

Safety First | Managing Weather Risk at Outdoor Events

A guide to planning, monitoring, and protective action

dtn.com

©2026 DTN, LLC, all rights reserved. “DTN” and the degree symbol logo are trademarks of DTN, LLC



Table of contents

3 Introduction

4 Why Weather-Related Safety Plans Are Essential for Outdoor Events

5 How to Plan Protective Action and Manage Weather Risk

6 How Decision-Grade Weather Intelligence Supports Safer Operational Decisions

7 Weather Intelligence at Work

Introduction

Severe weather can turn an outdoor event into a public safety challenge in minutes. For event organizers, the decision is rarely as simple as continuing or canceling. Teams need to understand how conditions are developing, know when to act, and communicate clearly with attendees, often while an event is already underway.

In September 2025, lightning around Lincoln Financial Field in Philadelphia led officials to suspend the NFL's season-opening Kickoff Game between the Eagles and Cowboys for 65 minutes. The Eagles put the National Weather Service warning on the stadium scoreboard and directed fans out of the open seating areas and into the concourse.

At Bonnaroo in Manchester, Tenn., the consequences were more serious. In June 2025, organizers suspended shows, evacuated the main Centeroo area, and canceled the rest of the festival after one day. They cited significant, steady rain expected to create deteriorating camping and exit conditions over the following days. Campers whose sites were still in good shape were asked to stay overnight so staff could escort them out safely the next day.

Together, these events show why weather preparedness extends beyond having a forecast. Conditions can require event teams to suspend activities, alter programs, evacuate attendees, or cancel altogether. Defined decision thresholds, evacuation procedures, communication plans, and reliable weather intelligence help teams respond as conditions change.



Why Weather-Related Safety Plans Are Essential for Outdoor Events

Lightning, heavy rain, wind, and heat raise different problems for an outdoor event. Three factors shape how a team responds to conditions like these.

Factor 1.

Protect people throughout the event

Include attendees, performers, staff, and contractors in the weather plan. Consider how crowd location or site access could affect the response.

Factor 2.

Give clear instructions when conditions change

Tell people what is changing, what they should do, and where further information will be available. Keep instructions consistent across staff briefings, announcements, and digital channels. Account for visitors who do not know the venue and for the languages and accessibility needs of your audience.

Factor 3.

Make weather part of operational planning

An outdoor performance area, campsite, and public viewing area may face different risks, even when they share the same forecast. Weather can affect infrastructure, crowd movement, staffing, logistics, and site access in different ways across the same event.

Heavy rain may affect vehicle access, parking, or evacuation routes. Wind may affect temporary structures and exposed areas. Heat may require additional water, shade, staffing, or medical support.

Venue and site-design guidance highlights ground load-bearing capacity, structural anchoring, flooding, wind exposure, and safe access for vehicles and pedestrians. Consider these factors when positioning temporary infrastructure and planning how people will move around a site.

Understanding these risks is the first step. The next is creating a plan that defines when to act, who decides, and how responses are carried out.



How to Plan Protective Action and Manage Weather Risk

A weather plan is only useful if people know when to act and what to do next. Each action should have a clear trigger, identified decision-makers, and a documented process for communication and implementation.

1. Establish thresholds for your event and site

Define the conditions that require action. A threshold for closing an exposed stage may differ from one used to modify admissions, suspend activities, or move people to shelter.

2. Plan how you will activate each response

Define who can make decisions, who provides advice, and how actions are carried out. Identify deputies and escalation paths that remain workable during busy periods and shift changes.

3. Document the communications process

Define how decisions are communicated to staff, contractors, performers, vendors, and attendees. Include backup methods when primary communication channels are unavailable.

4. Prepare and brief the team

Review the plan with the people responsible for carrying it out. Test how information moves from weather monitoring to decision-making and from decision-making to execution.



How Decision-Grade Weather Intelligence Supports Safer Operational Decisions

Useful weather intelligence provides lead time and context to evaluate established thresholds and implement pre-agreed actions. It helps teams assess potential impacts while recognising that forecasts contain uncertainty.

Preserve time to act

Make monitoring a continuous process. Track forecast changes alongside site conditions rather than relying on isolated checks.

Early warning gives teams time to prepare, communicate, and consider staged responses while several options remain available. An alert should prompt the agreed evaluation and action process.

Keep the team working from the same information

Give decision-makers a shared view of changing conditions and the actions underway. Record the information considered, the decision, the time, and the next review point.

Review decisions and improve the plan

After the event, assess whether monitoring, communications, and response arrangements worked as intended. Use the findings to update procedures and brief the next team.



Weather Intelligence at Work

DTN Weather Hub brings location-specific weather intelligence, alerts, and meteorological expertise into event planning and operations. DTN Weather Hub helps you:

Plan for heat stress

Wet Bulb Globe Temperature forecasts and customised alerts help teams assess heat-related conditions. Connect those insights to the heat measures in your event plan.

Understand when and where severe weather may affect your event

Use forecasts, storm information, and expert guidance to assess potential disruption. Prioritise the hazards relevant to your location, including lightning, damaging wind, hail, intense rainfall, and heat.

Connect lightning information to planned action

Lightning detection and alerting support timely decisions at monitored locations. Link site-specific alert zones to pre-agreed procedures.

Work with meteorological expertise

DTN provides on-site or remote meteorological support to help teams interpret changing weather and its operational implications.

Explore DTN Weather Hub

