

Resilient emergency communications: Ensuring your emergency services can communicate when things go bad.

During an emergency, communications between response agencies is critical to build situational awareness, request or help and direct or coordinate action. Nothing happens without communication between entities. It is important to have effective and reliable communications capabilities in place before a disaster event.

A. Communication systems should be:

1. **Interoperable** - able to communicate within and across entities.
2. **Reliable** - able to function in the context of any kind of emergency.
3. **Scalable** - suitable for use on various sizes and complex incidents.
4. **Portable** - standardized radio technologies, protocols, and frequencies.
5. **Resilient** - able to perform despite damaged or lost infrastructure.
6. **Redundant** - able to use alternate methods when primary systems go out.

B. Types of Emergency Communications

1. **Telephone** – 2-way party-to-party electronic communications since 1876
 - a. **Landline** – transmission lines can be damaged; power lost at central office
 - b. **Cellular** – tower and equipment building can be damaged and power loss
 - c. **Satellite** – not effected by local disaster conditions; but can be impacted by solar storms, anti-satellite weapons and electronic signal attacks
 - d. **Voice over Internet Protocol** – must have reliable internet connectivity
2. **2-way radio** – reliable, flexible, wireless communications
 - a. **Land Mobile Radio** – 2-way radio used by public safety. May be analog or digital. Can be simplex (radio to radio) or duplex (radio thru repeater).
 - b. **Amateur Radio** – “When All Else Fails” 2-way radio service with the most redundant capabilities of any communication system.
 - c. **Radio over Internet Protocol (ROIP)** – like VOIP, must have reliable internet
3. **Internet-linked computers** – the most versatile data communication system today. Must have reliable internet connectivity and is susceptible to cyber-attack.

C. Conduct a full survey of your community emergency communication assets across all relevant agencies and develop a PACE plan for maintaining communications. PACE is an abbreviation for Primary, Alternate, Contingency and Emergency. See *2024 EMA PACE Plan Example*.

- D. Identify a primary and alternate communications staff member. Ensure both are fully trained in their communications responsibilities.
- E. Prepare alternative methods to recharge batteries for radio and satellite phone systems. Consider solar, windmill, or micro-hydro power systems for recharging batteries.
- F. Ensure that all relevant communications sites (including tower sites) have adequate back-up power generation capability. Back-up power generation should meet the standards set for critical infrastructure by the CISA Resilient Power Working group – RPWG at: (<https://www.cisa.gov/resources-tools/groups/resilient-power-working-group>)
- G. Maintain a hardcopy of contact information for critical personnel (Phone, Physical Address and Email). Have hard copies of contact information for key personnel from neighboring entities and the next level of government points of contact.
- H. Acquire and safely store spare batteries or battery chargers for your communication systems. If you believe your battery charger has digital circuitry, consider storing it in a small EMP bag.
- I. Use priority phone services like GETS (Government Emergency Telecommunications Service), WPS (Wireless Priority Service), and TSP (Telecommunications Service Priority).
 - 1. GETS allows a landline telephone service user to have a higher priority on use of the system when it is overloaded during an emergency. You can find more information on GETS at: <https://www.cisa.gov/resources-tools/services/government-emergency-telecommunications-service-gets>
 - 2. WPS allows a cellular telephone service user to have a higher priority on the use of the system when it is overloaded during an emergency. You can find more information on WPS at: <https://www.cisa.gov/resources-tools/services/wireless-priority-service-wps>
 - 3. The TSP program mandates that service providers prioritize voice and data circuits provisioning and restoration requests made by organizations with national security and emergency preparedness missions. You can find more information on TSP at: <https://www.cisa.gov/resources-tools/services/telecommunications-service-priority-tsp>