



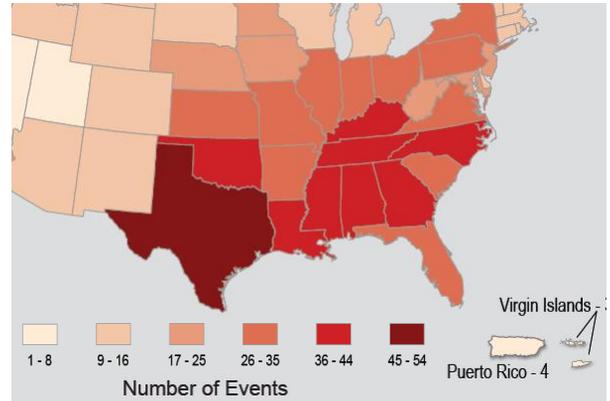
# How will climate change impact telecommunications & data center companies?

Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia, as well as Puerto Rico and the U.S. Virgin Islands.

From extreme storms to incremental change, telecommunications and data centers are already feeling the impact of a changing climate. These impacts threaten to disrupt their supply chains and operations as well as cause costly damage to assets and infrastructure of companies in both sectors. This fact sheet offers some first steps toward increasing companies' resilience to climate change in the Southeast.

## southeast

**Climate is changing and impacts on telecoms and data centers are already being felt.** Hurricane Sandy showed the devastating impact of extreme weather on telecommunications (see case study below).



Billion dollar weather/climate disasters between 1980-2012  
In recent years the Southeast has been affected by more billion-dollar disasters, such as hurricanes and winter storms, than any other US region. (NCA 2014)

**Temperatures are rising and hurricanes and extreme weather events are more common and severe in the Southeast.**

**The Southeast and Caribbean region is exceptionally vulnerable to climate change impacts.** This vulnerability is heightened by the region's population density (it is home to more than 80 million people and draws millions of tourists annually), as well as its status as the highest energy user in the US.

## case study

A severe weather event like Hurricane Katrina shows the potential impact of climate change on data centers and their customers. For example, a data center serving 128 New Orleans public schools was located on the fourth floor of an administrative building when Hurricane Katrina hit. The hurricane blew the air conditioning system off the roof and allowed rain to get in. When power was restored, there was no backup air conditioning, and the rainwater and heat corroded contacts on switches, while other equipment overheated and failed. Repairs to the data center cost in excess of \$3 million and took several months. To learn more about what one telecom is doing in the US to build its resilience, visit: <http://www.verizonwireless.com/aboutus/commitment/emergency-preparedness.html>

## global companies need resilient supply chains



The supply chains supporting telecoms and data centers are complex and face a wide range of potential impacts from climate change. Complexity means that climate impacts to one part of the supply chain in one region of the world can have consequences for other parts of the supply chain in other regions. Companies need to look for climate risks in each tier of their supply chain.

# Climate risks for telecommunications and data centers

# southeast

climate factors	potential impacts
Increases in maximum temperature	<ul style="list-style-type: none"><li>Higher frequency, duration, and intensity of heat waves create additional burdens on keeping equipment cool in data exchanges and base stations, resulting in increased failure rates</li><li>Increases in temperature can stress telecommunications equipment and infrastructure, reducing life span</li></ul>
Decreased water availability	<ul style="list-style-type: none"><li>Decreased precipitation may increase seasonal water scarcity, reducing the amount of water available for cooling</li></ul>
Increased frequency of extreme events	<ul style="list-style-type: none"><li>Increases the risk of disruption to the electricity supply on which telecommunications and data centers rely</li></ul>
Sea level rise	<ul style="list-style-type: none"><li>Increases in storm surges increase the risk of saline corrosion of coastal telecommunications infrastructure</li><li>Leads to erosion or inundation of coastal and underground infrastructure</li></ul>

## determine adaptive capacity

Use this checklist to start assessing how resilient your business is to less predictable weather and a changing climate.

- ✓ What backups and contingencies do you have in place to protect vital assets or operations?
- ✓ What financial options do you have in place that allow you to rebound from disruptions or change?
- ✓ How have past disruptions or extreme events impacted your business?
- ✓ Do critical tiers of your supply chain have redundancies in place to serve as backups?
- ✓ What are your business planning time frames?
- ✓ What shared infrastructure do you have?
- ✓ What is the rate of technological development and what are infrastructure lifespans? Shorter lifespans provide flexibility to respond quickly to changes in climate.

## learn more

The full report, *Climate Risks Study for Telecommunications and Data Center Services*, is available at [www.sftool.gov](http://www.sftool.gov)

The National Climate Assessment has more figures and details about climate change in your region at [nca2014.globalchange.gov](http://nca2014.globalchange.gov)

Questions? Please email [adaptation@gsa.gov](mailto:adaptation@gsa.gov) or visit [www.gsa.gov/climateadaptation](http://www.gsa.gov/climateadaptation)

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## assess response strategies

There are many ways to build resilience. Here are some initial responses to consider.

- *Decouple communication infrastructure from the electric grid* where possible, for example, with microgrids.
- *Move equipment out of basements or ground floors in areas at risk of flooding*, or put them on rolling carts
- *Relocate or fortify* critical telecom assets such as terminals, cell towers, power facilities, or central offices out of existing and future floodplains, as well as out of coastal areas threatened by sea level rise or storm surges.
- *Explore ways to increase water efficiency or identify new water sources for cooling data centers*
- *Identify resilient energy synergies.* Energy efficiency strategies not only reduce emissions but also lower your dependency on the electricity grid, which can suffer due to increased energy demand during heat waves and storm damage.

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