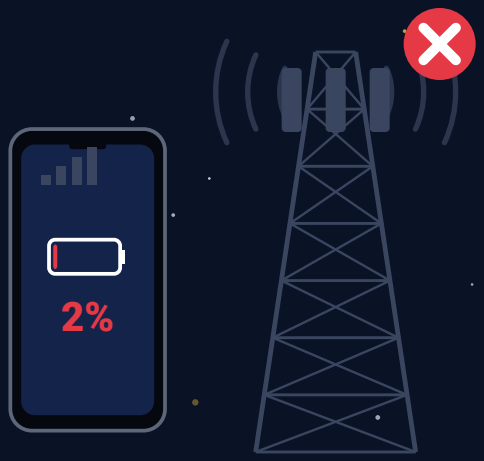
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FREE GUIDE · USA

POWER OUT. PHONE AT 2%. NOW WHAT?



BLACKOUT RADIO GUIDE

What to listen to when the grid and the internet go down: official weather alerts, the channels people really use, what needs a license, and a family radio plan you can print.

- The 7 NOAA Weather Radio frequencies
- 6 radio types: license and cost
- Ham license in an emergency? The rule
- FRS/GMRS, CB, 2 m and 70 cm channels
- Family plan + printable sheets



HOW TO USE THIS GUIDE

Read it once on a calm day, print the sheets, and keep it next to your radio.

1 BEFORE THE BLACKOUT

See why phones go quiet (p. 3), pick a radio (p. 4) and find your NOAA station (p. 5). Ten minutes now saves hours later.

2 KNOW THE RULES

What anyone can listen to, what needs a license, and the emergency exception, straight from the FCC rules (p. 6 and 7).

3 SET YOUR CHANNELS

FRS/GMRS, CB, ham and listen-only frequencies, plus how to find your own city (p. 8 to 10).

4 PLAN AND PACK

Family radio plan (p. 11), kit (p. 12), first-24-hours routine (p. 13), 10 mistakes (p. 14) and a sheet to print (p. 15).

WHAT'S INSIDE

3 Why the phone fails in a blackout
4 6 radio types: use, license, cost
5 NOAA Weather Radio: 7 frequencies
6 Do you need a license?
7 Listening: what the law allows
8 FRS / GMRS channels 1 to 22
9 Other frequencies worth knowing
10 Find your city's frequencies
11 Family communication plan
12 Blackout radio kit checklist
13 The first 24 hours: a routine
14 10 mistakes to avoid
15 Frequency sheet to print
16 Sources and how to check
17 Final word

NO INTERNET
Radio works off-grid

7 NOAA CHANNELS
162.400 to 162.550 MHz

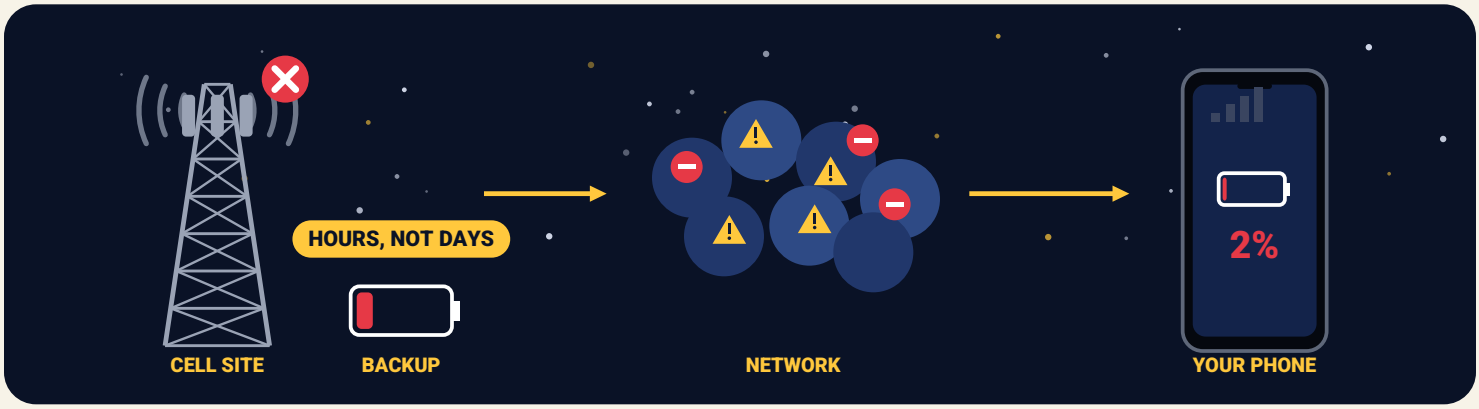
LICENSE RULES
Checked at FCC and eCFR

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Educational guide, US rules checked in Nov 2026. Rules change: confirm at fcc.gov, ecfr.gov and your state law before you transmit or install a scanner.

WHY YOUR PHONE GOES QUIET

In a long outage your phone loses the three things it depends on, one by one.



1 THE TOWER RUNS ON BACKUP

Cell sites keep working on batteries and, at some sites, a generator. Backup is measured in hours, not days, and changes site by site. A 2008 California PUC review found 80% of wireless remote terminals had four or more hours. In 2020 the state set a 72-hour goal only for sites in high fire-threat areas.

2 EVERYONE CALLS AT ONCE

The FCC warns that in an emergency many more people use their phones at the same time, and that volume can create network congestion. The FCC notes a text message will often go through when a call does not.

3 YOUR BATTERY IS THE LAST LINK

With no wall power, the phone is the device you can least afford to drain. Streaming audio, video and maps eat the battery fastest, and an app that streams a scanner needs data that may be down too.

WHAT STILL WORKS WITHOUT A TOWER

- **AM/FM broadcast radio**
- **NOAA Weather Radio**
- **Two-way radio, handset to handset**
- **A scanner listening locally**

NOAA transmitters can lose power too (the county list shows them as Out of Service), so keep AM/FM as a second source.

FCC TIPS WHEN THE NETWORK IS JAMMED

- Text instead of calling
- Keep calls short and vital
- Wait 10 seconds before redialing
- Have charged batteries and a car charger
- Name one out-of-area contact for the family

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6 RADIO TYPES FOR A BLACKOUT

Pick by what you need: only to hear, or also to talk. Prices are approximate US street prices in 2026.

	Radio	What it's for	License	Approx. cost
	**Crank / solar weather radio**	NOAA alerts plus AM/FM news. Many can top up a phone a little. Listen only.	None (receive only)	$20 to $100 (NWS range)
	**Scanner**	Listens to weather, marine, aviation, ham and local public safety where not encrypted.	None to listen. Some states limit scanners in vehicles.	~$100 analog; $400+ digital
	**FRS walkie-talkie**	Talk to family nearby on 22 channels, up to 2 watts.	None (licensed by rule)	~$25 to $60 a pair
	**GMRS radio**	Same channels, more power, better antennas, repeaters. FCC: 1 to 25 miles.	FCC license: $35, 10 years, no exam	~$40 to $200 + $35
	**CB radio**	40 channels at 27 MHz. Road info on 19; channel 9 for emergencies.	None	~$50 to $200
	**Amateur (ham)**	Local repeaters, regional and long-distance contacts, emergency nets.	Technician exam (35 questions) + $35 FCC fee	~$30 to $300 handheld

Listening needs no license on any of them. Talking is where the rules start: **see p. 6.**

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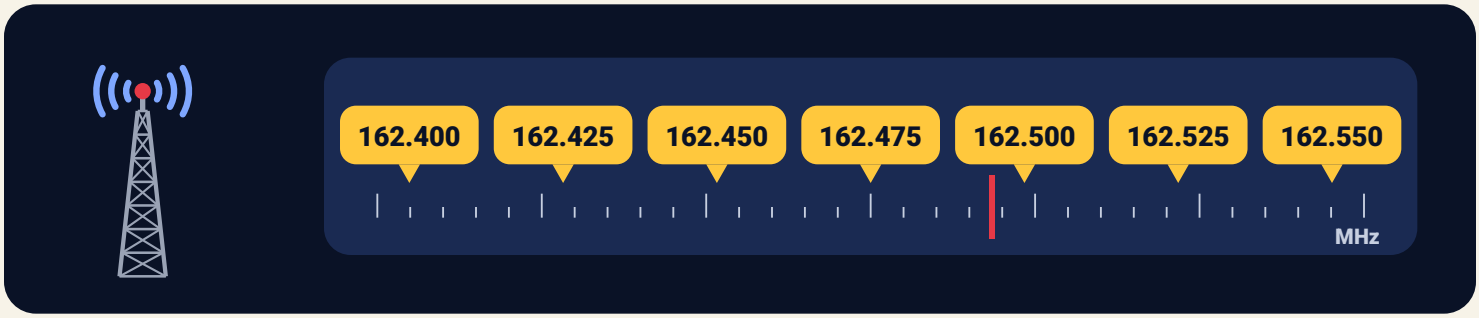
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NOAA WEATHER RADIO: 7 FREQUENCIES

More than 1,000 transmitters cover all 50 states, coastal waters and US territories, 24 hours a day.



Many radios label them WX1 to WX7, but the order changes by brand. Match the MHz, not the number.
A plain AM/FM radio cannot receive it: you need a weather radio, a scanner, or a radio with a weather band.

SAME: ALERTS ONLY FOR YOUR COUNTY

1 FIND YOUR 6-DIGIT CODE

Each county has a SAME code. Get it from the county list at weather.gov/nwr, or call or text "Go" to 1-888-NWR-SAME (1-888-697-7263).

2 PROGRAM IT

Follow your radio's manual. Do not pick a louder station that is not listed for your county: you will not get alerts.

3 LET IT WAKE YOU

For a warning, the radio sounds a 1050 Hz tone, then plays the message, even with the volume down on models with that feature.

FIND THE TRANSMITTER FOR YOUR COUNTY

County	SAME code	Transmitter	Frequency	Status
Your county, listed by state	6 digits to program	City, state and call sign	One of the 7 above	Normal, Degraded or Out of Service

Reception reaches about 40 miles from the transmitter on level terrain. Mountains can block it: test from your home before you need it.

WHEN YOU BUY ONE, LOOK FOR

- **Public Alert or NWR All Hazards logo**
- **SAME county programming**
- **Tone alarm (1050 Hz)**
- **Battery backup**

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DO YOU NEED A LICENSE?

Listening and talking follow different rules. The short version, checked against the FCC rules.

Radio	Listen	Talk	What you need to talk
Weather / AM / FM	YES	-	Nothing: receive only
Scanner	YES	-	Receive only. Check state rules for cars (p. 7)
FRS	YES	YES	No license. Max 2 W (0.5 W on channels 8 to 14)
GMRS	YES	LIC	FCC license: $35, 10 years, age 18+, no exam. Family members of any age may use it
CB	YES	YES	No license
Ham (amateur)	YES	LIC	Technician license: 35-question exam, no Morse code, $35 FCC fee, 10 years
Marine / aviation	YES	-	Listen only in this guide: talking needs the right station and license

YES = allowed without a license LIC = license required - = not a talk radio for you

THE EMERGENCY EXCEPTION · 47 CFR 97.403

> **"No provision of these rules prevents the use by an amateur station of any means of radiocommunication at its disposal to provide essential communication needs in connection with the immediate safety of human life and immediate protection of property when normal communication systems are not available."**

WHAT IT MEANS

When life is at immediate risk and normal systems are down, the rules step aside. Section 97.405 adds that a station in distress may use any means to get help. It is widely read as: anyone may call for help on a radio in a real emergency.

WHAT IT DOES NOT MEAN

It is not permission to chat, practice or "test" on ham or GMRS without a license. A radio you have never used is hard to use in the dark: get licensed and practice before the emergency.

GMRS in an emergency

A GMRS licensee may let anyone use their station if it is necessary to send an emergency message (47 CFR 95.1705).

CB channel 9

Only for emergencies and traveler assistance, nothing else. Any CB channel may carry emergency traffic, which always has priority (47 CFR 95.931).

Getting a GMRS license

Apply online in the FCC's Universal Licensing System (ULS) and pay the $35 fee. No exam. One license covers your immediate family.

Getting a ham license

Pass the 35-question Technician exam with volunteer examiners, in person or online (see arrl.org), then pay the $35 FCC fee.

LISTENING: WHAT THE LAW ALLOWS

Federal law lets you hear a lot without a license, with a few lines you must not cross.

OPEN TO THE PUBLIC

Federal law (18 U.S.C. 2511) allows hearing radio for general public use, distress traffic, ham, CB, GMRS, marine and aviation, and public safety systems that are readily accessible to the public.

STATE RULES FOR CARS

Some states limit scanners in vehicles. New York requires a permit to equip a vehicle with a police-band receiver (VTL 397). Florida bans installing or carrying one in a vehicle (843.16). Both exempt licensed hams.

DON'T SHARE PRIVATE TRAFFIC

47 U.S.C. 605 bars intercepting a private radio message and passing on its content. It does not cover broadcasts for the public, distress calls, ham or CB.

ENCRYPTED STAYS SILENT

Many agencies encrypt their radio. This guide does not cover decoding it, and you should not try. When a channel goes quiet, use official alerts: NOAA, AM/FM, local officials.

PHONE CALLS ARE OFF-LIMITS

Cell calls, texts and other private messages are protected. A scanner is for open radio channels, nothing else.

NEVER USE IT FOR A CRIME

Using what you hear to commit a crime or to get in the way of responders is illegal. Listen to stay safe, not to show up at the scene.



CHECK YOUR STATE

Scanner laws are state laws and they change. Before you put a scanner in a car or take one across state lines, look up the current statute for each state on your route.

FRS / GMRS CHANNELS 1 TO 22

The same 22 channels on every FRS radio sold in the US (47 CFR 95.563). GMRS shares all of them.

Ch	MHz	FRS power	GMRS note
1	462.5625	2 W	Interstitial
2	462.5875	2 W	Interstitial
3	462.6125	2 W	Interstitial
4	462.6375	2 W	Interstitial
5	462.6625	2 W	Interstitial
6	462.6875	2 W	Interstitial
7	462.7125	2 W	Interstitial
8	467.5625	0.5 W	Handheld only
9	467.5875	0.5 W	Handheld only
10	467.6125	0.5 W	Handheld only
11	467.6375	0.5 W	Handheld only
12	467.6625	0.5 W	Handheld only
13	467.6875	0.5 W	Handheld only
14	467.7125	0.5 W	Handheld only
15	462.5500	2 W	Main / repeater out
16	462.5750	2 W	Main / repeater out
17	462.6000	2 W	Main / repeater out
18	462.6250	2 W	Main / repeater out
19	462.6500	2 W	Main / repeater out
20	462.6750	2 W	Main / repeater out
21	462.7000	2 W	Main / repeater out
22	462.7250	2 W	Main / repeater out



CHANNEL 20 (462.675 MHz)

Used by custom as an informal GMRS emergency and calling channel. It is a habit, not an FCC rule: agree on a family channel anyway.

PRIVACY CODES ARE NOT PRIVATE

CTCSS/DCS codes only mute other users on your radio. Anyone on the same channel without a code hears every word.

LISTEN BEFORE YOU TALK

No channel belongs to anyone. The FCC asks users to share channels with a listen-before-talk etiquette.

REPEATERS

GMRS repeaters receive on 467 MHz and repeat on channels 15 to 22, reaching much farther. They need a GMRS license.

OTHER FREQUENCIES WORTH KNOWING

Program them into a scanner, or into the radio you are allowed to use. Red tag = listen only.

27.065 MHz

CB CHANNEL 9

NO LICENSE TO TALK

Emergencies and traveler assistance only. No license needed (47 CFR 95.931).

27.185 MHz

CB CHANNEL 19

NO LICENSE TO TALK

Informal highway channel used by truckers for road conditions. Custom, not a rule.

146.520 MHz

2 M HAM CALLING

TALK WITH A HAM LICENSE

National Simplex Calling Frequency (ARRL band plan). Anyone may listen; talking needs a ham license.

446.000 MHz

70 CM HAM SIMPLEX

TALK WITH A HAM LICENSE

National simplex frequency (ARRL band plan). Same rule: listen freely, talk with a license.

121.500 MHz

AVIATION EMERGENCY

LISTEN ONLY

Emergency and distress (47 CFR 87.173). Listen only, never transmit.

156.800 MHz

MARINE VHF CH 16

LISTEN ONLY

Distress, safety and calling watch for vessels (47 CFR 80.148). Listen only on land.

162.400 to 162.550 MHz

NOAA WEATHER

LISTEN ONLY

Seven channels; find yours on p. 5.

No license to talk · Talk with a ham license · Listen only

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FIND YOUR CITY'S FREQUENCIES

Police, fire, EMS and county emergency management. Where to look and what a cheap scanner can't hear.

1 LOOK IT UP

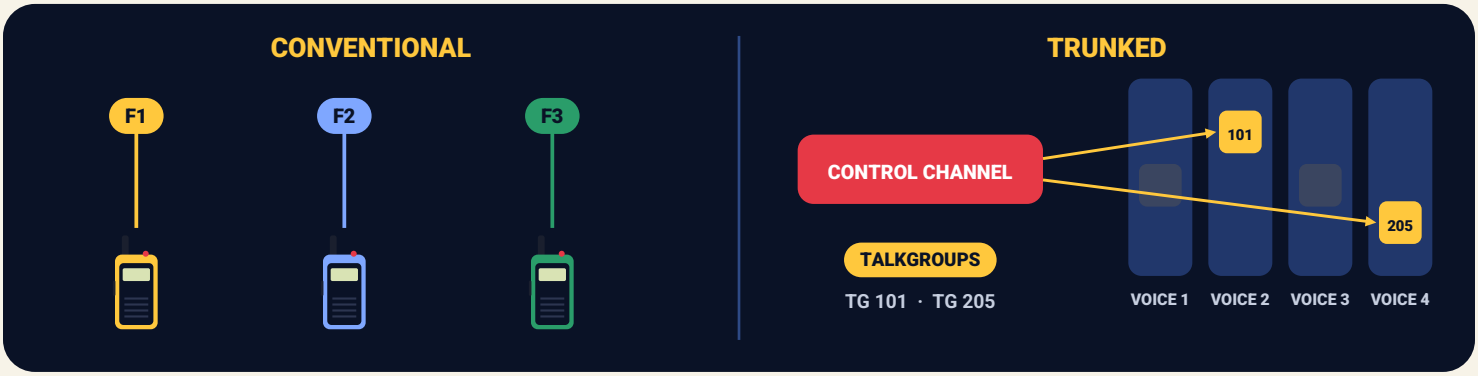
Community-run frequency databases online list each county's agencies, the system type and whether it is encrypted. Your county emergency management site and a local radio club help too.

2 READ THE SYSTEM TYPE

Conventional, trunked, digital P25 or encrypted: the type decides which scanner works. Check it before you buy.

3 PROGRAM AND TEST

Program it on a normal day, listen for a week, then print the list on p. 15. In a blackout there is no time to search.



4 SYSTEM TYPES

CONVENTIONAL

One channel, one frequency. Any basic analog scanner can hear it if it covers the band.

TRUNKED

A control channel hands each call to a free voice frequency by talkgroup. Needs a trunking scanner.

DIGITAL P25

Digital voice. Needs a scanner that decodes P25; Phase II systems need a Phase II model.

ENCRYPTED

Locked on purpose. No scanner should be used to hear it. Use official alerts instead.

WHAT A CHEAP SCANNER WON'T PICK UP

- Trunked systems
- Encrypted channels
- Digital P25 (and DMR/NXDN unless listed)
- Cell phone calls (illegal anyway)

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FAMILY COMMUNICATION PLAN

Fill it in together, give every person a copy, and keep one in the radio kit.

WHO HAS A RADIO

Name	Radio	Call name

OUR CHANNELS

Main channel + code

Backup channel

NOAA station + SAME code

AM/FM news station

CHECK-IN TIMES

Radios on at the top of the hour for 5 minutes:

- **Morning**
- **Noon**
- **Evening**
- **Night**

MEETING POINTS

Near home

Out of the neighborhood

Out-of-area contact (name + phone)

IF NOBODY ANSWERS

1. Try the backup channel
2. Wait for the next check-in time
3. Send one text to the out-of-area contact
4. Go to the meeting point at the agreed time

BLACKOUT RADIO KIT

Keep it in one bag, in a place everyone knows. Check it once a month.

- [ ] **Weather radio**
  Crank or solar, with SAME programmed
- [ ] **Spare batteries**
  The right size for every radio, in the package
- [ ] **Power bank**
  Charged; recharge it every month
- [ ] **Car charger**
  For the phone and USB radios
- [ ] **Handheld radios**
  FRS/GMRS for each person, labeled
- [ ] **Earphones**
  Listen without draining the speaker
- [ ] **Flashlight or headlamp**
  Plus spare batteries
- [ ] **Printed frequency list**
  The sheet on p. 15
- [ ] **Printed family plan**
  The sheet on p. 11
- [ ] **Radio manuals**
  Or a printed quick card for each one
- [ ] **Pen and notebook**
  Log alerts, times and channels
- [ ] **Waterproof bag**
  For radios, paper and batteries
- [ ] **License copies**
  GMRS and ham call signs, if you have them
- [ ] **Spare antenna**
  Only where the radio allows a detachable one



MONTHLY 10-MINUTE TEST

- [ ] **Turn the crank 1 minute: does it play?**
- [ ] **Weather radio: right station, SAME code still set?**
- [ ] **Radio check on the family channel**
- [ ] **Swap batteries that are getting weak**

Take batteries out of radios you store for months: leaking batteries are a common way to lose a radio.

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THE FIRST 24 HOURS: A ROUTINE

Saves battery, keeps the family in touch and keeps you on official information.

1

FIRST 15 MIN

Turn on the weather radio or AM/FM. Send one text to the family ("OK, home, plan A"). Put the phone in low power mode.

2

FIRST HOUR

Hand out the radios on the family channel. Note the time, the alerts and what you heard in the notebook.

3

EVERY HOUR

Radios on at check-in time for 5 minutes, then off. Weather radio stays on alert mode.

4

BEFORE BED

Charge from the power bank or crank. Weather radio on alert mode next to the bed.

5

DAY 2 AND AFTER

Listen to local news on AM/FM twice a day. Use the phone only for texts that matter. Follow official instructions.

Official instructions come first: emergency managers, NOAA and broadcast news. What you hear on a scanner is raw and often incomplete.

10 MISTAKES TO AVOID

Most blackout radio problems are set up long before the lights go out.

1 Buying the radio during the storm

Stores run out, and you won't have time to learn it. Buy and test it now.

2 Never programming the SAME code

Without it, the radio may stay silent for your county or alarm for others.

3 Counting on a scanner app

It needs data and battery, the two things a blackout takes first.

4 Thinking privacy codes are private

On FRS/GMRS anyone on the channel hears you. Never say what you wouldn't post.

5 Talking on GMRS or ham with no license

Not to test, not to chat. The exception is for real emergencies only.

6 Expecting a cheap scanner to hear P25

Check the system type in a database before you buy.

7 Dead or leaking batteries

Store them outside the radio and rotate them every few months.

8 A scanner in the car without checking

Some states require a permit or ban it. Look up your state's law.

9 Radios on, nobody listening

Without a channel and a check-in time, family radios are useless.

10 Only one source

If the NOAA transmitter is out, AM/FM news is your backup. Have both.

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MY FREQUENCY SHEET

Fill in your area, test each line on a normal day and tick the box. Keep a copy in the kit.

Service	Channel / MHz	Notes	Tested
NOAA Weather Radio		SAME code:	☐
Family channel (FRS/GMRS)		Code:	☐
Backup family channel			☐
CB channel 9	27.065	Emergencies only	☐
2 m ham calling	146.520	Listen; talk with license	☐
70 cm ham simplex	446.000	Listen; talk with license	☐
Local ham repeater		Offset / tone:	☐
Aviation emergency	121.500	Listen only	☐
Marine VHF ch 16	156.800	Listen only	☐
Police		Type: conv / trunked / P25	☐
Fire / EMS		Type:	☐
County emergency mgmt.			☐
AM news station			☐
FM news station			☐

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SOURCES AND HOW TO CHECK

Every rule in this guide comes from these pages. Rules and fees change: check the current version before you act.

1 NOAA Weather Radio

weather.gov/nwr: the 7 frequencies, SAME codes by county, 1-888-NWR-SAME, receiver features, coverage and outages.

2 FCC

fcc.gov: GMRS and FRS service pages (license, term, range) and "Tips for Communicating in an Emergency".

3 eCFR, title 47

ecfr.gov: 97.403 and 97.405 (emergency), 97.501 (exams), 95 (FRS, GMRS, CB), 87.173 (121.5), 80.148 (ch 16), 1.1102 (fees).

4 ARRL

arrl.org: Technician license (35 questions, no Morse, 10 years) and the band plan (146.52 and 446.00 MHz).

5 US Code and state law

47 U.S.C. 605 and 18 U.S.C. 2511 (law.cornell.edu); NY VTL 397 (nysenate.gov); Florida 843.16 (leg.state.fl.us).

6 California PUC

cpuc.ca.gov: network resiliency (72-hour backup in high fire-threat areas) and its 2008 backup power review.

BEFORE YOU ACT, CHECK

- The current fee at fcc.gov before you apply
- Your county's NOAA transmitter status
- Your state's scanner law
- Your local system type (conventional, trunked, P25)

A NOTE ON PRICES

Radio prices on p. 4 are approximate US street prices we observed in 2026, not official figures. The NWS range for weather radios ($20 to over $100) comes from weather.gov. Checked in November 2026: weather.gov/nwr, fcc.gov (GMRS, FRS, emergency tips), eCFR title 47, arrl.org, law.cornell.edu (47 U.S.C. 605, 18 U.S.C. 2511), nysenate.gov, leg.state.fl.us, cpuc.ca.gov.



WHEN THE LIGHTS GO OUT, YOU'LL STILL HEAR IT

A charged radio, a programmed county code and a family plan on paper. That is the whole kit. Set it up this week, test it once a month, and the next blackout is just a quiet night.

1. **Program your county**
   SAME code on p. 5
2. **Fill in the plan**
   Family sheet on p. 11
3. **Print your channels**
   Frequency sheet on p. 15

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