



Topanga Unplugged

How to stay informed and connected during a power outage

The majority of communications systems we all rely on (Internet, TV, digital & cell phone) require electricity. When the power goes out, many of Topanga's connections to the world go out as well. This includes telecom providers Frontier and Spectrum, plus DirecTV and all cell phone carriers. Old-style copper telephone lines receive power from the service provider. They should continue to operate during a power outage, providing the phone lines are still up. They still exist here and there, but are the exception as service providers have been phasing them out.

We all experienced the frustration of being "unplugged" in the early hours of the Woolsey Fire on 9 November 2018 when all of Topanga lost power. Most residents were immediately shut off from emergency notifications and fire updates, including the order to evacuate the canyon. The deadly 2017 and 2018 fires in Northern California showed, with tragic results, what can happen when residents fail to get timely notifications of a fast moving wildfire.

It's strongly suggested that individuals include, in their emergency planning, multiple ways to get emergency information during a power outage. TCEP's Disaster Radio Team volunteers have come up with some suggestions. As you do your own research to find the solutions that work best for you, please keep these points in mind:

- This is not an exhaustive list of possible solutions.
- There are no guarantees any of these solutions will work for your specific installation or in any specific disaster scenario.
- Telecom equipment comes in many different configurations—even from the same provider—so solutions may have to be adapted for your particular set-up.
- Cost ranges are rough estimates only. Your mileage may vary.
- TCEP does not recommend or endorse any specific products or brands. TCEP does not endorse or vouch for the website(s) linked below.

Emergency Notification Options

AM/FM Battery-Powered Radio

"Free" – \$80+

Use: Listen to city-wide local news

- Many Topanga residents heard about the Woolsey evacuation orders from a portable AM radio tuned to KNX 1070.
- Do a web search for "Emergency radios" to find brands with multiple power sources, including hand-crank charging systems.
- Your car likely has a radio (that's the "free" one).
- Preset these AM news stations: KNX 1070; KFI 640; KABC 790; KRLA 870

FRS Radios

\$20 – \$50

Use: Listen to TCEP Top-Of-The-Hour (TOTH) reports during emergencies; communicate with neighbors.

- FRS stands for Family Radio Service. These are basic, battery-powered, “walkie-talkie” radios that can be purchased and used without a license.
- During large scale emergencies, like the Woolsey Fire, TCEP’s Disaster Radio Team transmits a 5-minute Emergency Status Announcement at the Top-Of-The Hour.
- This Emergency Status Announcement may include evacuation alerts, road closures, school notices, small and large animal evacuation information, and Red Cross shelter locations.
- **The TOTH report is moving to FRS Channel 15 on May 5, 2019.**
- On Friday November 9, as the Woolsey Fire was marching towards Malibu, residents with FRS radios learned of the Topanga evacuation order from the TOTH report.
- See page 25 of the Topanga Disaster Survival Guide (www.topangasurvival.org) for more on FRS radios and TOTH reports. Also, see TCEP’s FRS Handout.

Charging Cell Phones, Tablets, Laptops, and Radios

- Get charging cables for your car and a charging adapter if necessary.
- Have several USB charging sticks in your emergency kit, along with proper cables and connectors for all of your devices. Keep your sticks fully charged.
- Consider larger capacity battery packs with USB ports designed for phone charging that provide more power for more devices.
- Practice good phone usage during emergencies to conserve battery life.

Back-up Power Options for Digital Phone, Internet, and Cell Phone

4 tiered solutions based on type of service, duration, and cost

The following solutions can provide back-up power to your telecom equipment to keep your digital phone, internet, Wi-Fi, and cell phone working. These options assume your telecom provider continues to supply service to your home. If your telecom provider experiences a communications network outage, then no amount of home back-up power will provide you with internet or phone service.

During the Woolsey Fire power outage, Spectrum experienced a network outage so all Topanga Spectrum customers lost service. Frontier kept their full service running throughout the outage so Frontier customers with full AC back-up power (see options below) for their Frontier equipment maintained full internet, Wi-Fi, digital phone, and home-internet-based cell phone service.

There is no guarantee the scenario will play out the same in the next fire or earthquake.

Topanga cell service is spotty, at best, and does not have any built-in back-up power. For more reliable cell service in your home, enable Wi-Fi calling in your cell phone preferences. As long as you maintain Internet service through a Wi-Fi router using the more powerful internet/Wi-Fi back-up solutions below, you’ll be able to use your cell phone during an outage.

Built-in back-up battery for Frontier/Spectrum phone service

\$25 – \$60

Use: Power for digital telephone voice service for up to 8 hours. Does NOT power Internet or TV.

- Frontier and Spectrum offer battery back-up capabilities to keep your digital phone service functioning during an outage. (This does not apply to copper line phone service.)
- These batteries are installed either in the Frontier Optical Network Terminal (ONT) power supply or the Spectrum Multimedia Terminal Adapter (MTA) phone modem. Customers must purchase these batteries either from their telecom provider or a third party compatible brand.
- The batteries automatically keep only the phone service working in an outage. This assumes the telecom provider continues to deliver service to your home.
- You will need to use a non-powered, corded telephone to make and receive calls. These phones are readily available and should be part of your emergency kit.
- These batteries only power digital phone service. They do not provide internet or Wi-Fi service, meaning they won't keep your cell phones connected.
- Batteries degrade with age. Some systems have a status light that indicates battery conditions and/or an audible alarm (intermittent beeping) indicating your battery needs replacing. Consider replacing Frontier batteries every 3-5 years or so. Spectrum claims their batteries last 5-10 years.
- You could buy a second battery and use a trickle charger to keep it charged, giving you the ability to swap out a spent battery for additional run time.

Uninterruptible Power Supply (UPS)

\$120 - \$300

Use: Keep Frontier, Spectrum, and DirecTV services (phone/internet/Wi-Fi) powered for up to 6 hours.

- A UPS is a battery with AC outlets that automatically supplies back-up power to any device that is plugged into it when the electricity grid goes down.
- Generally, a UPS is not meant to power devices for long time periods. Its main purpose is to keep sensitive electrical equipment, such as computers, running long enough after a power loss for you to save and shut down without damaging the equipment or losing data.
- Keep your Frontier ONT or Spectrum MTA and Wi-Fi router plugged into a UPS 24/7. During an outage, the whole system can continue to operate off the UPS for a limited time.
- The length of time the UPS will power the ONT / MTA and Wi-Fi router depends on the capacity of the UPS and the power requirements of whatever you've got plugged in.
- Frontier ONT / Spectrum MTA and Wi-Fi routers do not require a lot of power. A 1,000VA-1,500VA UPS may give you 3-6 hours of run time for this equipment.
- Consider getting the most powerful UPS you can afford to give yourself the longest potential run time.
- The battery in a UPS becomes less effective over time and will eventually need to be replaced.
- The batteries in some UPS can be "hot swapped" allowing you change depleted batteries with fresh charged batteries.

100Ah Deep Cycle Batteries + Inverters + Trickle Chargers

\$250 – \$600+

Use: Keep Frontier/Spectrum/DirectTV phone and internet/Wi-Fi system powered for up to 72 hours.

- 100Ah deep cycle batteries look much like the battery in your car, but instead of providing instant starting power, they are designed to provide steady power over time.
- This solution requires minor DIY capabilities, such as connecting an inverter and trickle charger to the 100Ah batteries.
- One battery and inverter may power your Frontier ONT / Spectrum MTA for up to 72 hours. Unless your Wi-Fi router has power too, you will only have access to digital phone service.
- A second battery and inverter may power your Wi-Fi router and Wi-Fi-based cell service for up to 72 hours.
- If the Wi-Fi router and Frontier ONT / Spectrum MTA are physically distant from one another, you will need a second battery and inverter to power your Wi-Fi router.
- As with all battery solutions, if you have a way to charge spare batteries, run times can be extended by swapping in a freshly charged battery.

Battery Power Stations (EX: Goal Zero, Tesla Power Wall)

\$400 – \$3,000+

Use: Keep your digital phone and Internet/Wi-Fi system powered for up to 3 days.

- A power station is simply a large battery (either sealed lead acid or lithium) with a built-in inverter and AC outlets for the easiest “plug and play” convenience.
- The length of time they can power telecom equipment depends on the battery capacity. The math is simple: Take the wattage capacity of your power station and divide by the combined wattage of the devices you are plugging into it to see how many hours it will run.
EX: 1,400 watt-hour power station / 30 watt Frontier ONT + router = 46 hours (1400 ÷ 30 = 46.6).
- Many power stations can be recharged using solar panels. If your solar panels can feed in more power than your plugged in devices are pulling out, you can theoretically power your devices indefinitely.
- These units are silent, emit no fumes and can be used indoors. They are generally more expensive per watt of power than generators.
- Some can be kept charged in stand-by mode using solar panels or by keeping them plugged into a wall outlet.

Generators

\$500 – \$1,000+

Use: Keep digital phone and internet/Wi-Fi system plus other devices powered for up to 7+ days.

- Generators give you the most power per dollar. They have AC outlets making it easy to directly plug in and run electrical equipment.
- You must store fuel for your generator.
The amount of fuel you have will determine how long you can power your equipment.
- Generators are noisy and emit fumes so they must be run outdoors.
- Propane- and gasoline-powered generators each have pros and cons. See this web page for an overview:
<https://www.americasgenerators.com/blog/post/2018/07/03/backup-fuel-propane-vs-gas-generators.aspx>