Summer 2021

Weather outlook

UK/Ireland edition

Forecast summary

There are a few striking weather trends that could have sizable implications on numerous industries this summer. Most notably, we expect cooler and wetter than normal conditions across northern Europe, including the British Isles. Frequent low pressure nearby or overhead will bring the threat of thundery weather throughout the season.

Whereas in the south and southeast regions of Europe, the summer will mostly remain locked in above-average temperatures. In terms of rainfall, expect to see periods of dry air, specifically in June and July, as the likelihood of Atlantic high pressure will become occasionally dominant, pushing lows to the east. Although later in the summer, during July and August, we may see a growing risk of brief, thundery heat waves if highs build to the north or east.

While the forecast initially called for warmer, drier signals in the early part of summer — and the first half of June reflected that — those indications have disappeared. There is a much more robust signal for the cool, wet anomalies from the spring to persist through the summer, starting in later June. The British Isles may even see some sub-seasonal volatility — especially in temperatures — with a growing risk for some brief heat waves in July and possibly August.

15% risk

If the subtropical ridge shifts into central-eastern Europe more widely, as some models suggest, we will see a much warmer pattern with heat moving in from the south more frequently, often accompanied by thundery days.

25% risk

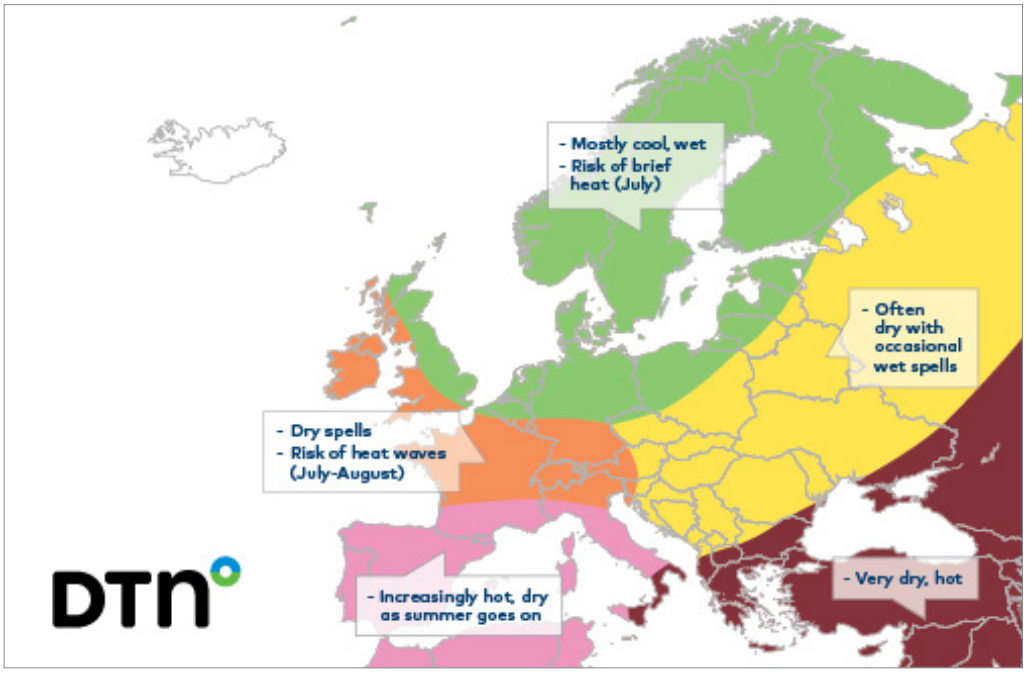
If too much high pressure builds north of Europe, then drier weather will be more likely throughout the summer. Although there is still a risk of wetter periods in southern areas, it will be cooler than normal in this pattern.

Contents

Summer 2021 outlook

The main drivers of the hemispheric weather patterns are likely the tropical and northern mid-latitude sea surface temperatures in both the Pacific and Atlantic oceans, which are helpful indicators for this season's temperatures. Another seasonal driver is La Niña, which is weakening in the equatorial East Pacific. However, the El Niño-Southern Oscillation (ENSO) Index is expected to be neutral through summer, trend negative again in autumn, and create a second La Niña next winter. This is typical for a La Niña pattern, and statistically, there tends to be two-year La Niña events. Finally, blocking in the Arctic is helping to produce a trough in northern Europe that will likely be a persistent feature, amplifying the conditions for a ridge of high pressure near Turkey and the Middle East.

Looking month by month, May ended in a cooler, wetter pattern. After a warmer, drier first half of June, we expect that cooler, wetter weather to return as high pressure eases and shifts west into the Atlantic. The monthly average may be near or a bit above average, thanks to the month's warm start.



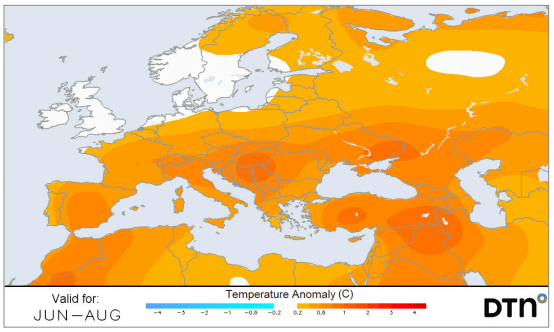
Summer 2021 European weather outlook map.

July brings more uncertainty with some conflicting weather patterns that will be dependent on early-summer developments. However, there is a growing risk of high pressure shifting into central or east Europe through July, resulting in more changeable weather and sub-seasonal volatility. This will likely take the form of brief heat waves as southerly winds develop and transport Spanish or Algerian air into the British Isles. Scotland and northern areas may not be able to tap into the heat, depending on how far southwest the low-pressure trough drifts.

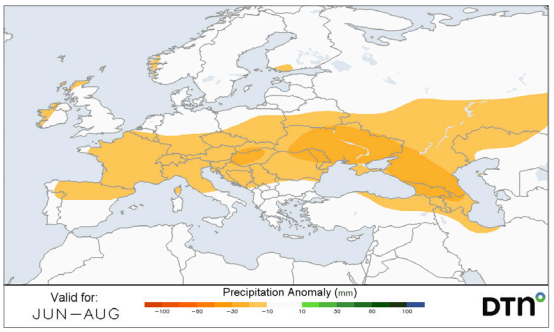
In August there are better signals for a more persistent low-pressure trough to lie overhead. This will continue to displace the jet stream to the south, keeping things wetter and cooler than normal, although not especially windy. There is still a risk for occasional heat waves in August, but less so than in July.

A final consideration is the development of some sub-seasonal factors throughout the entire summer. These will be short-lived events — typically less than a month long — but more difficult to pin down to a specific time frame. These events may result if tropical thunderstorm clusters develop, which move around and disrupt the jet stream in the North Atlantic and Europe, leading to north/south fluctuations and shifting pressure systems around, causing potential disruptions.

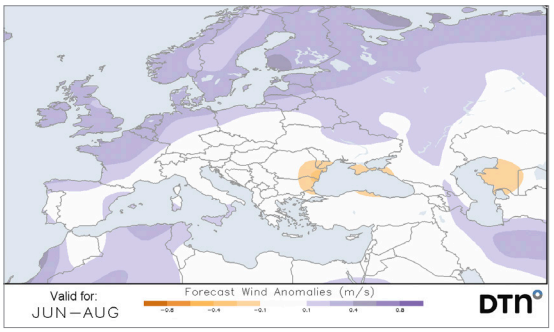
We saw this back in March and April, which led to a bit of disruption for UK weather and the original forecasts. These events may occur throughout the entire summer, so it's something to keep in mind. As the lows shift around, we could see another sub-seasonal factor called a Spanish plume. The event occurs when the lows shift into the west and high pressure starts building in Central Europe, bringing warm air north from Spain. Most extremely warm UK summer days are associated with Spanish plumes. They can lead to short heat waves and severe storms, which can last a few days.



Summer seasonal temperature anomalies map.



Summer seasonal precipitation anomalies map.



Summer seasonal wind anomalies map.

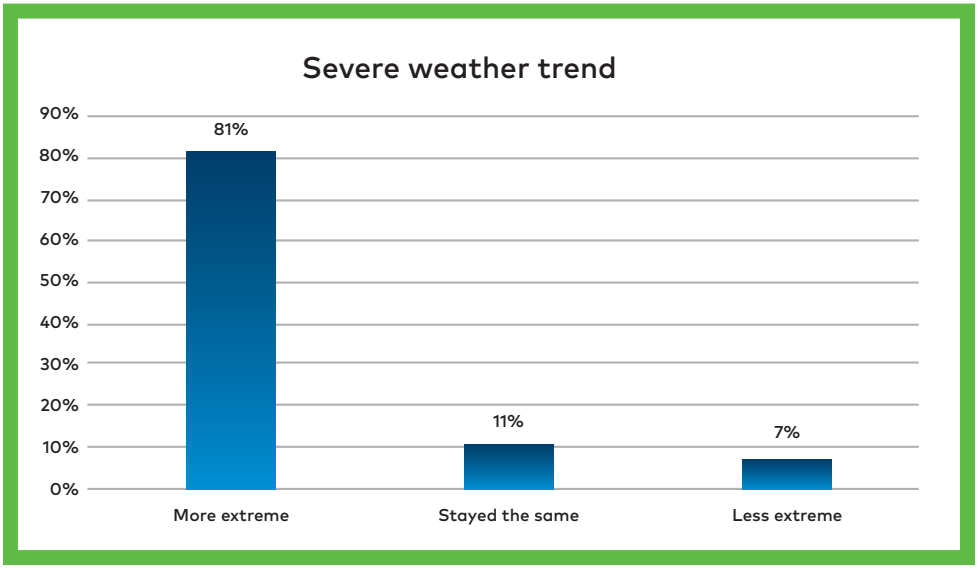
Industry thoughts on severe weather

During our summer weather outlook webinar, we asked our attendees if they felt severe weather has become more extreme, stayed the same, or is less extreme. Across all industries, there were 41 participants.

Question 1:

How has severe weather developed in the past years?

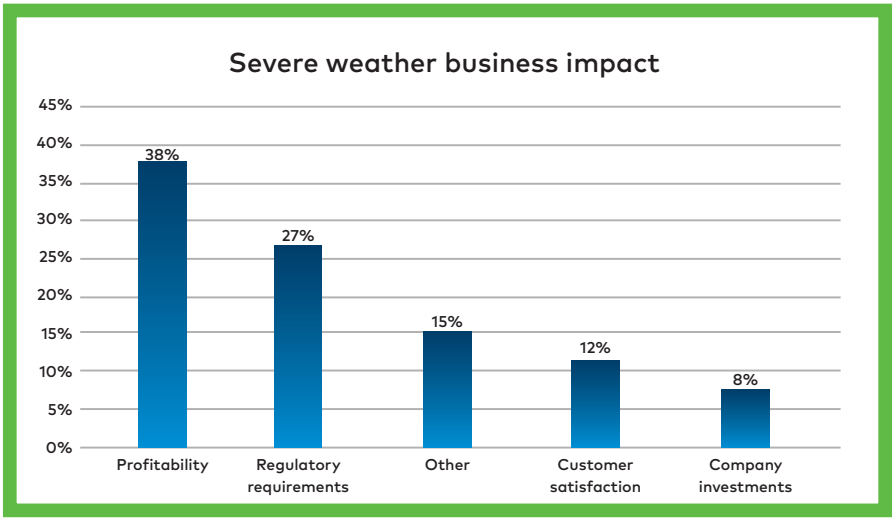
The majority of respondents (81%) felt that severe weather has been trending to be more extreme. Only 7% replied that severe weather has become less extreme.



Question 2:

In which areas has weather impacted your business over the past years?

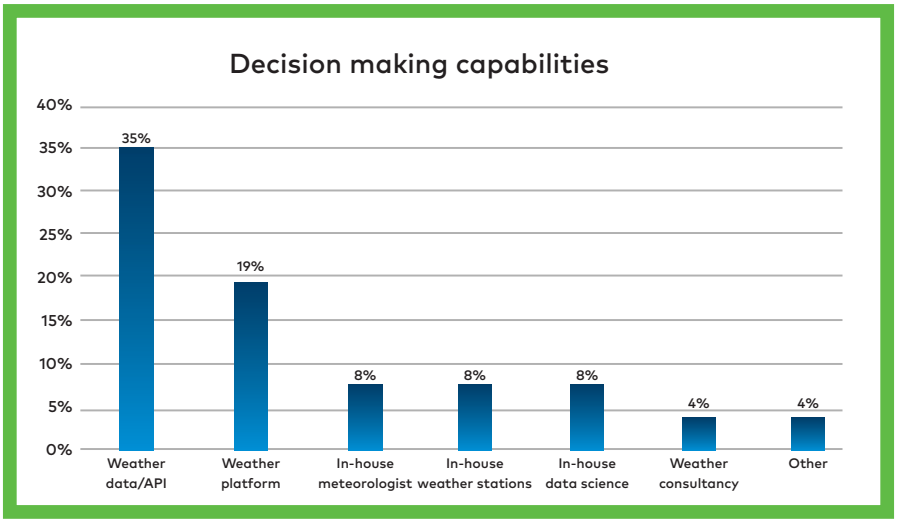
Respondents selected all that applied from multiple answers. Across all sectors, profitability was by far the largest impact, chosen by 38% of respondents. Regulatory requirements was second with 27%. Least impacted was company investments, with 8% of the responses.



Question 3:

What capabilities does your business have in place addressing the impact of severe weather?

Once again, respondents selected all that applied. Most have an external weather decision-making capability in place, like external weather data feeds (35%) or an external weather company platform (19%). Just 8% have internal meteorologists, weather stations, or other data science capabilities.



Return to contents page

Utilities discussion

Forecast summary

There are a few potential summer weather challenges that may impact personnel and infrastructure and lead to outages. One notable weather impact will be variable temperatures, which will be below-average much of the summer with short-lived shots of warmth from the increased opportunity for Spanish plume events. The second potential set of weather challenges is related to possible above-average rainfall. Flash flooding from thundery outbreaks, as well as river flooding from slow-moving depressions, could impact operations. Another is the elevated risk of lightning activity in the unsettled air. For example, from the end of April through the end of May this year, lightning was observed just about every single day across Europe. Finally, there is potential for high winds from the summer lows and tropical activity.

Given the forecast, utilities must prepare for a variety of potential impacts this summer, from lightning to heavy rain to wind events. In terms of personnel safety, lightning risks will be elevated — which can also impact infrastructure. This summer's hot spells will raise the possibility of heat-driven faults, such as line-sagging and potential capacity issues. Access issues and infrastructure risks could occur during heavy rainfall events that can bring about flash floods, river flooding, or landslides — all of which can impact personnel and infrastructure. Finally, with any wind events, there's the potential for wind-driven faults and impacts on telemetry, particularly with trees in full-leaf. Wind also can impact demand, as it's possible to see low demand because of high wind generation.

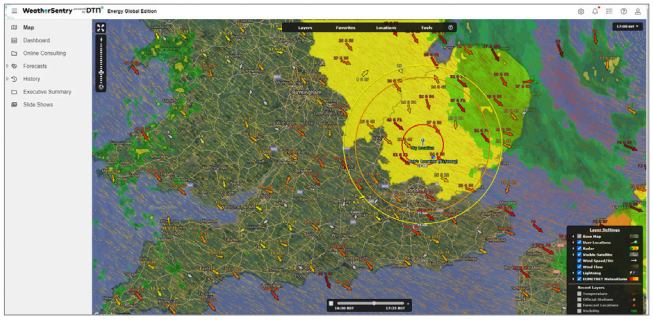
Weather impacts at-a-glance

- Variable temperatures
- Above-average rainfall
- Increased lightning
- High winds

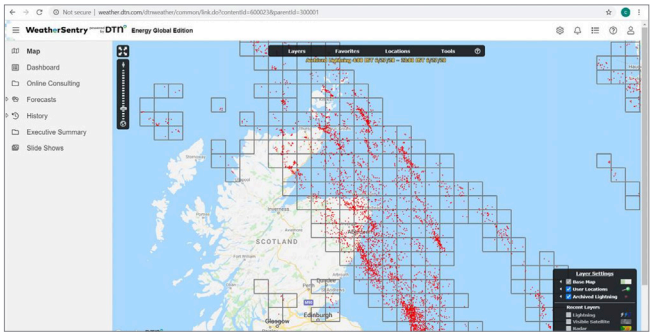
Risk management tools

While this summer's potential challenges may feel substantial there are solutions available to help you ensure safe, efficient operations. First, business-grade, sub-seasonal forecasts deliver critical information about expected conditions, week by week, allowing you to identify and plan for threats. As a potential event gets closer, control room managers, field engineers, safety managers, and others can check the forecast's day-to-day and hour-to-hour details. That's where WeatherSentry® adds value.

WeatherSentry delivers real-time information to the control room and mobile devices of managers in the field, ensuring everyone has the same forecast and alerting information to help them monitor threats to personnel and assets. It also includes lightning detection capabilities, showing current and historical strikes, which can support multiple applications. This can be especially helpful when sharing post-storm data with regulators. The data can also be incorporated into a lightning inspection tool that allows users to pre-load the precise locations of assets, such as wind turbines, to reveal if they may have been impacted by a lightning strike. This allows for a targeted approach to inspections, saving time and money during the maintenance and restoration process. Utilities that focus on weather preparedness will protect, not only personnel and assets, but the bottom line.



Better visualize and manage storm impacts with detailed weather maps featuring critical conditions like current radar, lightning strikes, and wind flow, speed, and direction.



Lightning strike data supports targeted, post-storm asset inspections, which can help minimize outage time through faster restoration.

Ensure reliable service and stakeholder trust

Take a closer look at WeatherSentry to learn more ways it can support your operations by clicking here.

Aviation discussion

Forecast summary

As flight operations slowly climb back toward pre-COVID levels, managing efficiencies will be essential to ensuring safe, smooth operations on the ramp and in the air. This summer's weather will have its own challenges for the aviation industry, and there are a couple of key events where targeted weather insights will be essential.

The biggest challenge this summer will be the uncertainty of its conditions — or at least their changeability. Most of Europe will see cooler and unsettled weather throughout the summer. As in most summers, there may be brief, but intense, periods of stormy weather that can impact the timeliness and safety of aviation operations. If there are intense Atlantic lows coming over the UK and Ireland, gales will also be an issue. From an aviation perspective, these conditions will bring about the usual risks associated with thunderstorms, along with infrastructure flooding and runway crosswinds.

Thunderstorm activity

When we think about the impact of thunderstorm activity on European airports, contingency and disruption planning for a variety of settings and situations is a must. These include managing TMA and port traffic flow, anticipating ramp closures and openings, and protecting employees and passengers, equipment, facilities, and aircraft. Having access to real-time, accurate weather insights can help drive informed decisions.

Weather impacts at-a-glance

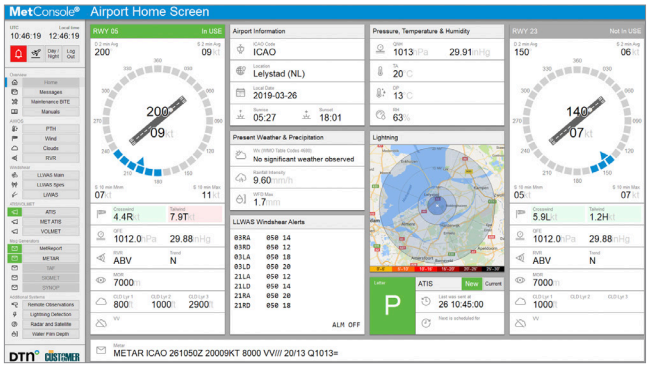
- Variable temperatures
- Above-average rainfall
- Increased lightning
- High winds

It's critical to have a tool that accurately tracks a storm's momentum and strength, enabling the correct decision-making processes and procedures. Likewise, better data means better decisions and the MetConsole® platform supports the process. A comprehensive, real-time weather data management solution, it provides insights for thunderstorms and other weather events and provides a wide range of functionality that can be customized for any use and situation. If there are other data sources being used, they can be easily integrated into MetConsole for greater ease of use. The platform makes it easy to implement weather response protocols, contributing to operational efficiencies and providing staff the flexibility to adapt in real time.

One specific feature that operations teams will find useful this summer is the water film depth feature. It warns air traffic control and pilots of aquaplaning risks during takeoff and landing. Rather than pavement sensors, it uses real-time rainfall and intensity data to create water depth estimations on the pavement. It's highly dynamic and can be fully customized.

Increased wind shear potential

Increased potential for wind shear is another critical impact to monitor this summer. An aircraft moving sideways is always unsettling — especially for its passengers and crew. Along with the risk of gales from Atlantic lows and microbursts and down drafts from thunderstorms, wind shear risk is high with the potential for significant effects on traffic flow and flying program recovery. Within MetConsole LLWAS — a module of WeatherSentry® — such events can be closely monitored. By collecting real-time wind speed and direction readings from a carefully placed array of runway wind observation stations, actionable data is gathered to support decisions that help minimize risks. The system offers fully-customizable wind shear alerts and warnings using increasingly cost-efficient LiDAR technology.



The MetConsole multiple data display screen allows users to more easily monitor relevant, critical information like wind shear, lightning, runway conditions, and more.

Deliver safer, more efficient flight operations

Take a closer look at the MetConsole platform to learn more ways it can support your operations by clicking here.

Sports & events discussion

Forecast summary

COVID restrictions are loosening across Europe, and soon sporting events and festivals will once again draw crowds. Based on the summer forecast, organizers must be ready to contend with a few weather risks on top of any remaining health and social distancing measures. Aside from protecting people, organizers must be prepared to manage potential operational challenges and disruptions to staff, like grounds people, venue managers, catering services, and more.

One particularly concerning weather challenge this summer will be an above-average lightning threat, which will require accurate forecasts and real-time lightning monitoring tools to keep people safe. There's also a risk of prolonged rainfall and flash flooding, which is often only accurately forecast with a short lead time. In this summer's unsettled conditions, it may be difficult to schedule reliable weather windows for pitch care and maintenance. Other conditions can cause concerns. For example, heat and humidity can threaten athlete health and performance, both during training and competitions. Attendee well-being and comfort could also be an issue.

Weather impacts at-a-glance

- Variable temperatures
- Above-average rainfall
- Increased lightning
- High winds

Risk management tools

Anyone operating weather-vulnerable events needs to closely monitor conditions — especially with the inevitable week-to-week variations that come with an unsettled summer, such as this one. Custom weather alerts, detailed, hyper-local forecasts, and easy-to-use risk management tools will be essential to ensuring safe, efficient event operations. What's more, they should be accessible to multiple team members across your organization, whether you manage a single location or event or several. Our industry-leading WeatherSentry® solution provides these capabilities and more.

Another helpful tool within WeatherSentry is its daily planner, which is customizable to your operations and updated with real-time data from our forecast system. It provides a simple, traffic-light approach that helps facilitate confident decisions and provides a consistent view for all users.

To help you make more accurate decisions around heat safety, WeatherSentry provides Wet Bulb Globe Temperature (WBGT) information. WBGT measures heat stress in direct sunlight and accurately estimates the effect of temperature, humidity, wind speed, and solar radiation on the human body. Such insight is vital to making the correct call when it comes to the safety of athletes or event attendees.

Lastly, mobile access is essential. WeatherSentry can deliver real-time alerts and warnings to multiple users across your organization, allowing them to take the appropriate, agreed-upon actions to help mitigate weather risks.

WeatherSentry

Daily Planner

Issued: Jun 26, 2020 12:00:00 PM (CDT)

Daily Summary

Weather Threats	Fri Jun 26	Sat Jun 27	Sun Jun 28	Mon Jun 29	Tue Jun 30	Wed Jul 1
Daily Weather Condition						
Maximum Temperature (F)	95	87	90	95	91	90
Minimum Temperature (F)	76	73	72	76	77	75
Daily Average Dew Point (F)	66	69	70	70	70	70
Daily Maximum Wind Speed (mph)	14	10	7	LV	6	8
Daily Probability of Precipitation (%)	20	70	80	80	65	66
Daily Precipitation Amount (in.)	0.01	0.52	1.35	0.02	0.54	0.24
Daily Precipitation Type	Rain	Rain	Rain	Rain	Rain	Rain
Daily Ice Accumulation (in.)	-	-	-	-	-	-
Daily Snowfall (in.)	-	-	-	-	-	-

Time	Weather	Temperatures		Winds			Precipitation				
CDT	Cond.	Temp. (F)	Dew Pt. (F)	Dir	Spd. (mph)	Gust (mph)	Prob. (%)	Type	Amt. (in.)	Snow Amt. (in.)	Ice Amt. (in.)
Friday Jun 26, 2020											
01:00 PM	Partly Cloudy	91	67	SSW	10	-	-	-	0.0	0.0	0.0
02:00 PM	Sunny	92	65	SSW	13	23	-	-	0.0	0.0	0.0
03:00 PM	Sunny	93	64	SSW	13	23	-	-	0.0	0.0	0.0
04:00 PM	Sunny	95	64	SSW	13	23	-	-	0.0	0.0	0.0

A customized briefing tool sent right to your in-box, the daily weather planner is a fast, easy way to monitor weather conditions surrounding your event.

Keep the people in your care safe

Take a closer look at WeatherSentry to learn more ways it can support your operations by clicking here.

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