



A BUYING GUIDE FOR  
AIRPORT OPERATIONS

# Conquering Today's Aviation Challenges with Weather Services & Alert Solutions

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## Introduction

At AEM, our goal is to empower organizations to survive – and thrive – in the face of escalating environmental risks. When it comes to aviation, that means helping the industry maximize operational continuity and safety, even as changing weather patterns make life more difficult than ever when it comes to operating airports and airlines in a satisfying, profitable manner.

We're extremely proud to have established a reputation as a go-to advisor and support system for future-facing airports and airlines across the country. We understand that, in the world of aviation, profits and reputation are made and lost based on daily decisions around weather.

This guide is designed to illustrate how we help airports and carriers increase weather-readiness by aligning solutions from our portfolio of brands with growing daily challenges.

If you have any questions about the content of this guide or what solutions to your weather risk management challenges might look like, you can [contact us to talk with an aviation specialist](#).





# Challenge 1: Weather-responsive management

## Understanding the challenge:

### TRANSLATING DATA INTO ACTION





With the right weather and lightning intelligence, you'll know what's headed your way moment to moment, but that information is useless if you can't get it to the people for whom it is most relevant.

In order to maximize ground crews' impact, safety, and ability to maintain the schedule, airports and airlines need a strategy to get weather alerts in employees' hands in the right moment.

### CREATING RELIABLE, REPEATABLE, CLEAR PROTOCOLS

Again, even the best data has minimal impact when people don't know what to do with it. In order for weather-responsive management to work, alerts on incoming conditions need to reach employees in a clear, highly digestible way that's tied to protocols and operating procedures from your safety plan. The less people need to think, the faster they can get to safety as needed and resume work when possible.

## What a solution looks like:

- 1** You establish safety limits for lightning proximity, wind speed, etc. 
- 2** Network-based monitoring tracks incoming weather 
- 3** Employees get weather alerts via text message at the right moment 
- 4** Visible strobes and audible horns make alerts unmissable 
- 5** Employees get an "all clear" message when the event passes 

## Our customers say...



We can customize alerts that are sent out across the system in the event of thunderstorms, high winds, cold temperatures, and lightning. It's one tool we use that allows us to communicate throughout the system of any impending weather systems that maybe approaching one of our cities.



— Kevin Crowley,  
Ground Safety Programs | JetBlue Airways



## How AEM does it:

AEM's weather maps and software provide a single source of truth for weather intelligence, creating a clear, consistent framework for operational decision-making, business continuity, and worker safety.



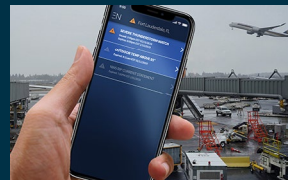
Sferic Maps® for storm tracking and lightning visualization



Earth Networks Total Lightning Network® for intelligence



u[sonic] WS7 multi-weather sensor for on-premises monitoring (optional)



Sferic Connect app for automated employee alerts & all-clears



Area alerting to create audible/visible alarms indoors & outdoors

## Challenge 2: Tarmac & runway weather monitoring

### Understanding the challenge:

#### MAXIMIZING YEAR-ROUND SAFETY ON THE TARMAC

In regions where there's icy or snow winter weather, the tarmac can easily become unsafe for work, not to mention the potential for icing on runways. While roads aren't the first thing that comes to mind when people think of aviation, understanding pavement conditions is key to worker safety and customer experience at the airport.

#### RISING WATER AS THE NEW NORMAL FOR COASTAL AIRPORTS

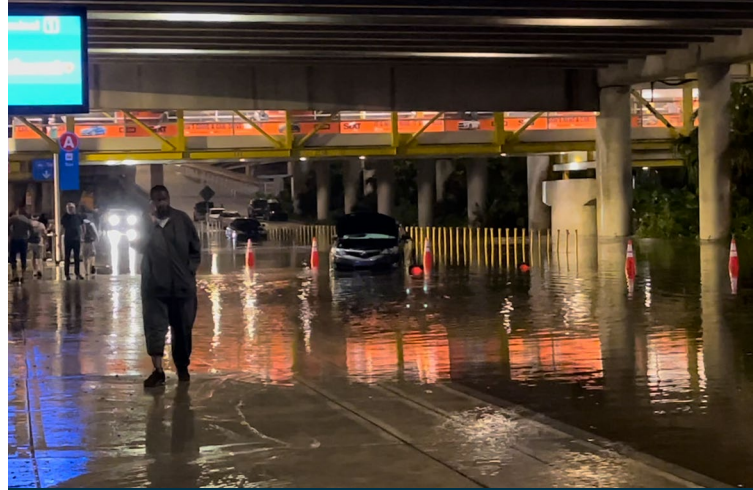
As we saw at Tampa International Airport in April of 2023, flash flooding can significantly impact ground crew, public safety, and even operations within the airport. For coastal airports, whose runways are often right at or just above sea level, similar events will only become more commonplace.

### What a solution looks like:

- 1** We install in-ground temperature sensors in your runways and tarmac 
- 2** We build a simple monitoring dashboard for your team 
- 3** Your team gets alerts about ice on the tarmac and roads, as well as rising water levels 
- 4** Automated beacons and signage alert the public as needed 
- 5** Your public safety & facilities teams lead a data-driven response 

### The research says...

According to Newcastle University research, even if Paris Agreement thresholds are maintained, at least 100 coastal airports around the world will be below mean sea level by 2100. If global mean temperatures exceed the two-degree Celsius increase, close to 600 airports will be at risk of regular flooding.



### How AEM does it:

We help airports understand their growing flood risks through hyperlocal monitoring with built-in automated alerts. We can use much of the same infrastructure to improve winter weather awareness on airport roads and runways as well.



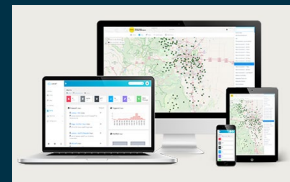
StormLink® Road  
Weather Information  
System for monitoring



ALERT2 High Water  
Detection System for  
level monitoring



Mobile ice  
and pavement  
monitoring sensor



Contrail® software  
for data review & alerting



Advanced Warning  
Station for automated  
road closures

## Challenge 3: Short-term forecasting

### Understanding the challenge:

#### DAILY OPERATIONAL EFFICIENCY & SAFETY

The weather presents challenges at the airport every day, but with the right approach to weather intelligence, forecasting, and operational resiliency, you can minimize those impacts to provide the best possible service continuity for your customer while keeping your employees on the ground safe from lightning, hail, potential slips, and beyond.

#### SEVERE WEATHER EVENT RESILIENCE

Major weather events like thunderstorms, winter storms, tropical storms, and floods have the ability to send operations at the airport to a grinding halt in the name of safety. With that said, the way you prepare for and respond immediately after major weather events directly affects to your ability to maximize operational continuity and deliver services in a way that keeps everybody happy and safe.

### What a solution looks like:

- 1 A dedicated weather expert provides you with high-accuracy forecasts 
- 2 Your in-house risk and operations teams gain better insights 
- 3 You contact your meteorologist on demand as needed 
- 4 Your services professional helps you plan for major weather events 
- 5 You keep the public & employees safer while maximizing continuity 

### Our customers say...



The automated weather solution... provides real-time intelligence we need to make more informed weather-related decisions. And most importantly, it helps us plan for severe weather and improve our operational efficiency tremendously.



— Mark Sprague,  
C.M. Deputy Director of Airport Operations & Facilities  
St. Pete–Clearwater International Airport

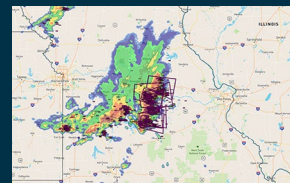


### How AEM does it:

AEM's Meteorological Services Team provides 24/7 support to public and private customers across the U.S. and world. We provide each customer with a white glove experience that includes:



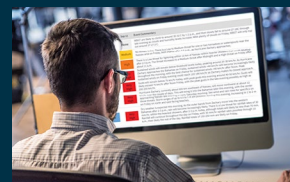
A dedicated human point of contact who understands your needs



Forecasts created for your specific work or service area(s)



24/7 on-call support for forecasting & interpretation



Custom weather dashboards for operations & risk management



Tailored support before, during, and after major weather events



# Work with a Weather Team that Understands Aviation

If you're looking for a weather services and monitoring partner with a proven vision and track record in the aviation industry, AEM is here to help. Our solutions help airports and airlines around the world keep their employees safe and customers satisfied on a daily basis.

Whether you're facing increasing weather challenges, trying to stay ahead of the problem before it reaches you, or even seeking an audit of your current approach with an eye towards improvement, our team of aviation specialists can provide you with a personalized roadmap to severe weather resilience.



From Randy Smith, our aviation specialist, down to the national outlook for weather that [they] send us via email... the tech support and the behind-the-scenes crew has been nothing but awesome. Thank you for your product and for keeping our airline safe!

— Kevin Crowley,  
Ground Safety Programs  
JetBlue Airways



Ready to take the next step forward? It's time to contact an AEM **aviation specialist** to start your journey towards improved operational continuity and weather readiness.

Contact Us

# More Resources for Aviation



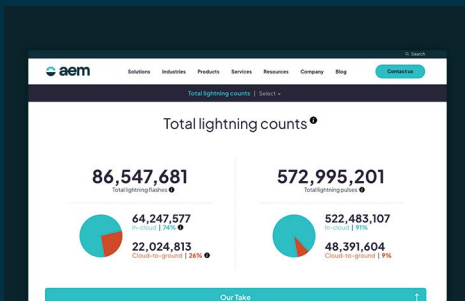
## WEATHER MANAGEMENT SOLUTIONS FOR AIRPORT OPERATIONS

- Learn more about the solutions & technology explored in this guide
- Dive deeper into today's weather challenges & solution opportunities
- Get weather risk management planning tools that help you self-assess



## HOW JETBLUE AIRWAYS MANAGES SEVERE WEATHER

- Hear directly from an AEM aviation customer
- Learn how JetBlue has strengthened weather risk management
- See the advantage of working with AEM



## 2023 U.S. LIGHTNING REPORT

- See the power & potential of AEM's Earth Networks Total Lightning Network
- Get state- and county-level insights into lightning counts and density
- Connect with insights from our lightning research & development team



## 2022 STATE OF FLOOD RISK MANAGEMENT REPORT

- Understand the growing threat flooding poses for businesses
- See how floods translate to operational & financial disruption
- Learn more about leading approaches to flood monitoring & resilience



## AEM AIRPORT OPERATIONS OVERVIEW

- Get a one-page distillation of our POV on aviation
- See how you can minimize operational downtime & delays
- Learn more about how our on-call meteorologists give you an edge



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#### CONTACT US

**Talk to an aviation specialist**

