

# Appendix

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A white van is partially submerged in floodwaters during a heavy rainstorm. The van is on the right side of the frame, with its rear and side visible. The water is murky and turbulent, splashing against the van. The background shows a blurred car and a dark, rainy sky. The entire image has a green color overlay.

Case Study

# Natural Disasters

Flooding in New York, United States and Chennai, India

# Flooding: A Global and Dynamic Risk

Flooding is a pervasive threat. Globally, [1.81 billion people](#) are directly exposed to 1-in-100-year floods. In September of 2023, [10 countries and territories](#) around the world experienced severe flooding over a 12-day period.

While many organizations and government agencies might have flood on their risk radar, the cascading impacts are often unanticipated — and pose a significant threat. The economic impacts alone can be severe.

It is estimated that extreme weather events related to the water (floods, drought and storms) could result in a [\\$5.6 trillion loss](#) in GDP between 2022 and 2050, with floods accounting for 35 percent of this loss.



In 2023, there were **104,324 reports** of flooding globally, according to OnSolve data.

## Top Countries with the Most Flooding Reports in 2023

Country	Reports of Flooding
United States	47,233
Australia	5,602
Spain	4,818
Germany	4,276
Switzerland	3,758
Poland	3,739
UK	3,509
India	2,878

**A closer look at two case studies demonstrates the full range of the dynamic impact of floods.**

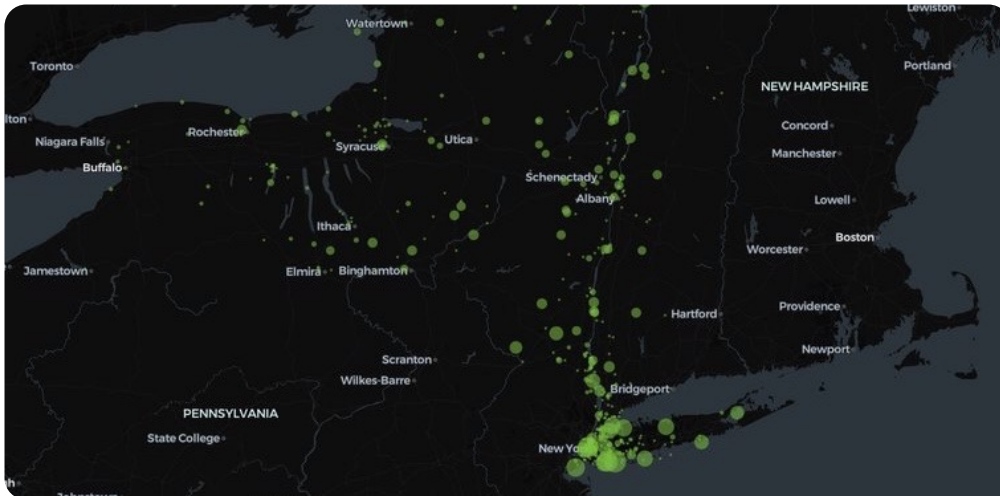
# New York, United States

Between January 1, 2023, and January 1, 2024, there were 1,395 reports of floods, according to our data. The major locations impacted were the New York City area and locations along the Hudson River.

## Some of the biggest flooding events included:

- **July:** Flooding along the Hudson River. This was part of [a larger billion-dollar weather event](#) that impacted the Northeast.
- **September 29, 2023:** The [wettest day on record](#) at JFK International Airport going back to 1948, with 8.5 inches of rain.

## Flooding Locations Across New York in 2023



**Our data reveals a potential new trend:** New York is seeing continuous days of flooding, which can make response and recovery more difficult to manage.

- 12 locations in the state experienced continuous days of flooding from July 9 – 10, 2023.
- Seven locations had consecutive days of flooding from July 7 – 8, 2023.
- New York City had consecutive flooding from September 28 – 30, 2023.

**Lesson: This is not an anomaly. Consecutive days of flooding are becoming more common.**

## The Cascading and Dynamic Impact of Floods

Flooding typically happens in conjunction with other weather-related threats. The most common events reported with floods are wind, cyclones, flash floods, river floods and storm surges.

In addition, flooding often creates new problems. Reports of events caused by flooding rise along with the water. In 2023, some of the top cascading incidents in New York were:

- Power outages
- Road accidents
- Structure collapses
- Technical disasters

# Chennai, India

Chennai, the capital of Tamil Nadu, is a major center for medical tourism and home to a large portion of India's automobile industry. The city has a history of flooding, underscoring the need for a proactive approach for this type of threat. November to December is monsoon season, which can produce cyclones with massive amounts of rainfall.

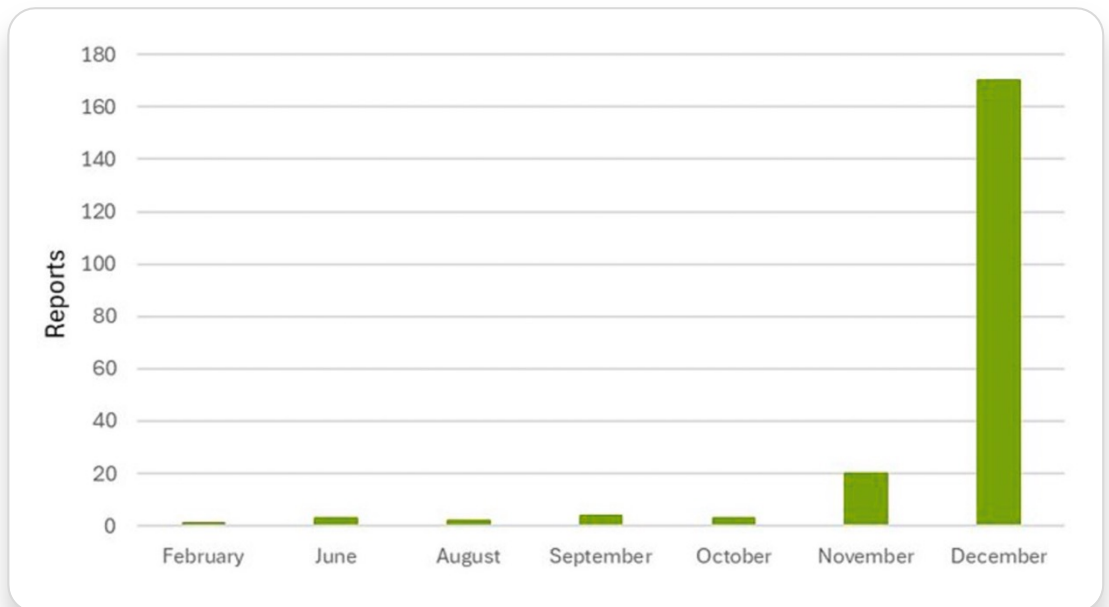
There were 203 reports of flooding in Chennai in 2023, but **170 of those reports were from December**, according to our data. In fact, over a two-day period from December 17 - 18, 2023, Tamil Nadu received almost [15.7 inches of rain](#) – 20 times the normal amount of rain during this time of year.

**The flooding in Chennai resulted in a series of cascading effects that impacted organizations and communities:**

- Road closures
- Structure collapses
- Power outages
- School, university and office closures
- Mobile network failures
- Flight cancellations
- Oil spills
- Public health issues, including boil water advisories and waterborne diseases

**Lesson: The cascading effects of an anticipated physical threat can result in simultaneous and often unanticipated impacts.**

**Flooding Reports in Chennai in 2023**



# Key Takeaways

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- ✓ Flooding is a growing threat that can have severe, long-lasting impacts on organizations and communities.
- ✓ Government agencies and organizations must take proactive steps to prepare for floods, as well as the other types of weather events that occur in tandem. The cascading impacts of floods on infrastructure, supply chains, business continuity, and public health and safety can escalate quickly as continuous days of flooding marked by above average rainfall is becoming more common.
- ✓ **Technology Tip:** A mass notification system makes it easy to inform residents and employees about the precautions that should be taken to protect your people and operations from floods and their aftereffects.



A photograph showing a person wearing a dark hoodie and gloves, using a tool to break into the window of a light-colored car. The person's hands are visible, one holding the tool and the other supporting it. The car's door handle and window frame are also visible. The entire image is overlaid with a semi-transparent green filter.

# Case Study Crime

Theft in San Francisco Bay Area and Los Angeles, California

# Theft: A Threat to Businesses and Communities

While [overall crime rates are down](#) in the U.S., specific types of crime are on the rise. Compared to 2022, homicides decreased 10 percent and gun assaults decreased seven percent in 2023. However, motor vehicle thefts increased 29 percent and drug offenses increased four percent.

The most reported crime is theft — and it poses a significant threat to organizations and government agencies. Our data shows there were **more than one million reports** of theft in the contiguous U.S. in 2023.



## Top 5 Crime Events in the Contiguous U.S. in 2023

Event	Number of Reports
Theft	1,034,036
Assault	710,280
Shooting	492,635
Homicide	226,714
Mass Shooting	82,624

A focused look at two locations in the U.S. demonstrates the dynamic impact of theft.



## San Francisco Bay Area

Theft is a persistent threat. Reports of **theft accounted for 28 percent of all crime reports** in San Francisco for 2022 and 2023 combined, according to our data. The impact on businesses and communities is real.

- Businesses of all sizes – from local diners to chains like [In-N-Out Burger](#) – have been closing over safety concerns due to crime.
- Cars are being stolen or broken into as thieves go after catalytic converters. Social media challenges are also playing a role, with videos of stolen cars going [viral](#) and contributing to spikes in occurrences.
- [Police staffing shortages](#) further exacerbate the issue, with fewer officers available to respond to incidents of crime and theft. This shortage impacts public safety and places an extra burden on businesses dealing with shrinkage and loss.



## Los Angeles

Theft accounted for 71 percent of all crime reports in our data for 2022 and 2023 combined, making it the **most common type of crime reported in Los Angeles**.

Our data also revealed patterns in the type of theft occurring in Los Angeles and the cascading impact.

- Retail theft is hurting both large and small businesses. Large chains and [high-end retailers](#) have closed multiple locations due to crime, and [mom-and-pop shops](#) are being targeted by burglars. Organized retail crime also poses a threat in several forms, including [smash-and-grabs](#) and [flash mob robberies](#) that are being organized on social media.
- Similar to San Francisco, [social media](#) is contributing to rising incidents of car theft, with videos demonstrating how to start specific vehicles without a key.
- Package theft is also an issue in Los Angeles. [Freight trains are being looted](#), hurting big name companies like Amazon and UPS, as well as the companies using these carriers to deliver products.

# Key Takeaways

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- ✔ While the overall decreases in crime may be a signal that this type of threat poses less of a risk to organizations and communities, a closer look at the data reveals that increases in specific types of crime warrant proactive planning and preparation, including training, upskilling and funding.
- ✔ Organizations and agencies should refocus crime prevention and response efforts with a focus on the types of crime becoming more prevalent in their local communities and areas of operation.
- ✔ **Technology Tip:** A historical analysis of specific locations — down to the neighborhood level — can help organizations and agencies identify the most prevalent types of crime. This data can be used to make an informed and proactive resilience management strategy.

The background of the slide features a photograph of a family—a man, a woman, and a child—standing behind a multi-strand barbed wire fence. The entire image is overlaid with a semi-transparent green filter. The text is positioned on the left side of the slide.

Case Study

# Geopolitical Unrest

North American Impacts of the Israel-Hamas Conflict

# The Far-Reaching Impacts of Geopolitical Unrest

Even though a geopolitical conflict occurs outside of North America, the event can have effects that ripple across the globe. Some of the most common cascading impacts are:

- Crime, specifically assaults, bombings, arson and homicides
- Civil unrest, most notably protests and riots



**An analysis of the impact of the Israel-Hamas conflict in North America demonstrates** that even though a conflict may be happening on the other side of the world, agencies and organizations still need to proactively prepare for the dynamic impact.



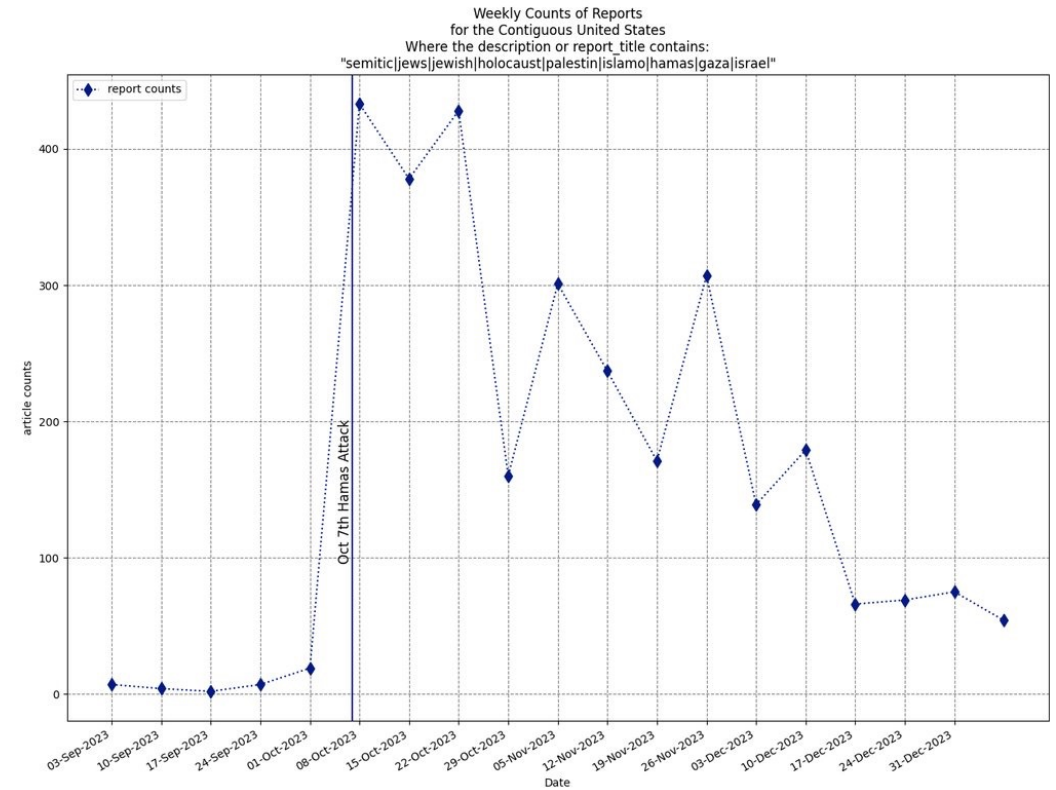
# The Israel-Hamas Conflict

In the aftermath of the Hamas terrorist attack on October 7, 2023, there was a significant rise in incidents of crime and civil unrest in North America related to this conflict.

In the month before the attack, there were fewer than 50 reports of incidents related to Israel and Gaza, according to our data. During the week of October 8, 2023, the number of incident reports **spiked to more than 400**. Some of the most common types of incidents reported were **assaults, arson, bombings and protests**.

Specific examples of the dynamic impact point to the threat geopolitical unrest poses to public safety in areas far away from where the conflict occurs.

- In Montreal, a [synagogue and Jewish center](#) were firebombed.
- [Violence erupted at dueling rallies](#) for Israel and Palestine in Skokie, Illinois, outside of Chicago.
- In Miami, a Hamas supporter [threatened to bomb](#) a Jewish school and synagogue.
- A six-year-old Muslim boy [was killed by the family's landlord](#), who was reportedly upset over the Israeli-Hamas conflict.



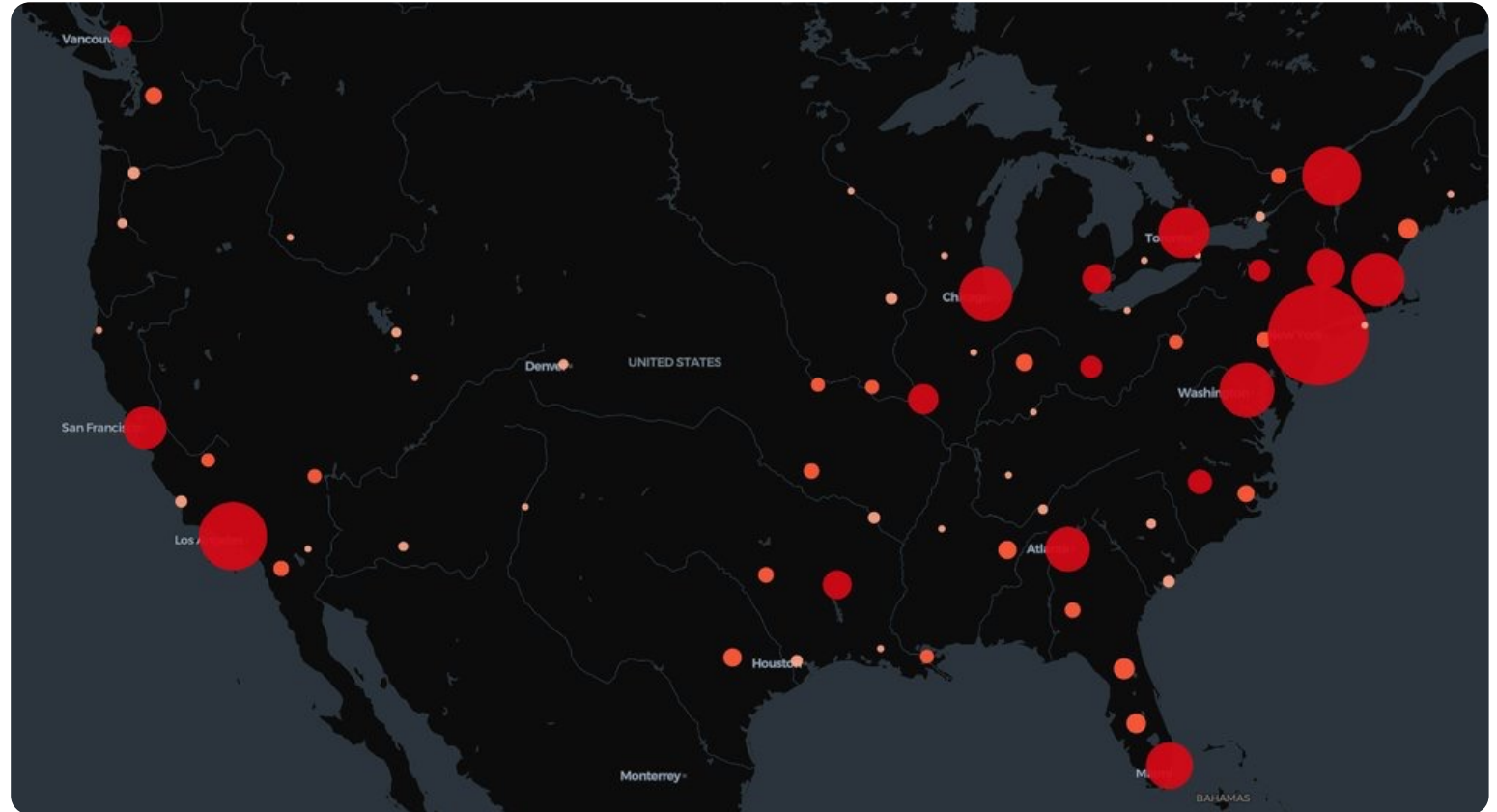
## Dynamic risk

Misinformation and disinformation including false claims and videos spread quickly on social media, making it hard to decipher fact from fiction. Real or not, the rapid dissemination of mis- and disinformation contributes to the cascading impact of geopolitical unrest as people react to what they read and see online.

During the timeframe between October and December, there were 706 unique incident reports related to the Israeli-Hamas conflict in the U.S. Many of these were clustered around major cities.

- **New York, Chicago and Toronto** experienced high numbers of violent crime incidents, such as assaults and bombings, that were related to the Israeli-Hamas conflict.
- **Los Angeles, Miami and Washington, D.C.** experienced a higher number of protests related to the conflict.

## Hot Spots: October to December 2023



# Key Takeaways

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- ✓ When a geopolitical threat emerges, the cascading impacts can be swift and significant.
- ✓ Organizations and government leaders need mitigation plans to reflect not only ordinary crime and civil unrest around local issues. They also need to prepare for a rise in hate crimes and protests related to events that take place in other parts of the world.
- ✓ **Technology Tip:** AI-powered risk intelligence delivers fast, accurate, relevant intelligence on threats that may happen very quickly when a geopolitical threat occurs in another region of the world. Risk and resilience professionals can make quick, informed decisions based on trustworthy information derived from aggregated data.





Case Study

# 2020 U.S. Presidential Election

How to Prepare for the 2024 Election



# The Power of Historical Risk Analysis

The 2020 presidential election was a turbulent time in the U.S. Civil unrest in the form of protests occurred around the country, putting citizens and employees at risk. The protests around the election and the subsequent attack on the U.S. Capitol in Washington, D.C., become top of mind as we enter a new election cycle in 2024.



**Organizations not only need real-time intelligence, but also need historical trends and statistics to become proactive as opposed to reactive.**

For instance, looking at historical risk data from the 2020 election can help risk and resilience professionals understand vulnerabilities, make strategic decisions around resource allocation and identify high-risk locations.



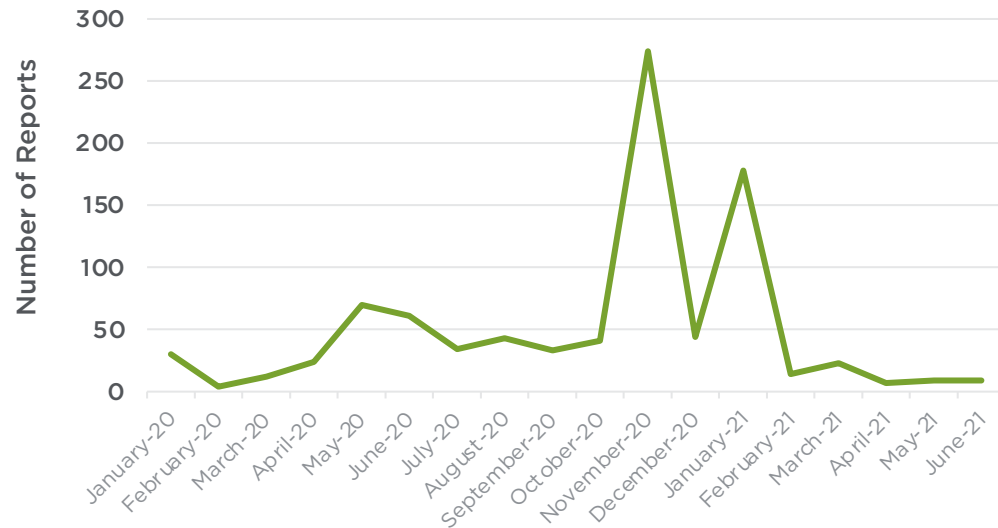
# The 2020 U.S. Presidential Election

Our data shows a spike in election-related protests/riots in November 2020 and again in January 2021, with a total of 496 reports of protests related to the election during this period.

Several other physical threats were often reported as part of the protest reports. The top five threats in ranking order that appeared most often in conjunction with an election-related protest report were:

1. Assault
2. Shooting
3. Fire
4. Arson
5. Homicide

Trend of Protest/Riot Reports Over Time

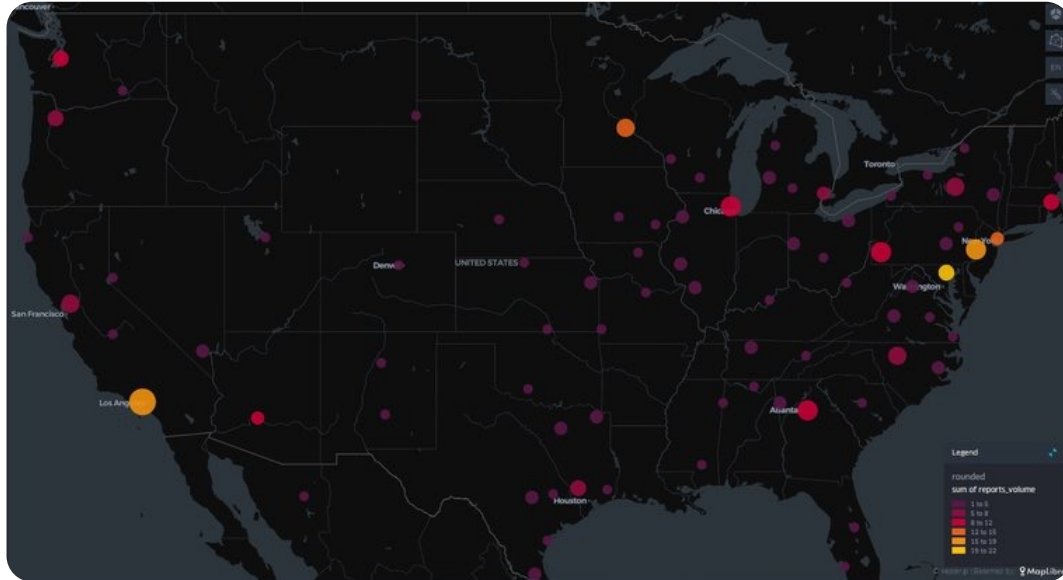


The historical threat analysis of our data also uncovered increases in reports of **assaults, explosions, shootings and homicides**.

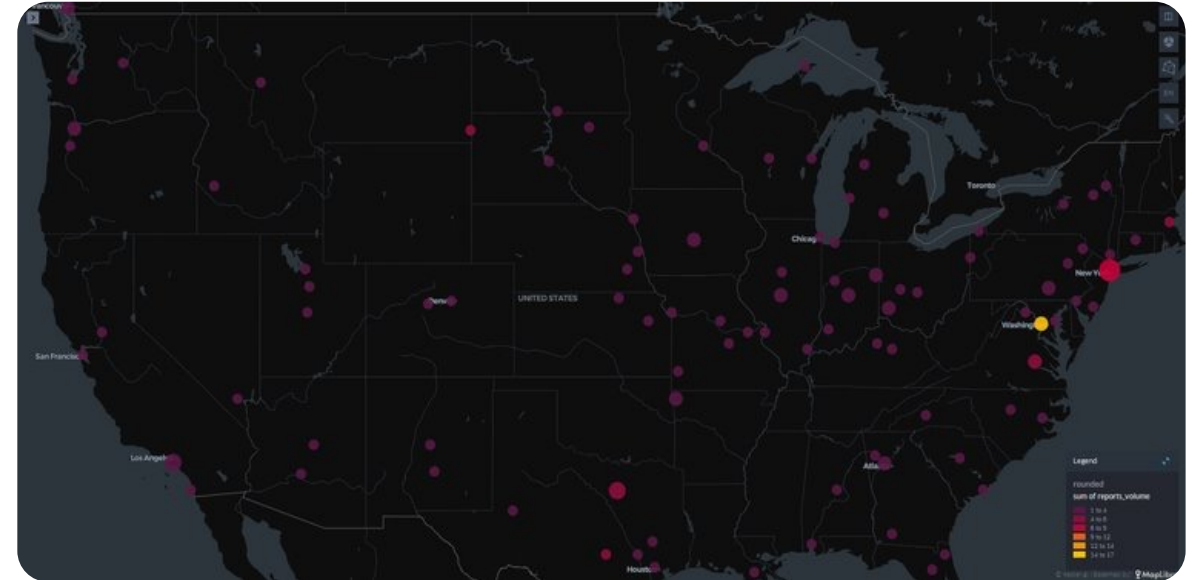
Though not directly tied to election-related protests reports, these physical threats spiked during the same timeframe and in the same hot spots.

In November 2020, protest reports clustered in major cities, creating **several hotspots**, whereas in January 2021, the reports of protests were **scattered across a larger region**. The scattering in January can be seen as a **dynamic risk**, with protests taking place in unexpected locations outside of major cities.

November 2020



January 2021



Peaceful protests often turned into armed/violent conflicts.

- Clashes broke out [near the White House](#) on election night.
- Opposing groups clashed at [Detroit TCF Center protests](#).
- Protestors were also witnessed [near the homes of key political officials](#).

# Key Takeaways

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- ✓ The 2024 presidential election will likely cause protests, some of which may turn violent. Risk leaders and emergency managers need to have a plan in place for civil unrest.
- ✓ Leaders should also anticipate an increase in other crime/violence, notably assaults, shootings, fires and arson and create comprehensive mitigation plans in advance.
- ✓ **Technology Tip:** Technology can help organizations and agencies better understand risk exposure. Historical threat data enables risk and emergency leaders to identify the threats likely to occur the weeks before, during and after the 2024 election and make a strategic preparedness plan. As the election unfolds, real-time risk intelligence alerts leaders to threats quickly, so those plans can be carried out swiftly.

# Methodology

## Global Survey

**OnSolve commissioned Atomik Research, a full-service market research company, to conduct online surveys of:**

- 234 executives at large- and enterprise- sized companies across various industries located throughout the globe in countries such as the United States, the United Kingdom, India, Canada, Australia, South Africa and Brazil. The online questionnaire was available in English, Portuguese, Afrikaans and Hindi. To qualify for participation in the study, participants must indicate they held the following roles within companies consisting of 3,000 or more employees: Chief Executive Officer, Chief Information Officer, Chief Security Officer, Chief Information Security Officer, Chief of Operations, Chief Technology Officer, Chief Human Resources Officer, Chief Resilience Officer, Vice President of Business Continuity or Vice President of Security.
- 51 federal workers within leadership positions at U.S. federal organizations and agencies. In order to qualify for participation in the study, participants must describe roles with the same title or similar to the following positions: Chief Information Officer, Chief Information Security Officer, Chief Information Systems Officer, Vice President of Business Continuity or Vice President of Security.
- 104 full-time civil servants who work within government organizations or agencies at the state and local levels throughout the United States. Further, civil service employees included in the survey sample all indicate working in emergency manager, city manager, county manager and public safety chief roles within organizations or agencies that serve a population of 50,000 or more people.

Fieldwork took place between December 16, 2023, and January 2, 2024.

## OnSolve Risk Intelligence Data

This research study explores risks that OnSolve detected across various timeframes and locations, that had the potential to impact its customers. The data in this report was gathered using OnSolve Risk Intelligence, an AI-powered technology that monitors more than 50 risk categories of physical threats across 159 countries in real time. OnSolve Risk Intelligence detected more than 50 million reports of global risk events from January 1, 2020, to December 31, 2023, using AI and analyst-vetted information pulled from data sources that include local fire, police and emergency medical services departments; weather reports and alerts from government and non-government verified sources; federal government agencies such as the Federal Bureau of Investigation, Department of Homeland Security and other crisis management entities; local, national and international news; and critical event reports from verified social media feeds.

OnSolve Risk Intelligence monitors global physical threats that have an impact on its base of 30,000 customers, which consists of half of the Fortune 100, nearly half of the Fortune 500 and 10,000 communities across the U.S., including state, regional, local and federal entities. OnSolve programmatically maps events to locations worldwide, determining which part of an organization might be at risk.

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## About OnSolve

OnSolve® is the leading provider of AI-powered critical event management technology that enables organizations to proactively mitigate risk and remain agile when a crisis strikes. With powerful and reliable risk intelligence, mass notification and incident management technology, the unified OnSolve Platform allows enterprises, organizations and government agencies to prepare, detect, activate and recover from physical threats. Named a leader in the Forrester Wave™: Critical Event Management Platforms, Q4 2023, OnSolve received the highest possible scores across 12 criteria, including Physical Threat Intelligence, Employee Mass Communication and more.

With billions of alerts sent annually and proven support for both the public and private sectors, OnSolve is used by thousands of entities to save lives, protect communities, safeguard critical infrastructure and enable agility for the organizations that power our economy.

For more information, please visit [www.onsolve.com](https://www.onsolve.com).