Oakland Community Preparedness & Response

Guide #22

EMERGENCY COMMUNICATIONS

Communications are crucial during and after a disaster, including being able to call for help, to coordinate response and to check on family members. Landline, IP and cell phone services may or may not be available in an emergency, while satellite phones and 2-way radios can provide more reliable means of communication. Having multiple ways to communicate is always best.

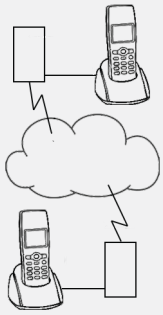
LANDLINE PHONE SERVICE is the old-fashioned Plain Old Telephone Service (POTS) that works over twisted copper wire. This is steadily being replaced by IP and cellular phone service. While some providers (e.g. AT&T) still support landline service, they no longer install it new. And in most cases if landline service is canceled, it cannot be restarted.

Landline phone service may work after a disaster or prolonged power outage if:

☐ the telephone lines are intact and the infrastructure downstream (e.g. switching center) still has power and is functioning

A simple corded phone with landline service is still considered desirable to have at home for an emergency, as it does not require power for the phone. Landline phones are likely to work after a disaster, but there's no guarantee.

IP (OR INTERNET PROTOCOL) PHONE SERVICE runs over the Internet. This is also referred to as VoIP (Voice over IP) service. This service is offered by Internet providers such as Comcast and AT&T. Regular phones plug into the Internet modem or gateway in the home. If a new phone service is installed, it will most likely be IP-based.



Internet service requires power for the modem or gateway. IP phones may work after a disaster or power outage if:

☐ there is home backup power from a generator, large storage battery, solar panels, etc, and;

☐ the cable, phone or fiber optic lines are still intact and the infrastructure down-stream still has power and is functioning

CELLULAR PHONE SERVICE relies on cellular towers that connect with cell phones via radio signals. Cell towers range from tall antennas with generator back-up to small antennas mounted on telephone poles with battery backup. During a prolonged power outage, these backup batteries will run down and service may be disrupted. Cell phones also need to stay charged.

Cell towers are designed to handle a certain number of connections and amount of data at one time. During or after a disaster, cell towers can become overloaded and service disrupted. Towers can also be damaged. You should not depend solely on cell phone service for emergency communications.

SATELLITE (SAT) PHONE SERVICE relies on satellites in orbit around Earth that connect with satellite phones via radio signals. Satellite service is very reliable during a disaster or prolonged power outage – as long as the satellite phone stays charged. Sat phones can be used almost anywhere as they don't rely on connecting to towers or similar infrastructure. Some satellite location trackers (e.g. Garmin inReach) can send text messages as well.

The main disadvantage of sat phones has been their much higher cost for both the phone and especially the service, compared with cell phones. Sat phones and location trackers also do not typically work indoors as they need direct line-of-sight to the satellite.

INTERNET-BASED COMMUNICATIONS make use of applications such as email, texting/SMS, Nextdoor, Facebook, Twitter, WhatsApp, etc. These run on Internet-connected devices including cell phones, tablets and PCs. The same caveats apply in an emergency or during a prolonged power outage – as long as the device and the Internet modem/gateway or cell tower have power and the infrastructure downstream is functioning, these means of communication should still work. Again, there are no guarantees in a disaster.

Note that the Internet in general, like cell phone networks, can handle a certain amount of data before becoming overloaded. So it is best to limit data transmissions in an emergency. With cell phones it is highly recommended to text/SMS whenever possible and to refrain from sending images or videos, as text/SMS messages take up much less bandwidth than voice or multi-media files.

2-WAY RADIO COMMUNICATIONS

2-WAY RADIOS such as handhelds (called "walkie-talkies" or HTs) provide a very reliable means of communicating during and after a disaster. This is why emergency responders still rely on them. As long as a radio has power (battery/rechargeable), it can communicate with similar radios.

There are different types of 2-way radios and associated services. The most popular for civilians are FRS (Family Radio Service), GMRS (General Mobile Radio Service), CB (Citizens Band) and Amateur:

FRS utilizes low-power handheld radios designed to communicate over short distances, typically a mile or less. These are ideal for communicating within a neighborhood group or community.

GMRS uses medium-power handheld radios up to higher-power "base stations" designed to communicate over medium distances, typically several miles or so. Some GMRS radios can use a "repeater" that repeats their signal, enabling them to communicate over much longer distances, for example throughout a city or even a county. These are ideal for communicating between neighborhood groups. Every individual should have a GMRS radio (most combine FRS and GMRS) and practice using it regularly. The FCC requires that GMRS operators obtain a license, for information go to: **www.fcc.gov**

CB typically utilizes handheld or vehicle-mounted radios designed to communicate over longer distances, up to about 20 miles. These are most often used by professionals ("truckers") and while not as popular for emergency communications, they can be used. An FCC license is not required.

AMATEUR (HAM) uses handheld radios up to high-power "base stations" for communicating over longer distances, most often also using a repeater. There are official emergency Ham services such as the Radio Amateur Civil Emergency Service (RACES) for disaster communications. Ham operators also require a license from the FCC, and this is strictly enforced (more so than GMRS). **www.fcc.gov**

Note that talking over a 2-way radio is different than over a phone. Phone calls usually involve known individuals speaking to each other, whereas with a radio you are broadcasting out to potentially many operators who may then want to transmit back. Protocols are used to manage this more effectively.

OCP&R has created a GMRS Emergency Network for Oakland (GENOAK) that uses a repeater to enable neighborhood-to-neighborhood communications. OCP&R highly recommends getting your GMRS license (and Amateur/Ham too) and joining this network. Check out: **www.genoak.org**

OCP&R is a program of the Oakland Firesafe Council.

Contact OCP&R for more information and assistance with emergency communications and radios.

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