

Boosting lightning safety and awareness in a Colorado park

Case Study



The client:

City of Centennial,
Colorado, USA

Vaisala solution:

Thunderstorm Manager

Lightning relay alert system

How the City of Centennial improved public safety with innovative Vaisala technology

Centennial Center Park is the crown jewel of the City of Centennial, Colorado. Opened in 2012, the award-winning park boasts casual and educational walkways, open recreational space, reservable picnic and event areas, an amphitheater, playground and splash pad spread over 15 acres.

The busy park sees about 1,000 visitors every day during the summer, and Centennial is dedicated to maintaining its beauty, usability, and safety year-round.

THE CHALLENGE:

Ensuring public safety when lightning approaches

This area of Colorado – the Front Range – is known for its temperate climate as well as its extreme weather events. In the spring and summer, for example, storm clouds frequently build over the mountains in the morning and bring brief but powerful storms in the afternoon with lightning and rain.

Lightning is a major safety risk, and park visitors can be caught off guard by the sudden approach of a storm. Centennial had been using general weather alerts for approaching storms to pause or cancel major park events to protect public safety. The City decided to move beyond this approach by implementing an automated lightning alert system that would warn visitors anytime lightning was close by.

"The lightning relay alert system is a big win for everyone. Not only was it easy to implement and affordable, it provides an automated, real-time solution that helps keep the public safe even when staff is not onsite. We highly recommend it for splash pads, pools and other public gathering spaces."

*Jonah Schneider
Strategic Initiatives Manager, City of Centennial*

THE APPROACH:

An innovative approach to automated lightning alerts

Centennial launched an initiative through the Colorado Smart Cities Alliance, which combines the efforts of leaders in the public, private and academic sectors. Their mission is to accelerate "the adoption of smart cities technologies, projects and initiatives in their respective communities."

Under the Alliance's Community Resilience challenge, the City selected Vaisala to create an automated lightning relay alert system for Centennial Center Park. The innovative solution integrates the world's most accurate lightning detection data with plug-and-play hardware and an easy SIM card connection, eliminating the need for an internet connection.

Vaisala Thunderstorm Manager provides real-time lightning data, radar data, short-term lightning forecasts, and IR satellite data for complete situational awareness. This browser-based solution ties into Vaisala's National Lightning Detection Network (Global Lightning Dataset GLD360 outside the U.S.) and provides lightning strike accuracy down to a few hundred feet.

Once Vaisala engineers preconfigured alert lights and audible tones, City staff was able to quickly install the alert system hardware to inform visitors

of a pending lightning threat. The solution is carefully tuned to be active only during park hours, and loud enough for everyone in the park to hear without disturbing nearby residents. Prominent signage informs the public on what the lights and tones mean, so they can take action based on the threat of severe weather.

THE RESULTS:

Powerful, accurate and cost-effective

Public safety is top priority for Centennial, and today its flagship park has increased safety measures to protect visitors from the threat of lightning. By integrating Thunderstorm Manager with visual and audio alerts, the lightning relay alert system provides actionable, real-time data that can save lives.

In addition to collecting historical lightning information for future insights, City decision makers can use the real-time data to inform emergency crews of dangerous storms or to shut down a summer concert event.

The always-on configuration gives the City of Centennial peace of mind – no more relying on general forecasts just for special events. The City is also pleased with the simplicity and affordability of the solution, which makes it attractive and feasible for many applications such as community pools and sports fields, allowing visitors to focus on enjoying outdoor activities.

Why Vaisala?

As the global leader in weather and environmental measurements, Vaisala empowers businesses and community leaders to build resilience to climate change and extreme weather events. Our 85+ years of expertise is grounded in science, innovation and our unwavering commitment to constantly evolving.

We boldly demonstrate that a culture of resilience and a connection to nature can create new ways of smarter, resilient living. We are champions for smarter, safer and more sustainable urban communities.

