**TRN Resource: Resilience Attributes**

Resilience refers broadly to the ability to anticipate, prepare for, and adapt to changing conditions and to withstand, respond to, and recover rapidly from disruptions through adaptable and holistic resilience planning and technical solutions. Highly resilient systems have the ability to prevent disruption or reduce the magnitude or duration of disruptive events caused by hazards. The resilience of a system can be comprehensively characterized in terms of four attributes, resourcefulness, redundancy, robustness, and recovery[[1]](#footnote-1):

* **Resourcefulness**, or preparedness, is the ability to prepare for and manage a disruption, including identifying solutions, training, effective communication, and prioritizing actions to control and mitigate damage.
* **Redundancy** includes back-up resources and islandable onsite generation systems to support primary systems in case of failure.
* **Robustness** is the ability to maintain critical operations and functions during a disruptive event. This includes building and infrastructure design and system substitution capability.
* **Recovery** is the ability to return to normal operating conditions as quickly and efficiently as possible after a disruption.

1. U.S. Department of Homeland Security. National Infrastructure Advisory Council (NIAC). *Critical Infrastructure Resilience: Final Report and Recommendations*. September 2009. <https://www.cisa.gov/publication/niac-critical-infrastructure-resilience-final-report>. [↑](#footnote-ref-1)