Critical Communications Resiliency: When it has to work! March 19, 2025

IWCE
Connecting Critical Communications

#IWCE25

Introductions

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Agenda

- What is critical communications resiliency?
- What are the risk factors?
- Assessing sites for resiliency characteristics
- Mitigation approaches to address gaps identified in site assessments
- Roundtable Q&A
- Closing

Resiliency Enables Continuity Across Communications Ecosystems

- *"The ability to maintain voice and data communications at all times is critical for public safety agencies to perform their life-saving missions. By establishing resiliency measures, public safety communications can better withstand potential disruptions to service."*

[Communications and Cyber Resiliency Toolkit | CISA]

What's Covered in Critical Communications Resiliency?

- Wireless network equipment – transceivers and supporting equipment
- System interconnection, alternate routing, backhaul network equipment
- Network supporting devices, including routers, switches, servers
- Equipment enclosures including budlings, shelters, cabinets
- Environmental and security support systems
- Commercial, emergency standby power systems
- Antenna support structures, including towers, rooftops, and poles
- Physical security, including roads, gates, fences, and cameras
- All capability elements within the toolkit

What are the Resiliency Risk Factors?

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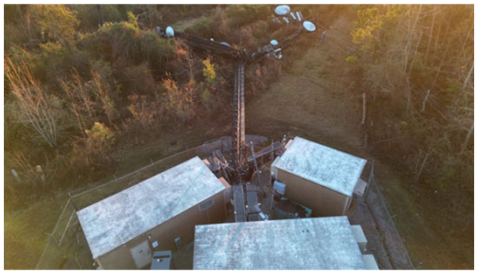
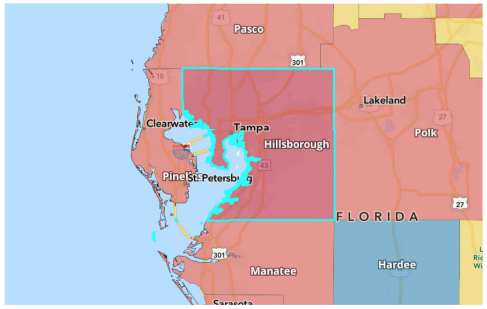
- Environmental
  - Wind, flood, fire, seismic, ice, nuclear
- Power
  - Grid failures, emergency power fuel supply, standby capacity
- Security
  - Physical, cyber, site access, and access control
- Resiliency
  - Tower structures & risk category, transport network(s), grounding and lightning protection



Your Environmental Risks Will Vary!

The Risk Index rating is **Very High** for **Hillsborough County, FL** when compared to the rest of the U.S.



Score **99.55**

National Percentile
99.55

Percentile Within Florida
95.50

0 100

100% of U.S. counties have a lower Risk Index

96% of counties in Florida have a lower Risk Index

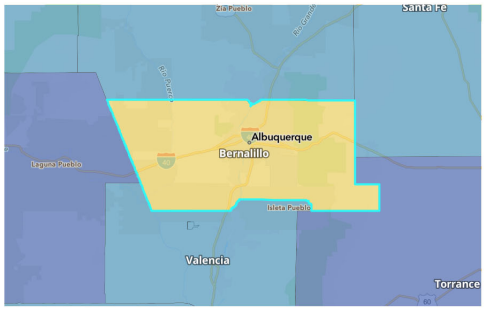
Hurricane: Very High - 99.8

Lightning: Very High - 99.9

Tornado: Very High - 99.7

Wildfire: Relatively High - 97.2

The Risk Index rating is **Relatively Moderate** for **Bernalillo County, NM** when compared to the rest of the U.S.



Score **89.47**

National Percentile
89.47

Percentile Within New Mexico
100.00

0 100

89% of U.S. counties have a lower Risk Index

100% of counties in New Mexico have a lower Risk Index

Drought*: Relatively Moderate - 83.0

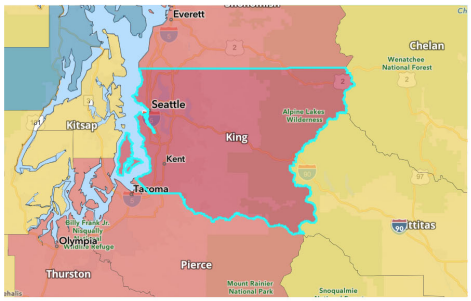
Earthquake: Relatively Moderate - 97.7

Hail: Relatively Moderate - 82.8

Landslide: Relatively Moderate - 86.7

Wildfire: Relatively Moderate - 86.4

The Risk Index rating is **Very High** for **King County, WA** when compared to the rest of the U.S.



Score **99.65**

National Percentile
99.65

Percentile Within Washington
100.00

0 100

100% of U.S. counties have a lower Risk Index

100% of counties in Washington have a lower Risk Index

Avalanche: Relatively High - 95.7

Earthquake: Very High - 99.8

Landslide: Relatively High - 97.0

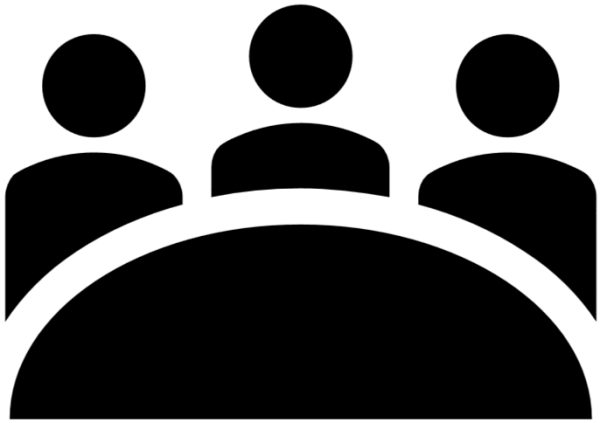
Volcanic Activity: Very High - 100.0

Ice Storm: Relatively Moderate- 64.0

Site Dependencies

As the threat environment expands, assessments must also review resource dependencies for a site to continue functioning and ensure continuity of operations.

Round Table Q&A



Closing

- Conduct Risk Analysis
  - Probability, impact, cost to mitigate, cost of NOT mitigating
- Identify site criticality/priority
  - Type of site, its age, location, and condition
  - Role in the continued operation of communications systems
  - Examples:
    - Core: Required for all system operations, a network control site
    - Critical: Critical to system operations, e.g., a primary microwave backhaul site
    - High-Criticality: Impact to system coverage or capacity; a radio site that serves a high population area
    - Medium-Criticality: Example – Site that serves a suburban area or a spur microwave site
    - Low-Criticality: A site in a low-population area or the last site in a microwave spur.
- Include other factors such as the needs of the agencies, calls for service, coverage gaps, redundancy, resiliency, population density, and population migration trends

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Resources

- FEMA national risk maps
  - Map | National Risk Index
- CISA Communications and Cyber Resiliency Toolkit
  - Communications and Cyber Resiliency Toolkit | CISA
- APCO ANSI/APCO Public Safety Grade Site Hardening Requirements
  - https://www.apcointl.org/~documents/standard

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