

## Anticipate and Mitigate Natural Disaster Risks

John Mathews: I'm John Matthews. I am a professional engineer. This is my 49th year in design and construction industry, and the last 28 have been in educational facilities and resources. I'm happy to present to you today the webinar on disaster management for Head Start facilities.

I'd like to begin today with a discussion on the session handouts. This is a QR code that you can take a picture of. It'll take you to the session handouts. I believe in the chat function we're putting up a link to the session handouts. I'll just quickly walk you through. It's a SharePoint site. It has handouts checklist on the eight different kinds of natural disasters we'll be talking about today as well as short slide decks from the other national centers – from PFCE, from HBHS.

I'll just pop up an example resource for you. This is a link to other resources, including FEMA US declared natural disasters. You can apply for safe room money through FEMA, you have to be in a state in which a natural disaster was declared. This is a comprehensive list of those states, and it's quite a long list.

There are other resources here from Centers for Disease Control. I'll just pop up an example resource here, an embedded link. This is actually a map of tornadoes that have struck the United States since the 1950s. And in evaluating the risk of tornadoes to your area, you might be wanting to pull this map up and just look at the kinds of tornadoes that struck you. This is Arkansas. These are the tornadoes that have struck Little Rock, Arkansas. And as you can see, you could evaluate this. You can see that you've been struck by EF2's, EF1's. One significant one was an EF2 right here and in 2023 year. We'll get into a risk assessment team, but the risk assessment team can look at this as one of the potential resources.

Take a look at these handouts – not for nothing. They're really important, and if you in the short term need to prepare for an imminent disaster – say, a tornado – you can go down this checklist, and it'll highlight the things that you need to consider for your facility to prepare it the next couple of months for a tornado.

What can you expect from this session today? What will be your key takeaways? Well, one of the takeaways you want to think about is that you want the capability and capacity to understand the evolving risks of natural disasters that could strike your Head Start centers. You want to be able to identify facility repairs and improvements needed to ensure that it can survive the forces of a natural disaster. Finally, you want to effectively manage your program's response recovery from natural disasters when it happens. We suggest that you adopt three mindsets – David talked about mindsets – to effectively combine and unify your approaches to planning, responding, and recovering from a natural disaster.

The first one is an anticipatory mindset. Become familiar with the type of frequency and duration of natural disasters that could impact your community and your Head Start program. Be aware of how climate change can make natural disasters larger and more frequent and more

damaging. How does your facility's location, the surrounding terrain, and the design of the facility itself determine its vulnerability and resiliency to major storm events?

Risk mindset. Understand what your risks are and prepare to mitigate them. One way is by organizing a deep pool of resources – suppliers, service contractors, material – to help facilitate the environment. To help facilitate your recovery after a natural disaster when a disaster strikes your area, it may take an hour or a few days, but recovering from it could take years. For example, after a disaster strikes, construction companies will be overtaxed or incapacitated. Oftentimes, after the disaster, they'll focus on the larger projects, hotels, large buildings, office buildings, and they'll work the way down the list to a child care center.

You might be able to recover and rebuild faster if you've already identified an agreement with consultants and with contractors, either in your area or outside of your area. By pulling these resources in from a different community in the event of a tornado, or up to 30 or 40 miles away in the event of a hurricane, you might be able to stand your facility up sooner. We'll get to what benefits that has for your families and your children.

Lastly, a preventative mindset. We'd like you to walk away thinking about planning. What are you going to do to make your facility more resilient to natural disasters and to protect your children and staff? We advise you follow the steps in the Natural Disasters and Head Start Facilities Guide that we're going to introduce you to that leads you through an effective planning and implementation process.

Well, the discussion on three mindsets sets us up to review the history and future of forecasts of natural disasters, the impacts to your programs, and your response to these risks. Let's delve into anticipatory mindset. As you can see from this slide, the rate of weather-related natural disasters has increased over time. From 1980 over the last 40 years, it's continually gone up. On this slide, this is the trend of natural disasters that have cost \$1 billion or more over the same 40-year time period. This is an inflation adjusted to 2022. You can see, in particularly in the last 10 years, the rate and cost of these natural disasters has started to escalate.

Now, what's interesting in the next slide is that this is representative of wildfires. You can see, from 1983 to 2021, the number of wildfires has increased, remained somewhat steady, and then started to decrease. But in the righthand slide, the number of acres burned has gone up from 1 million acres in '83 to 7 million acres in 2021 even though the number of wildfires has gone down. This is indicative of the fact that because of climate change, warmer springs, longer summer dry seasons, drier vegetation, climate change is threatening to increase the extent and severity of fires. We're experiencing trends of longer wildfire seasons and larger wildfire size, as more frequent and longer droughts occur.

What does this mean to you? Well, if you're a program that has been on the edge of wildfires or pretty far downwind of a wildfire, you might now find yourself in the midst of a wildfire as time goes on – and is a risk that you want to assess and what it means to your program.

This slide shows us billion-dollar disasters by year. In 2021, there were 20. In 2023, so far, we have 23, which is a record-breaker. Now, there are two types of natural disasters that we talk about. One is caused by ... Weather, seasonal changes, the sun, our human footprint are all contributing factors to things like tornadoes, hurricanes, heat domes. The other type of natural disasters are caused by the earth: earthquakes and volcanoes. We can see that in 2021, there was a breakout of hurricanes along the Gulf Coast and East Coast, while the West was dominated by wildfires, droughts, and flooding in California. The Midwest, as usual, is typical, was dominated by tornado outbreaks and severe weather.