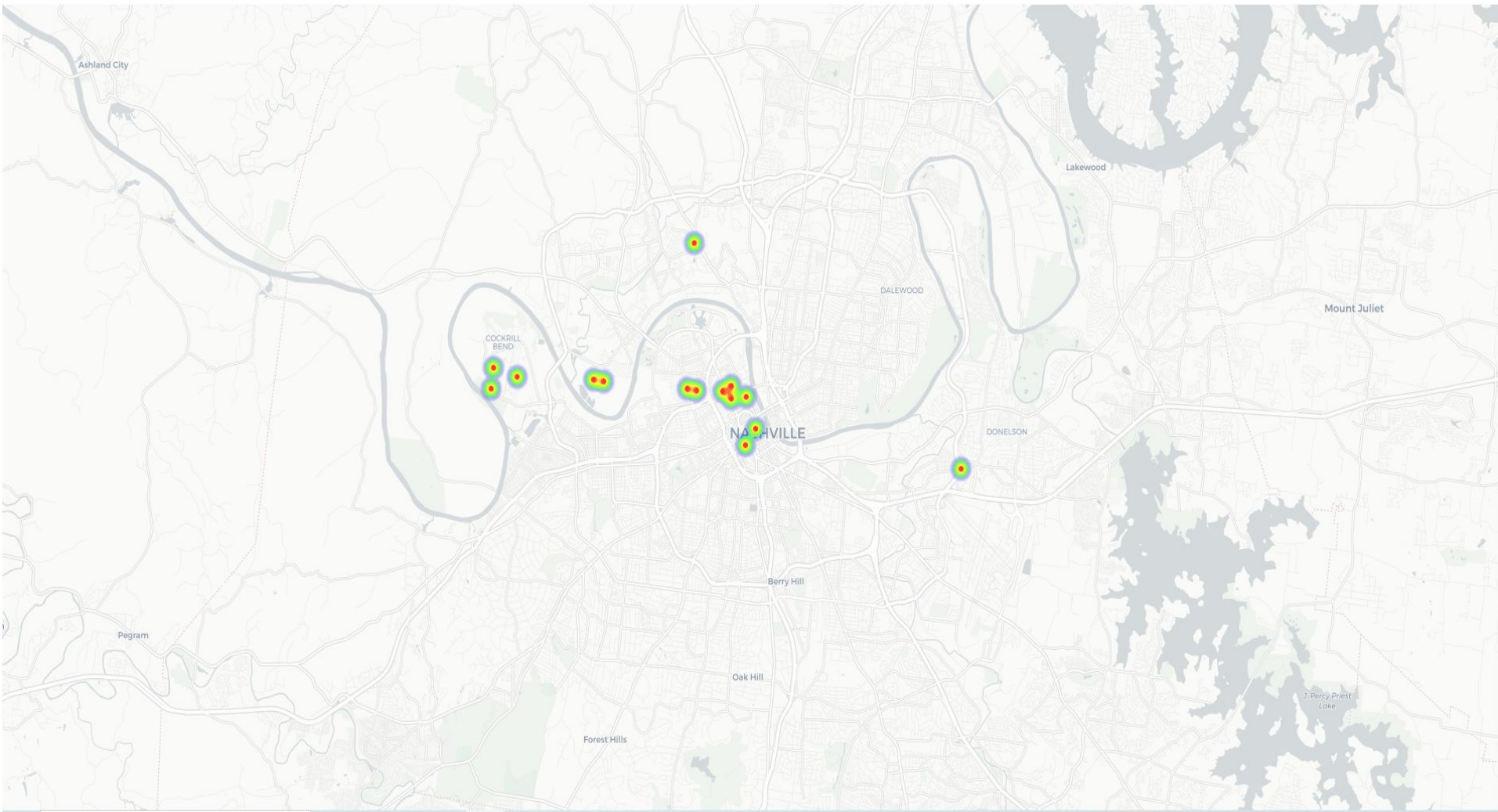
# Overview

- Heat Maps of 911 Calls and CAD
  - 911 Calls and Storm Path
  - The Economic Influence of Storms
  - Police Incidents Before and After the Storms
  - The Second Wave of Calls after the Storms
  - Key Takeaways
-

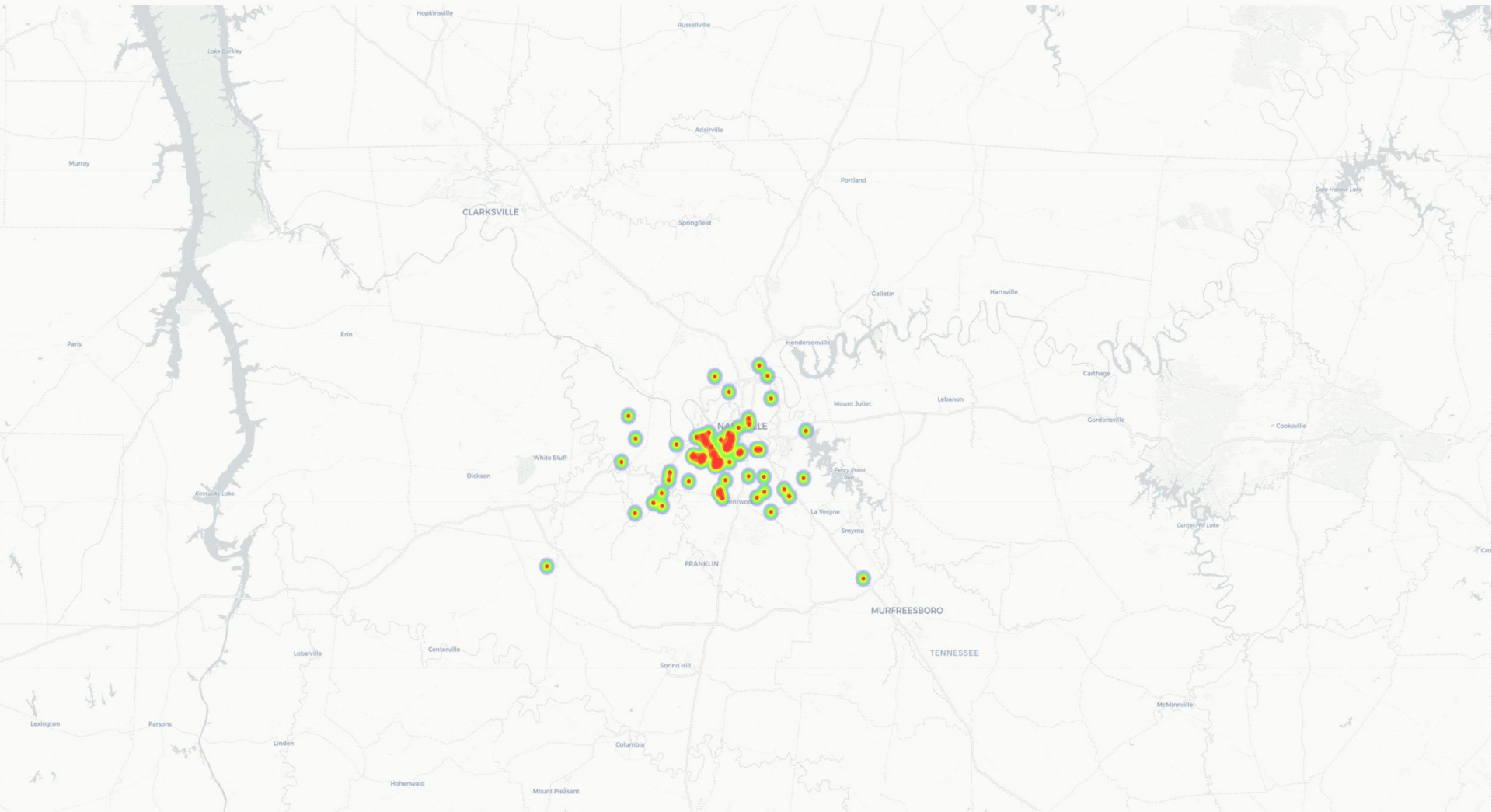
## 911 Calls Tornado 12:30AM-1:00AM



# CAD Tornado 12:30am-1:00am



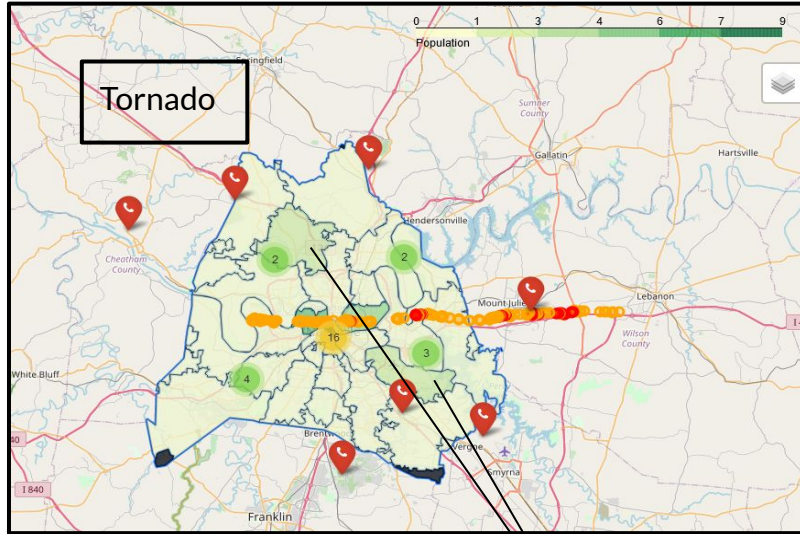
# 911 Calls Derecho 4:30pm-5:00pm







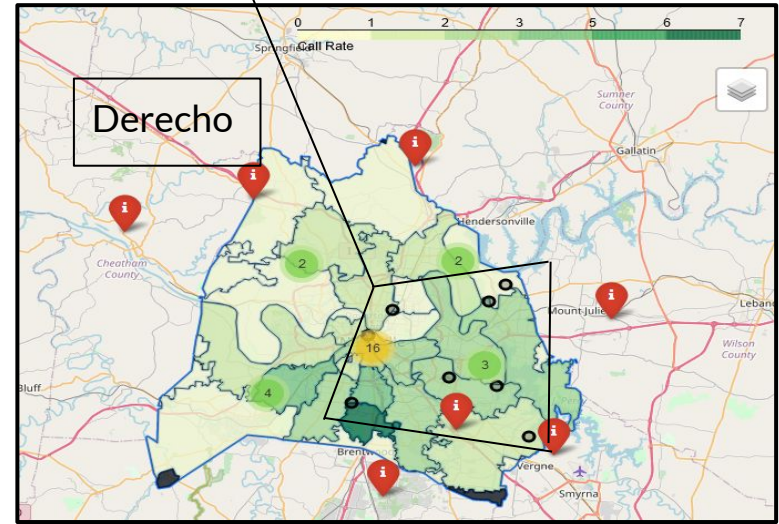
## 911 Calls per 1000 and Storm Path



[http://data-playground.com/dda2/paul\\_new\\_map\\_911\\_tornado.html](http://data-playground.com/dda2/paul_new_map_911_tornado.html)

Several zip codes along the tornado path have low rates of 911 calls

Areas affected by the Derecho tend to have higher rates of 911 calls



[http://data-playground.com/dda2/paul\\_new\\_map\\_911\\_derecho.html](http://data-playground.com/dda2/paul_new_map_911_derecho.html)

---

# Economic Impact

- Tornado estimated economic damage of \$1.5 - \$2 billion<sup>1</sup>
    - 15,600 insurance claims seeking \$1.1 billion<sup>2</sup>
    - As of April 2020, only 7,400 paid out for total of \$370 million
  - Davidson County part of twenty-county footprint to receive federal funding from derecho damage.<sup>3</sup>
    - \$14 million in estimated damages across twenty counties.
-



---

---

# Economic Impact

Link to Interactive Map:

[http://data-playground.com/dda2/ross storm economic map.html](http://data-playground.com/dda2/ross_storm_economic_map.html)

---

---

# North West Davidson County Calls vs Dispatches

Link To Interactive Map!

[http://data-playground.com/dda2/owen nw storms cluster.html](http://data-playground.com/dda2/owen_nw_storms_cluster.html)

---

---

# Two of Metro's Most Wanted

During spring of 2020 Metro Davidson County was hit by two of the most disastrous natural events in memory

- Tornado - March 3rd
  - Up to EF4 level strength(175 mph winds)
- Derecho - May 3rd
  - State-wide natural disaster

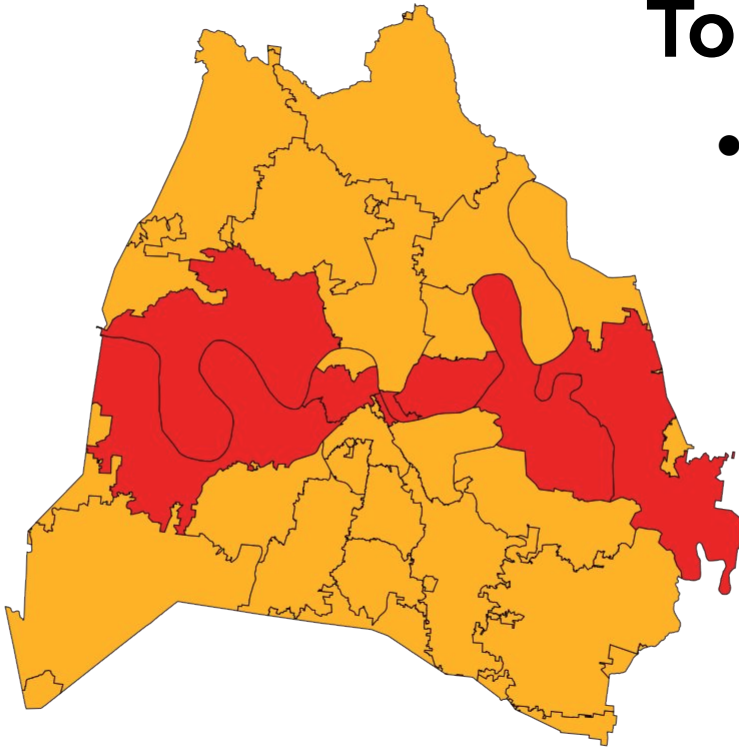
After the devastation of these two events we were pressed with one question -- ***What happens in the aftermath?***

We knew that the police force would be stretched thin, but what about ***crime?***

---

---

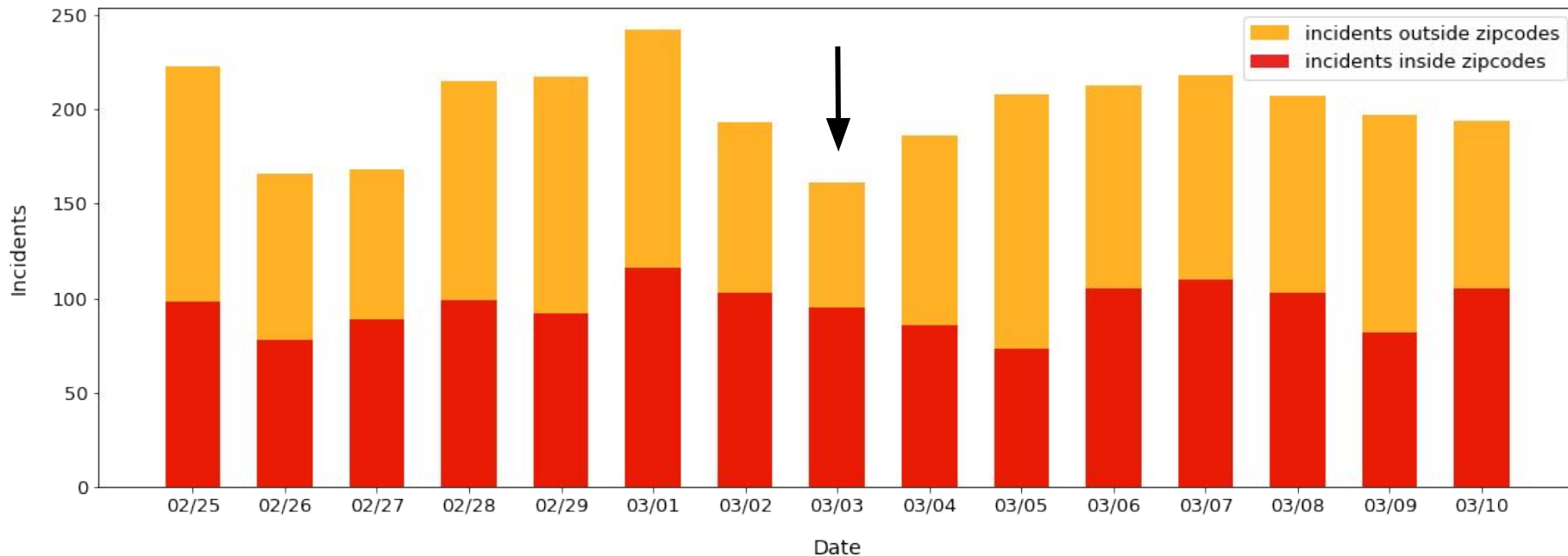
# Tornado - March 3rd

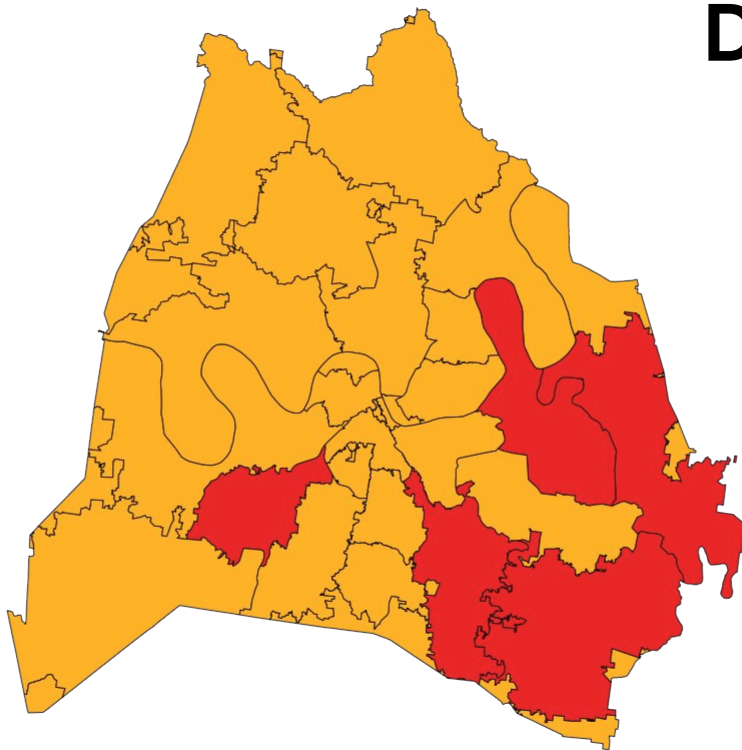


- Zip codes directly impacted by the path of the tornado
  - 37214, 37206, 37208, 37209, 37076, 37201, 37213, 37218

---

# Police Incidents Before and After Tornado





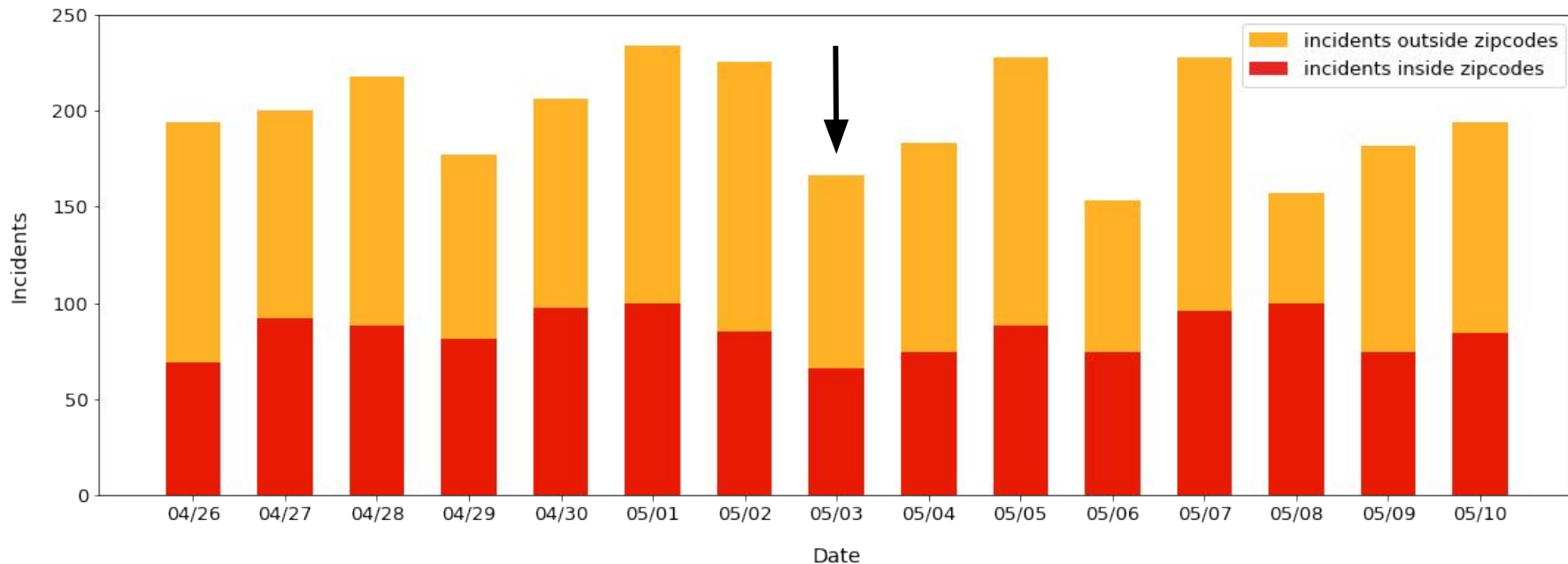
## Derecho - May 3rd

- Zip codes most heavily impacted by Derecho based on call volume
    - 37211, 37013, 37076, 37205, 37214
-



---

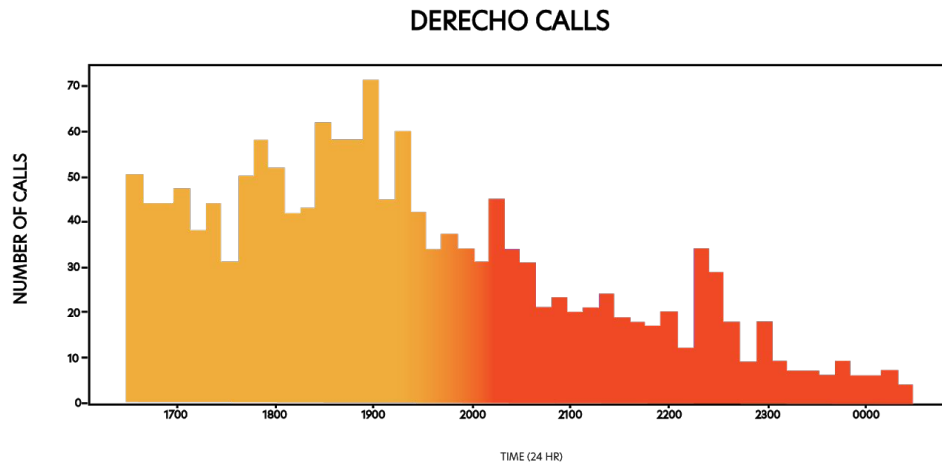
# Police Incidents Before and After Derecho



# DERECHO

1549 TOTAL

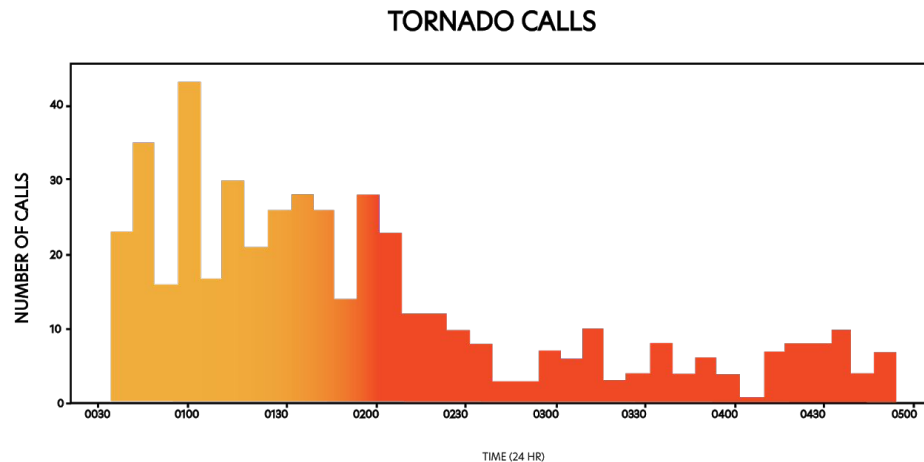
507 SECOND WAVE



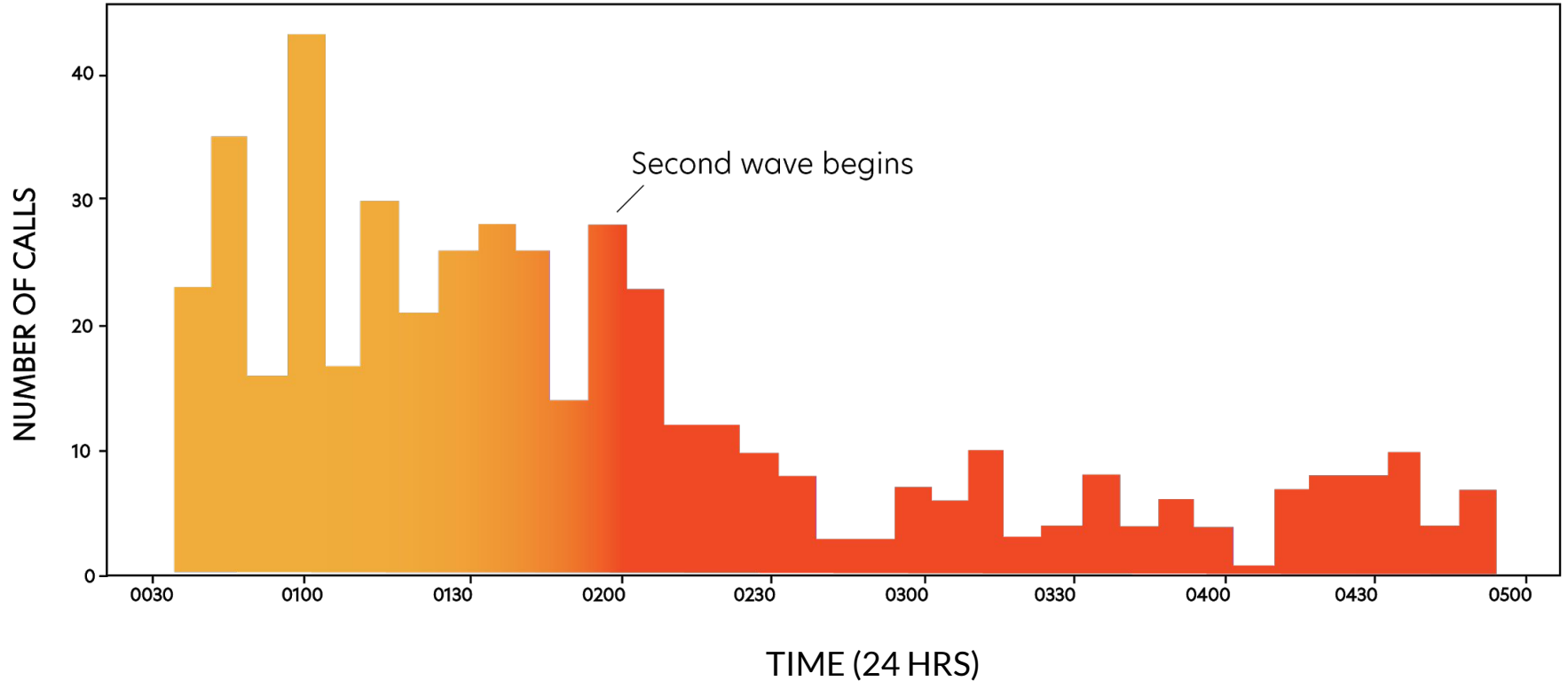
# TORNADO

475 TOTAL

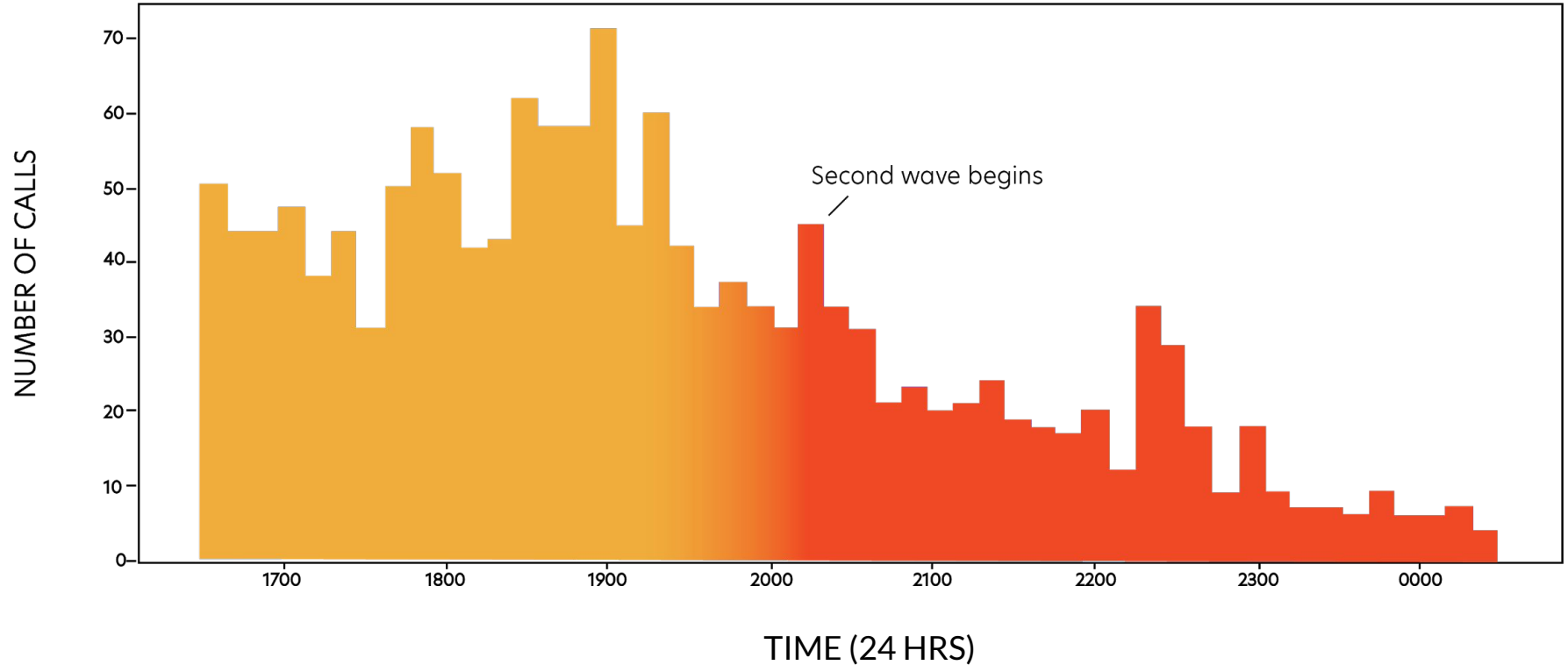
183 SECOND WAVE



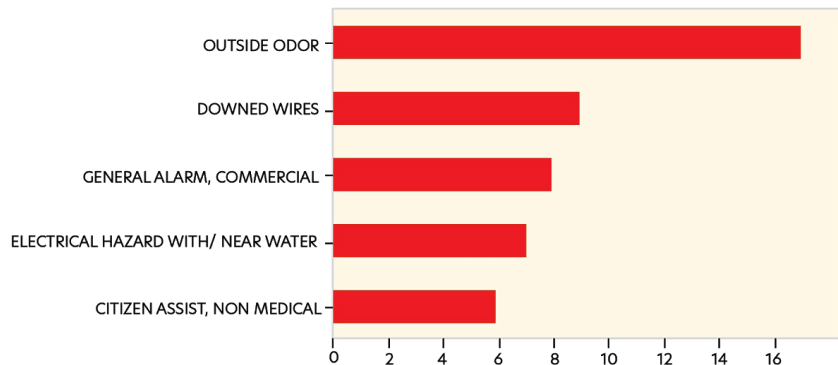
# A Second Wave: The Tornado



# A Second Wave: The Derecho



TOP REASONS FOR CALLS

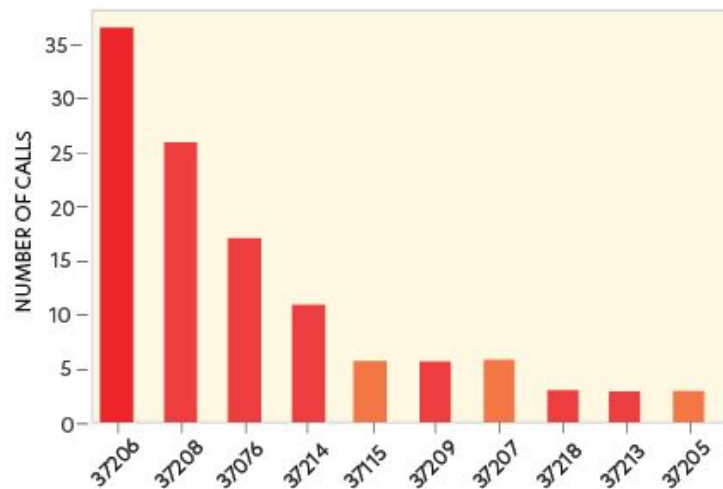


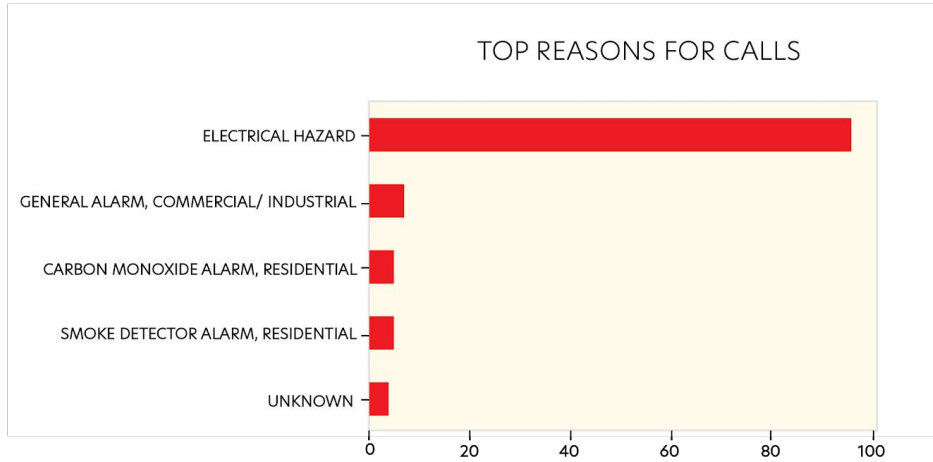
Second wave calls generally dealt with gas leaks, downed wires, and building alarms.

Top zip codes included the Lockeland Springs area, North Nashville, Hermitage area, and Donelson.

# Tornado Calls

CALLS BY ZIPCODE

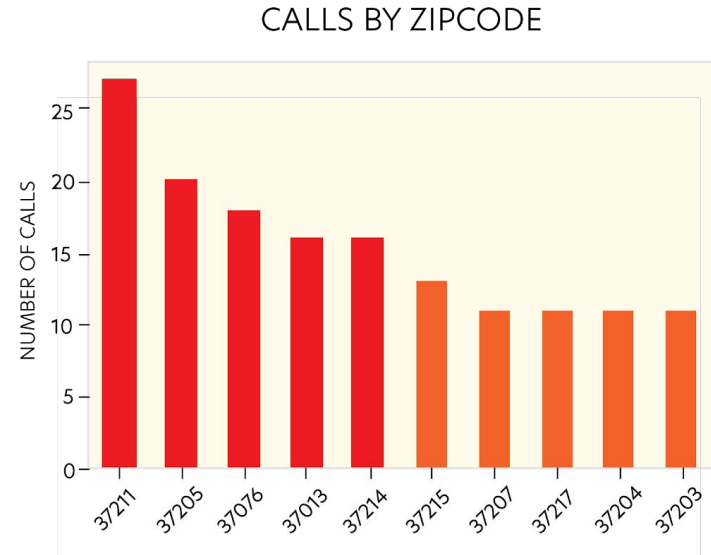




Second wave calls pertaining to the derecho damage were overwhelmingly in response to electrical hazards.

Top areas affected were the Nolensville Pike area, Belle Meade, Hermitage, Antioch, and Donelson.

# Derecho Calls





---

# Key Takeaways

- As expected, the location of incoming 911 calls are closely related to the path of each storm.
  - Economically disadvantaged neighborhoods were heavily impacted by both storms, may be underinsured and require more public relief assistance
  - You can rest assured that crime never sleeps
  - Expect a second wave of calls 2-4 hours after a natural disaster
-

---

# Appendix

## Additional Sources

1

<https://www.accuweather.com/en/severe-weather/accuweather-estimates-the-total-damage-from-the-tennessee-tornadoes-will-approach-2-billion/697185#:~:text=AccuWeather,%20estimates%20the%20total%20damage%20and%20economic%20loss%20caused%20by,Myers.>

2

<https://www.insurancejournal.com/news/southeast/2020/04/27/566394.htm>

3

<https://www.tn.gov/governor/news/2020/7/10/gov--bill-lee-announces-20-tn-counties-will-receive-federal-recovery-assistance-for-may-derecho---storm.html>

---