



Preparing for
Disaster

A guide to **surviving**
the next big quake or fire



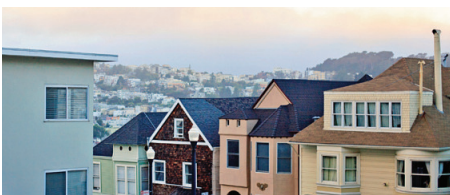
LAW ENFORCEMENT officers direct drivers evacuating the area off Pentz Road during the Camp Fire in Paradise in 2018.

San Francisco Chronicle

Preparing for disaster

Your guide to surviving the next big fire, quake or flood

Gabrielle Lurie / The Chronicle 2018



[StrengthenMyHome.com](https://www.strengthenmyhome.com)

**CALIFORNIA RESIDENTIAL
MITIGATION PROGRAM**

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Carlos Avila Gonzalez / The Chronicle

Cal Fire crews stage above Lake Berryessa while fighting the LNU Lightning Complex Fire in August.

Disasters will strike. Will you be ready?

By Kurtis Alexander

California has counted well over 300 disaster declarations since the federal government began using the designation in 1953. That's more than any other state.

Quakes, fires and floods top the list. Researchers say climate change is becoming an increasing part of the picture, with warmer temperatures inducing longer heat waves, prolonged periods of drought, extreme winds that increase fire danger and force blackouts, and storms packed with

additional moisture.

With a pandemic sure to complicate how we respond, preparation is more important now than ever.

Emergency experts say that while few people have a strategy, planning can make a big difference in how you and your loved ones weather the unexpected.

You can't know when the next big disaster will hit, but this guide will help you prepare.

To download the guide, go to sfchronicle.com/survival

PREPARING FOR A PUBLIC SAFETY POWER SHUTOFF

Public Safety Power Shutoff (PSPS) is a statewide effort to prevent wildfires by proactively turning off power to communities when severe winds and dry weather conditions are forecast. While turning off the power helps prevent wildfires, we also know it will disrupt lives and cause hardship for our customers. That's why PG&E does not make this decision lightly and will only call a PSPS to help keep customers and communities safe.

HERE ARE 5 WAYS TO PREPARE FOR A PSPS:



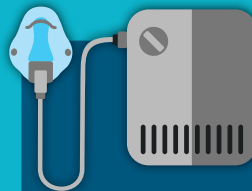
Make sure PG&E can reach you before a PSPS by updating your contact information at pge.com/mywildfirealerts.

1



Pack or restock your family's emergency kit including food, water, batteries, masks, radio and a first aid kit.

2



Make preparations for anyone in your family who depends on electricity for medical needs.

3



Practice manually opening your garage door (if you have a garage).

4



Ensure any backup power sources are ready and safe to operate.

5

For translated support in over 200 languages, please contact PG&E at 866-743-6589.



To learn more ways to prepare for a PSPS and any emergency, visit safetyactioncenter.pge.com

INTRODUCTION

Disaster pileup in state stresses first responders

By Peter Fimrite

There is no playbook for handling a global pandemic while managing a fire apocalypse, but the combined disasters that laid waste to California in the past few months have focused the attention of experts worried that emergencies in the future may come more often in twos and threes.

The coronavirus complicated the response to the many fires that raged across the state, endangering millions of people and raising questions about how the state should handle disasters like earthquakes, fires, storms and flooding when they combine forces and hit at the same time.

“It does complicate things, having overlaid emergencies,” said Brian Ferguson, the state communications director for the California Office of Emergency Services. “Certainly in emergency management we are trying to evolve and adapt all the time. Unfortunately, we’ve had a lot of practice here in California, so we are better prepared than we were in the past, but obviously this is on a larger scale.”

California has dealt with major fires before while other emergencies, like power outages and shootings, were also happening. In November 2018, shortly after Gov. Gavin Newsom took office, a deranged Marine veteran shot 13 people to death at the Borderline Bar and Grill in Thousand Oaks. It happened as California was erupting in flames, with the deadly Camp Fire, in Butte County, and the destructive Woolsey Fire, in Los Angeles and Ventura counties.

But the pandemic, historic heat waves and five of the top 10 largest wildfires in California history combined to create the most extreme emergency state officials have faced at one time.

Alexander Gershunov, research meteorologist at the Scripps Institution of Oceanography in San Diego, said things may actually get worse this fall as downslope winds that

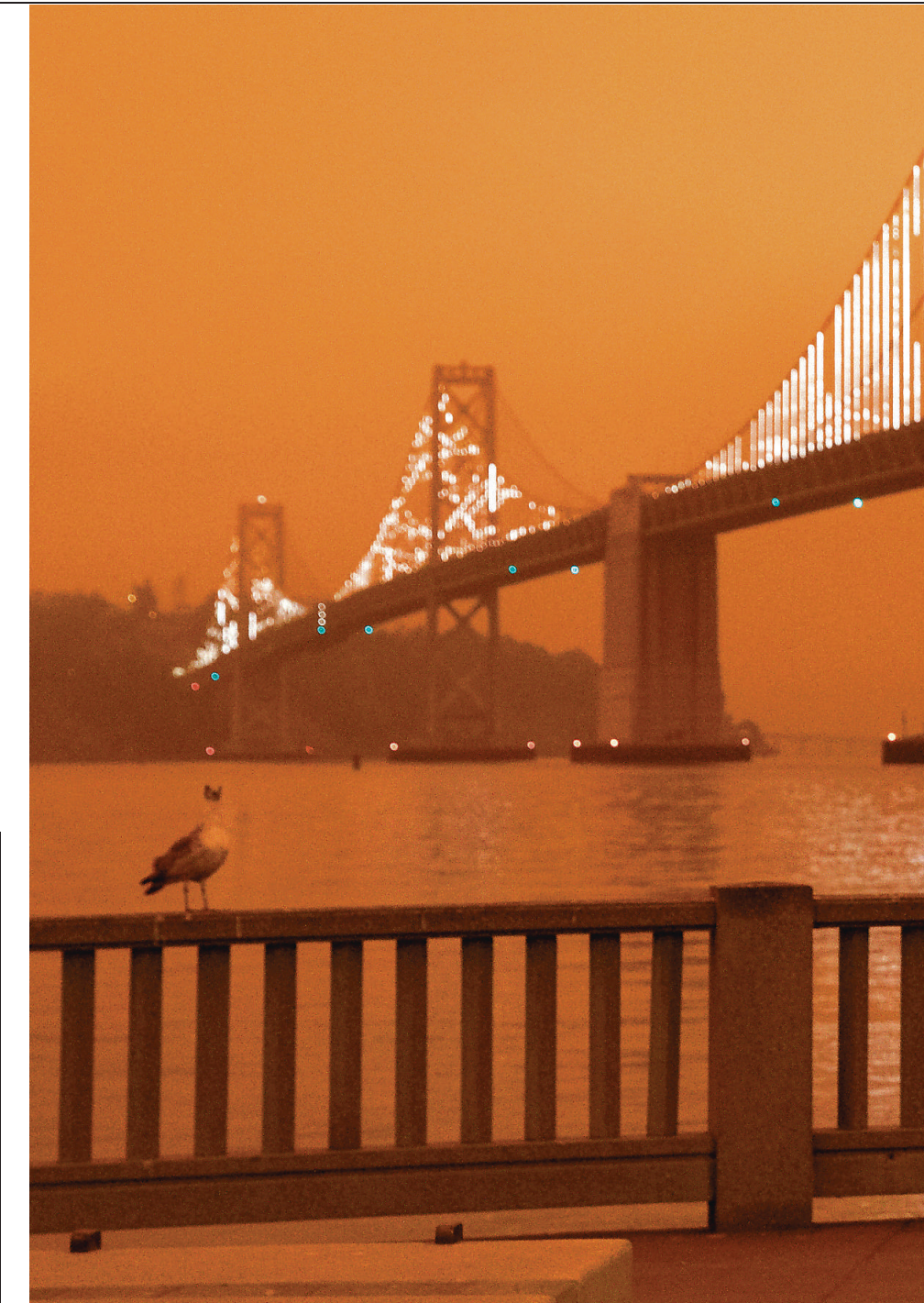
have historically been associated with the worst fires in California kick up.

“We have COVID, an economic crisis, fire and extreme weather piling on top of each other,” Gershunov said. “These fires are still going to be burning when the Diablo and Santa Ana winds start. Where the wildfires are burning, the winds are already fanning the flames, so those fires are getting harder to control.”

Tarik Benmarhnia, an environmental epidemiologist with the Scripps Institution and UC San Diego School of Public Health, said the fires might have increased coronavirus transmissions by forcing evacuees into closer quarters, like shelters. But the biggest health danger, he said, is the smoke from the fires.

Excessive smoke can cause what is known as oxidative stress, a condition that prevents the body from detoxifying itself and responding to diseases. This may well make COVID-19 infections more severe, he said.

“When you get wildfire smoke, you will have a higher likelihood of getting severe symptoms,” said Benmarhnia, who said smoke in the air might also allow the aerosol form of the coronavirus to linger in the air for a longer period of time. “It makes your immune response less resistant, so your capacity to fight against the



virus will be affected.”

Benmarhnia said he expects to see more instances of respiratory disease, acute renal failure and death in California over the next few weeks as a result of the confluence of events. And the flu season is just around the corner.

So what can be done to shore up our defenses against such onslaughts in the future?

Gershunov said early warning systems for fires, earthquakes and extreme weather will be crucial so that citizens, government officials

and the health care system have time to take precautions, stock up on supplies and protect themselves.

The idea is to work with the National Weather Service, U.S. Geological Survey and other agencies to increase lead time and provide targeted information about which people and communities will be impacted most and then implement targeted intervention efforts and policies.

As with the coronavirus, smoke, pollution and heat waves, people with respiratory problems, the elderly, at-risk communities and those lack-



Jessica Christian / The Chronicle

The sky turned amber over S.F.'s Embarcadero the morning of September 9 because of smoke from multiple wildfires burning across California and Oregon.

able for people displaced by fires so that fewer evacuees would be sent to shelters.

Christine McMorrow, a Cal Fire public information officer, said the coronavirus forced the agency to begin screening all emergency calls and limiting contact with citizens to firefighters wearing masks and protective gear. Many trainings not critical to protecting life and safety were also canceled or postponed.

In wildfire base camps, firefighters now wear masks at all times and have their temperatures taken when they enter and exit the camp. All meals are served packaged in boxes, and there are more hand-washing stations.

“Overall we’ve had significant challenges, with lower crew numbers, the coronavirus and the worst fire season in history, but really what that has done is force us to utilize all systems,” McMorrow said. “It’s added some layers, challenged how we do meetings and trainings and changed things, but now we’ve really adapted.”

The stakes are high, given the worrisome possibility that an earthquake could join the panoply of disaster in the Bay Area and across the state.

It is why emergency workers say citizens should take charge of their own disaster planning by knowing their escape routes and placing a three- to five-day supply of food, water and emergency supplies in go-bags next to the front door. Extra clothes, sturdy shoes, a cell phone charger, portable radio, sleeping bag, prescriptions, tools and first aid kit should also be ready to go, according to experts.

“We’re really getting a big whiff of what compounded crisis looks like,” Gershunov said. “We’re taking it one step at a time, but certainly this is motivating us to think of how we can improve the situation, at least how we can improve the information needed for adequate responses to these types of situations.”

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ing insurance are often affected the most by disasters.

Benmarhnia said improved early warning systems would allow public health officials to provide the most susceptible populations with necessary supplies, including N95 masks, air conditioning and filtering systems and preventive medications for asthma and other health conditions.

“The idea is just to be ready a few months in advance because whatever we do now, we will see these wildfires more often,” Benmarhnia said. “It is our job to make sure we have an effec-

tive warning system to identify vulnerable communities and try to implement and evaluate interventions.”

The experience of dealing with overlapping emergencies in the past inspired the governor and California emergency officials to forge stronger relationships with the Federal Emergency Management Agency and make improvements in communications, technology and in the emergency response.

Cal Fire bolstered its firefighting capabilities this year by purchasing new Firehawk helicopters, wildfire

cameras and communications equipment. The state also added 172 full-time members to Cal Fire’s baseline workforce.

The fire season nevertheless got off to a bad start when the number of inmate firefighters was cut in half when coronavirus infections prompted a quarantine at 12 Northern California conservation camps. Gov. Newsom responded by approving the hiring of 858 seasonal firefighters to replace the prison hand crews. Emergency officials also worked with the hotel industry to make rooms avail-

PLANNING

Safeway
on
4th Street
Is Open

CLOSED
UNTIL
FURTHER
NOTICE
Sorry for the
inconvenience

DO NOT
ENTER

A grocery store in Santa Rosa was closed due to a PG&E power shutoff to avoid fires should strong winds knock down transmission lines. The outage left 850,000 customers without electricity in October 2019.

ADVERTISING FEATURE

California Expert Says NOW Is the Time to Retrofit

When you live in earthquake country, the question isn't whether the next earthquake will come, it's when. Californians know this well, given that most of us live within 30 miles of an active fault. While most of the attention is focused on the infamous San Andreas fault, source of the 1906 and 1989 quakes, scientists who've studied the faults extensively have determined that the Hayward fault is currently the most dangerous, concluding that the fault has a 31.7% chance of rupturing in a 6.7 magnitude earthquake in the next 26 years. While no one knows exactly when the next earthquake will happen, the experts at the not-for-profit California Residential Mitigation Program (CRMP) say the time is now to hire a licensed contractor to strengthen your home through a seismic retrofit.

"A seismic retrofit is not always as complex or expensive as people assume," says Janiele Maffei, Executive Director of the not-for-profit CRMP. "Strengthening the foundation of a cripple-wall home is pretty simple: you attach the plywood to the crawlspace walls, anchor the foundation and place metal clips above the wall. More than 12,000 of these retrofits have been completed, and the median price is \$5,000. It will take a licensed contractor two to three days to complete, with little disturbance to the residents. Even in the Bay Area, with the high cost of living, the average cost is between \$6,000 and \$7,000. When you consider the cost of rebuilding your home... (after an earthquake), retrofitting makes a lot of sense."

Formed in August 2011, CRMP was established to assist California homeowners who wish to retrofit their houses to mitigate against earthquake damage. Several Bay Area communities also offer grants for seismic retrofits, though Maffei says that, whether or not you qualify for a subsidy, strengthening your home's foundation through a seismic retrofit is the best way to protect your family and your investment in your home. There are several retrofits to consider, and the most common is dismantling unreinforced masonry chimneys. Other common retrofits include houses with cripple walls around the crawlspace, houses with living space over the garage, and homes built on a hillside. CRMP also offers an "Earthquake Brace + Bolt" assistance program, though registration is currently closed.

"We find unreinforced masonry chimneys coming down in every earthquake," says Maffei. "They are also visible on many homes built in the 1990s. They're large and heavy and can damage property and be dangerous for people. People often think they can reinforce the chimney with a steel strap, but these straps often don't hold the entire chimney in place. This is why we recommend dismantling or replacing this type of chimney as the safest solution."

The CRMP website provides detailed information about the structural risks and retrofit recommendations for different home designs. Built before 1980, stem-wall houses require foundation anchoring to prevent the building from sliding off its foundation. Cripple-wall homes have wood-framed walls between the foundation and a wood-framed first floor, as well as a crawl space underneath. These homes benefit from anchoring and plywood reinforcement. Post and pier houses have no continuous



concrete foundation and are "particularly vulnerable to shifting" and potential collapse. Houses with living spaces over an attached garage also require strengthening. Hillside houses, if not braced to withstand earthquakes, may suffer significant damage or collapse in a strong quake. "Scientists didn't understand plate tectonics until the 1960s," says Maffei. "Seismic building codes became stronger after the 1971 San Fernando Valley earthquake. Thus, houses constructed after 1980 have a stronger foundation as a result, but pre-1980 houses may have greater earthquake vulnerability, and pre-1940 homes definitely do."

The United States Geological Survey (USGS) has published the "HayWired Earthquake Scenario," a document that investigates earthquake hazards, engineering implications and societal consequences, in addition to a handy fact sheet. According to the publication, "more resilient buildings constructed to more stringent building codes could allow 95 percent of the Bay's region population to remain in their homes and workplaces," even after an M 7.0 earthquake.

Maffei says it's vital to do your homework when you plan your retrofit, from understanding your home's vulnerabilities to hiring a licensed contractor to complete the work. She strongly recommends the FEMA P-1100 document, "Vulnerability-Based Seismic Assessment and Retrofit of One- and Two-Family Dwellings." The document outlines the entire process, from detailing the variety of necessary retrofits to what to ask a potential contractor in terms of licensing, credentials and experience.

There are also "plan sets" for most home designs, an invaluable tool, says Maffei. "These construction documents involve the plans for the specific house. These plan sets are pre-engineered to eliminate a typical problem for houses, including measurement tables that correspond with the house—for example, the number of bolts for anchors, required feet of plywood, number of nails and size and numbers of clips. They're really not unlike an IKEA

plan we might use to put together a bookcase. Because they are pre-engineered, a homeowner doesn't have to pay for new engineering."

Protecting your home during a major earthquake through a seismic retrofit is a great decision in terms of both personal safety and economic security. To put this in perspective, houses that slid off their foundations after the Napa earthquake required an average of two years before inhabitation. That's two years of living outside of one's home while still paying the mortgage and other utilities.

"To paint this with a broad brush," she says, "we are going through the pandemic and we feel especially vulnerable when it comes to control over our lives. We're also acutely aware of housing pressures at this time—this is the type of damage that can displace you. We can establish some control, however, by taking the time to strengthen our houses with the plan sets and a licensed contractor. If seismic retrofit is within your grasp and budget, it will make you and your family more resilient when the next earthquake strikes."

Maffei offers another benefit of strengthening your home for the next "Big One," and that is asserting control in these challenging times.

The HayWired Earthquake Scenario predicts that more than one million Bay Area residents could face extensive damage to their homes after a major earthquake on the Hayward Fault. The California Residential Mitigation Program highly recommends preparing for this potentially catastrophic event by strengthening your home. It might very well make all the difference for you and your loved ones. Visit StrengthenMyHouse.com to begin your preparation today. ■

CALIFORNIA RESIDENTIAL MITIGATION PROGRAM + **THE STORYSTUDIO**

PLANNING

Have emergency kits ready

Packaged kits (below) are available from retailers. If you assemble your own, here's the minimum it should contain, according to the Red Cross. For the car, much of the gear is best placed tightly into a backpack to save space. At home, most items can be stored in a basic outdoor garbage can.



Carlos Avila Gonzalez / The Chronicle 2017

FOR THE CAR

Water: A three-day supply amounting to 1 gallon per person per day.
 Food: A three-day supply, about 1,000 calories — something lightweight like energy bars
 Water purification tablets, or a water filter in case you go beyond three days and need to find alternate sources of water.
 Portable radio
 Flashlight and/or light stick
 Charger for cell phones and devices, powered by batteries, along with a cell phone charger cord for the car
 Batteries
 Blankets: Emergency survival models are compact and light
 Tube tent
 Sanitation and personal hygiene supplies, including toilet paper
 Leatherman-style multitool or pocket-knife with can opener, screwdriver heads and knife blade
 Poncho or other rain gear
 Candles
 Waterproof matches
 50 feet of rope (3/16 or bigger)
 Duct tape
 Work gloves
 First-aid kit
 Sewing kit
 Whistle
 Smoke/dust mask
 Gas meter valve shut-off wrench
 Instant hand warmers

FOR THE HOME

All the previous items, plus:
 Medications, at least a seven-day supply
 Cash: Small bills and coins
 Tools: Foldable shovel, hatchet, screwdriver, pliers, pocketknife and can opener
 Extra clothes
 Battery-powered lamp
 Plastic sheeting (for emergency shelter)
 Paper or plastic plates, bowls and cutlery
 Small cooking pot
 Soap and bath towels
 Copies of personal documents
 Emergency contact list
 Maps of the area

OTHER ITEMS TO CONSIDER

Additional medical supplies (hearing aids, glasses, contacts, syringes, etc.)
 Baby supplies
 Games and toys (for children)
 Pet supplies
 Two-way radios
 Extra car and house keys
 Scissors
 Sleeping bags

PLANNING

The tech you need when disaster strikes

By Anna Kramer

Power blackouts and poorly-thought-out evacuation alert systems have left Californians without critical information during natural disasters in the past.

But there are some free apps for your phone, numbers to text, systems to register for and technology to buy that could ensure that you have the most accurate and up-to-date information when disaster strikes, even during a power blackout.

To best ensure you get critical information when you most need it, it's best to choose a diverse range of disaster preparedness technology options in case any one particular solution fails. The Federal Emergency Management Agency also reminds people that mobile networks can become overwhelmed in a crisis, and it is often easier to receive information via text than over a phone call or on an app during those times.

All of these apps are available for iOS in the Apple App Store or Android in the Google Play store unless otherwise indicated.

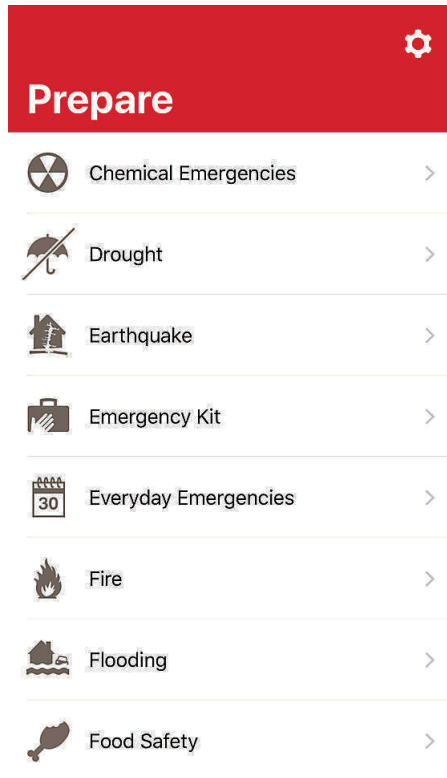
FREE APPS

MyShake: The MyShake app will send ShakeAlert earthquake warnings to enrolled Californians. The app broadcasts earthquake early warnings issued by the state's ShakeAlert system, which uses a network of earthquake detectors to provide seconds of early warning of a quake. Android phone users will receive the ShakeAlert warnings regardless of whether they have downloaded the app because of a partnership between Google and the Governor's Office of Emergency Services.

FEMA Mobile: The federal disaster-relief agency's official app will allow you to set weather alerts from the National Weather Service for up to five locations within the United States, which provide information about wildfire risks, dangerous storms and heat waves. You can also share emergency alerts, prepare a disaster checklist and learn preparedness tips. The app is also available in Spanish.

American Red Cross: The nonprofit provides a number of free emergency alert apps for download, including an all-inclusive Emergency app and one specifically for earthquakes. Other apps also include one called First Aid, which provides information if you need to render first aid.

Zello: This app can turn your phone into a walkie-talkie, allowing you and anyone



American Red Cross

The American Red Cross First Aid app, one of several it offers.

else with the app to communicate via short audio messages. It can be a helpful way to stay connected to others during an emergency, or to make quick contact with separated family members.

5-0 Radio Police Scanner: You can listen to live police scanners using this free app, including San Francisco's City Police Dispatch and San Francisco fire and emergency medical services. Police scanners can sometimes provide useful information during natural disasters.

COUNTY-SPECIFIC APPS

Alameda County: To enroll in the county's AC Alert system, download the Everbridge app and search for AC Alert. The system allows you to provide multiple methods of emergency contact and other useful information. You can also register for AC Alert at www.acalert.com.

Santa Clara County: The ReadySCC free mobile app helps you create an emergency preparedness kit and an emergency preparedness family plan, including important emergency contacts and links to resources and information.

PHONE AND EMAIL

You can register your phone and email address for location-specific alerts with local and federal government sources.

If you text "PREPARE" to 43362, your phone number will be signed up for FEMA text alerts and emergency preparedness tips.

Save the number 43362 in your contacts. If you text this number with the word "SHELTER" and your ZIP code, you can find open shelters.

COUNTY-SPECIFIC ALERTS

For most Bay Area counties, you can sign up for local government and public safety alerts, including emergency warnings, via Nixle by texting your ZIP code to 888-777.

You can also fill out an online registration form to receive alerts via phone or email for some Bay Area counties. Search your local county government website for information on signing up in Marin, San Mateo, Santa Clara, Sonoma and Solano counties.

TWITTER

You can also receive useful information from emergency alerts shared on county and other government Twitter accounts.

San Francisco: @SF_Emergency

Contra Costa: @ContraCostaFire, @CCCCounty and @CoCoCWS

Marin: @AlertMarin, @MarinSheriff and @MarinCountyFire

Alameda: @AlamedaCoAlert, @AlamedaCoFire and @AlamedaCoSheriffs

Napa: @napacountyfire, @napasheriff and @CountyofNapa

San Mateo: @sanmateoco, @SMCSheriff and @SanMateoPD

Santa Clara: @sccfiredept, @SCCGov and @SCC_OES

Solano: @SolanoFire, @SolanoSheriff and @SolanoCountyEMS

Sonoma: @CountyofSonoma and @SonomaSheriff

Cal Fire: @CAL_FIRE

WIRELESS EMERGENCY ALERTS

Federal agencies like the National Weather Service and local governments use a system called Wireless Emergency Alerts to communicate with most cell

phones. The alerts are usually accompanied by a sound and vibration pattern so that users can identify their importance.

But in areas with poor or no cell phone service, the alerts may be critically delayed or not arrive. Some people have reported that they did not receive essential emergency alerts when they were supposed to. Other apps and messaging systems that rely on Wi-Fi and data plans may help fill in the gaps left by the wireless emergency alert system.

The federal Emergency Alert System is a separate system that uses broadcasters and satellite providers to broadcast emergency warnings to television and radio. If you cannot access cell service or the internet, turning on a radio or television during an emergency may help you get the critical information you need.

Both the WEA and the EAS are part of the Integrated Public Alert and Warning System, which also uses digital road signs and sirens as alternative alerting mechanisms.

KEY HARDWARE

FEMA and the California Governor's Office of Emergency Services recommends that families have an emergency charging option for cell phones in the case of a power outage. Be sure to keep at least one backup portable charger in your emergency preparedness kit.

Most state and local emergency preparedness lists recommend finding a battery-powered or hand-crank radio so that you can get information if you cannot access the internet or any cell-based technologies. Some lists also recommend extra batteries and a portable drive or cloud-based storage with scans of important documents, like insurance information.

If cell and internet networks are knocked out during a natural disaster, satellite phones can be an option to stay in touch because they rely on a network of satellites unaffected by natural disasters.

Though expensive, there are a few satellite phones commonly recommended for emergency use, including the Inmarsat IsatPhone 2 and the Iridium 9555. Some retailers have offered the Inmarsat for free alongside a yearly plan, and it may be worth exploring if you're willing to spend somewhere between \$50 and \$100 a year to keep a satellite phone active for emergencies.

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PLANNING

Get financial, insurance documents in order

By Kathleen Pender

Part of getting ready for a disaster is getting your financial house in order.

Thousands of people who have lost homes in the California wildfires discovered too late that their insurance coverage had not kept up with the rising cost of lumber, labor and other rebuilding materials. Talk to your insurer to make sure you have enough coverage but, for a quick reality check, ask a local contractor how much it costs to build per square foot and multiply that by your home's size.

One of the most painful post-disaster tasks is compiling an inventory of possessions so you can seek reimbursement for the contents coverage. It's far easier to put the list together beforehand.

Here are other tips for shoring up your finances:

Safeguard your documents: Keep a copy of your will, trust, birth and marriage certificates, Social Security cards, insurance papers, medical information, most recent tax return, receipts for high-ticket items and other important documents in a safe deposit box. You can also scan and save them to a DVD or flash drive, which you can give to a trusted friend or family member outside the region. Another option is to save them in the cloud.

Break out the camera: Your insurance will pay for everything you lost — up to your policy limits — as a result of a covered “peril,” such as fire or windstorm. To get reimbursed for your personal belongings, most companies require a detailed inventory of every



Noah Berger / Associated Press

Flames consume a home as the Quail Fire burns near Winters (Yolo County) in June. It's important to make sure your insurance has kept up with the rising cost of rebuilding.

item lost, although some will advance a portion of your contents coverage without this list. While your house is still standing, use an online inventory or app or print a blank one from the California Department of Insurance or consumer group United Policyholders. Store it away from your home or better yet, in the cloud. At the very least, take photos or videos of everything in your home and outbuildings, including the inside of drawers, cabinets and closets.

Know your coverage: Most policies will pay for losses from fire, smoke, wind, hail, water (excluding floods), vandalism and theft. They do not cover losses caused by earthquakes and floods. Those require separate policies.

Make sure you have re-

placement-cost coverage. This will pay to replace your building and contents — up to your policy limits — with new ones of similar kind and quality. Avoid actual cash value policies, which pay only the depreciated value of what you lost.

It's good to have extended replacement-cost coverage, which will pay a certain amount — 20 percent or more depending on the insurer — above your policy limits. This can help pay for the surge in local building costs that often follows a widespread disaster. Also opt for building code upgrades, which will pay an amount over your policy limit to comply with new code requirements. A guaranteed replacement-cost policy will pay to replace your house no matter the cost, but these are not common and very expensive.

In response to wildfires, more insurers have refused to write or renew policies in high-risk areas. Recent legislation has clamped down on non-renewals in and around disaster areas in California. For homes with a total loss due to a declared disaster, these insurers must offer to renew the policy for at least the next two annual renewal periods or 24 months, whichever is greater. It also requires an insurer to extend additional living expense coverage for up to 12 additional months, for a total of 36 months, if people encounter delays in the reconstruction process that are beyond their control.

For homes that are not damaged or destroyed in a disaster, but are located in a ZIP code within or adjacent to a fire disaster, an insurer cannot cancel or refuse to

renew a residential property insurance policy for one year after the declaration of a state of emergency. Cal-Fire determines the fire perimeter, and the insurance commissioner announces which ZIP codes are included.

Homeowners who can't get covered by a mainstream insurer may need to seek coverage from a “non-admitted” carrier, such as those affiliated with Lloyd's of London. Also called surplus lines, these insurers are far less regulated than admitted carriers and do not participate in the California Insurance Guarantee Association, which pays claims if an admitted carrier fails.

If you can't get insurance elsewhere, contact the California Fair Plan, which provides insurance for the home or contents from fire or lightning, internal explosion and smoke. For an additional premium, you can add extended coverage (for windstorm, hail, explosions, riots, aircraft, vehicles and volcanic eruptions as well as vandalism/mischief). You can purchase a Fair Plan policy from a licensed agent or broker or contact the plan directly at 800-339-4099. This year the Fair Plan increased its maximum coverage limit to \$3 million from \$1.5 million per home.

Quake and flood coverage: Your homeowners or renters insurance company can provide a National Flood Insurance Policy and a quake policy from the California Earthquake Authority. A few companies sell stand-alone earthquake insurance, and several offer private flood insurance in California.

PLANNING

Make sure your pets are safe and provided for



Megan Cassidy / The Chronicle

A horse stands near the remains of a hilltop home destroyed by the LNU Lightning Complex fire in Sonoma County in August.

- ▶ All pets should be identified with tags and, preferably, microchips.
- ▶ In an emergency, dogs tend to bolt and cats tend to hide. Be prepared for unusual behavior. If your dog behaves erratically when Fourth of July fireworks go off, expect much more of the same during a quake or fire.
- ▶ Keep on hand a pet first aid kit, with disinfectant, bandages, tweezers and antibiotic ointment.
- ▶ Store a week's worth of pet food, and periodically check its expiration date. Canned food will keep longer than dry. Make sure to have plenty of extra water, more than you think you'll need. Pets (and people) drink more when under stress.
- ▶ Have bowls, leash, can opener, medicine, pet toys and plenty of cat litter, plastic bags or other cleanup gear ready to use.
- ▶ Train your pets to ride in a car, perhaps in a pet carrier. Remember, if you must evacuate your home, not all hotels and motels allow pets. Make a list of those near your area that do.
- ▶ Reassure your pet, calmly and often. It's good for both of you. Pets take their cues from their humans. If you're panicked, they will be, too.

— Steve Rubenstein

Be prepared to help your neighbors

When disaster strikes, trained volunteers can make a big difference in helping communities respond. Two options to participate in these types of volunteer networks are:

The Citizen Corps: The organization brings together local government, business and community leaders to prepare for a disaster.

More information on local chapters can be found on Twitter @citizen_corps or online at <https://www.ready.gov/citizen-corps>.

Community Emergency

Response Teams: CERT offers training for individuals to respond to fires, earthquakes or other disasters. More than 6,000 people participate in their communities. In San Francisco, the Fire Department organizes the free trainings for the city's Neighborhood Emergency Response Team, or NERT.

For more information: www.ready.gov/community-emergency-response-team.

In San Francisco: <http://sf-fire.org/neighborhood-emergency-response-team-nert>.

— Jill Tucker



Connor Radnovich / The Chronicle 2016

A team of Neighborhood Emergency Response Team volunteers practices carrying a mannequin on a makeshift stretcher during a NERT citywide drill in 2016.

WILDFIRES





Cal Fire and U.S. Forest service firefighters battle a wildfire on the Big Sur coast in Monterey County in late August.

WILDFIRES

Take steps to protect your property



Carlos Avila Gonzalez / The Chronicle

Kenny Wainright, whose family has run the Nichelini Winery for 130 years, puts out a spot fire near his great-grandparents' cabin at the winery, which was threatened by the Hennessey Fire near St. Helena in August.

Create a defensible zone: You don't have to strip everything down to dirt, but minimizing fuel danger is the goal. (See graphic for details.)

Avoid flammable plants: Bamboo and oily eucalyptus can light like a match head. Opt instead for high-moisture succulents such as aloe or fire-resistant hardwood trees such as maple.

Consider the weather: Don't operate any power tools to trim vegetation when the weather is hot and windy because sparks can light the

yard in a twinkling.

Inspect power lines: Notify Pacific Gas & Electric Co. whenever you notice power lines brushing up against tree limbs, or close enough for a strong wind to slap them together. Its crews can come trim the trees. Several big fires, including 2018's Camp Fire in Butte County, were sparked by power lines hitting vegetation or other power lines.

Assess roofing materials: Roofs should be made of flame-retardant materials, such as metal, asphalt

composition shingles or clay tiles. Make the overhangs as wide as possible — in the Wine Country fires, some homes fared better with flying embers when they had fire-resistant overhangs of 4 feet or more to keep them from hitting the walls.

Locate the gas valve: Know where your gas shut-off valve is, and keep a wrench next to it. If you see a wildfire getting dangerously close, shut off the gas — and any propane tanks you might have around.

Have a wildfire plan: In just two minutes, a house fire can become deadly, according to the Department of Homeland Security. In five minutes, a house can become fully engulfed in flames. Plan for the worst.

Understand your risk: Cal Fire maintains maps of areas prone to wildfire, and cities and counties are required to keep safety plans that contain procedures for evacuations and communications.

— Kurtis Alexander and Kevin Fagan

What you should do if you get trapped

Here are Cal Fire's recommended courses of action if you become trapped and can't make your way to safety.

IN YOUR CAR

- ▶ Stay calm.
- ▶ Park your vehicle in an area with little vegetation.
- ▶ Close all of your vehicle's windows and vents.
- ▶ Cover yourself with a wool or cotton blanket or jacket.
- ▶ Lie on the vehicle floor.
- ▶ Call 911 and advise rescue personnel of your location.

ON FOOT

- ▶ Stay calm.
- ▶ Find an area clear of vegetation — a ditch or depression in level ground if possible.
- ▶ Lie face down and cover your body.
- ▶ Call 911 and advise rescue personnel of your location.

IN YOUR HOME

- ▶ Stay calm and keep your family together.
- ▶ Call 911 and advise rescue personnel of your location.
- ▶ Fill sinks and tubs with cold water.
- ▶ Keep doors and windows closed but unlocked.
- ▶ Stay inside the house.
- ▶ Step away from outside walls and windows.

Source: Cal Fire

How to create a defensible zone

A defensible space is a buffer zone around the buildings on your property that can increase the chances of your home surviving a wildfire. The space is necessary to slow or stop the spread of wildfire, and it helps prevent your home from catching fire. It also protects the firefighters who may have to defend your home. For more information on how to prepare your home and yard against wildfires, go to the Cal Fire website www.readyforwildfire.org.

ZONE 1

Clear dead leaves and plants from within **30 feet** of the home. Trim tree limbs to at least 6 feet above the ground. Clear all dead limbs, leaves and other vegetation from the roof and rain gutters.

ZONE 2

In the area within **100 feet** from the home, cut grass to a maximum height of 4 inches. Allow ample space between trees and shrubs so flames won't jump easily between them. Consult a landscape specialist to learn how wide that space should be — it varies from yard to yard.

1 Roof

The most vulnerable part of your home, it should be made of flame-retardant materials. Homes with wood or shingle roofs are at higher risk of being destroyed in a wildfire.

2 Chimney

Cover it with a non-combustible screen.

3 Garage

Have a fire extinguisher and tools such as a shovel, rake, bucket and hoe available for fire emergencies. Store combustible and flammable liquids away from ignition sources.

4 Deck

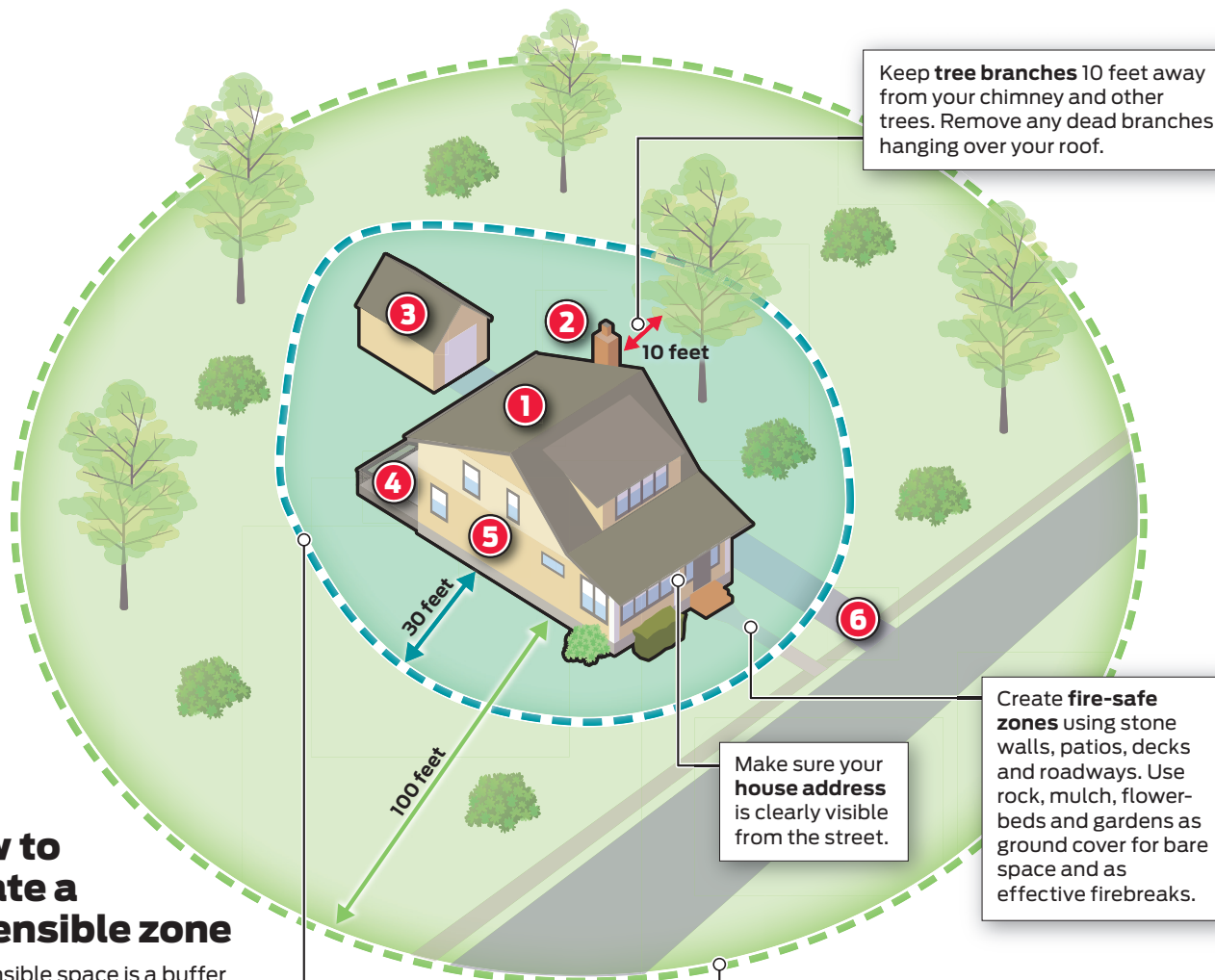
Surfaces within 10 feet of the building should be built with ignition-resistant or noncombustible materials. Remove combustible items from underneath your deck.

5 Windows

Heat from a wildfire can break windows even before the house ignites. This allows burning embers to enter and start fires inside. Single-pane and large windows are particularly vulnerable. Install dual-pane windows with one pane of tempered glass to reduce the chance of breakage in a fire. Consider limiting the size and number of windows that face large areas of vegetation.

6 Driveway

Driveways should be built according to state and local codes to allow emergency vehicles to reach your home. Trim trees and shrubs overhanging the road to allow vehicles to pass.



WILDFIRES

Keep flames from igniting your home

From the second a fire ignites in your home, experts say you may have just two minutes to get out before being overwhelmed by smoke and flames — and just five minutes before the entire structure is engulfed in flames. The key is to prevent the blaze from having an opportunity to get to that point. Here are things you can do:

- ▶ Check the batteries in your smoke alarms once a month, and replace them twice a year. A good rule of thumb is to replace them when you change the clocks in the spring and fall.
- ▶ Get rid of old paints and other

flammable liquids you don't need anymore, and store those you do in well-ventilated areas.

- ▶ Cover all outside vents with tight mesh of 1/8- to 1/4-inch openings to prevent embers from floating inside and igniting furniture or inner walls.
- ▶ Keep a disaster kit within easy reach of the front door — see the planning section in this guide — and make sure valuable documents such as deeds, passports and insurance policies are in one handy place to grab quickly on the way out.

— *Kevin Fagan*

Have a plan and practice

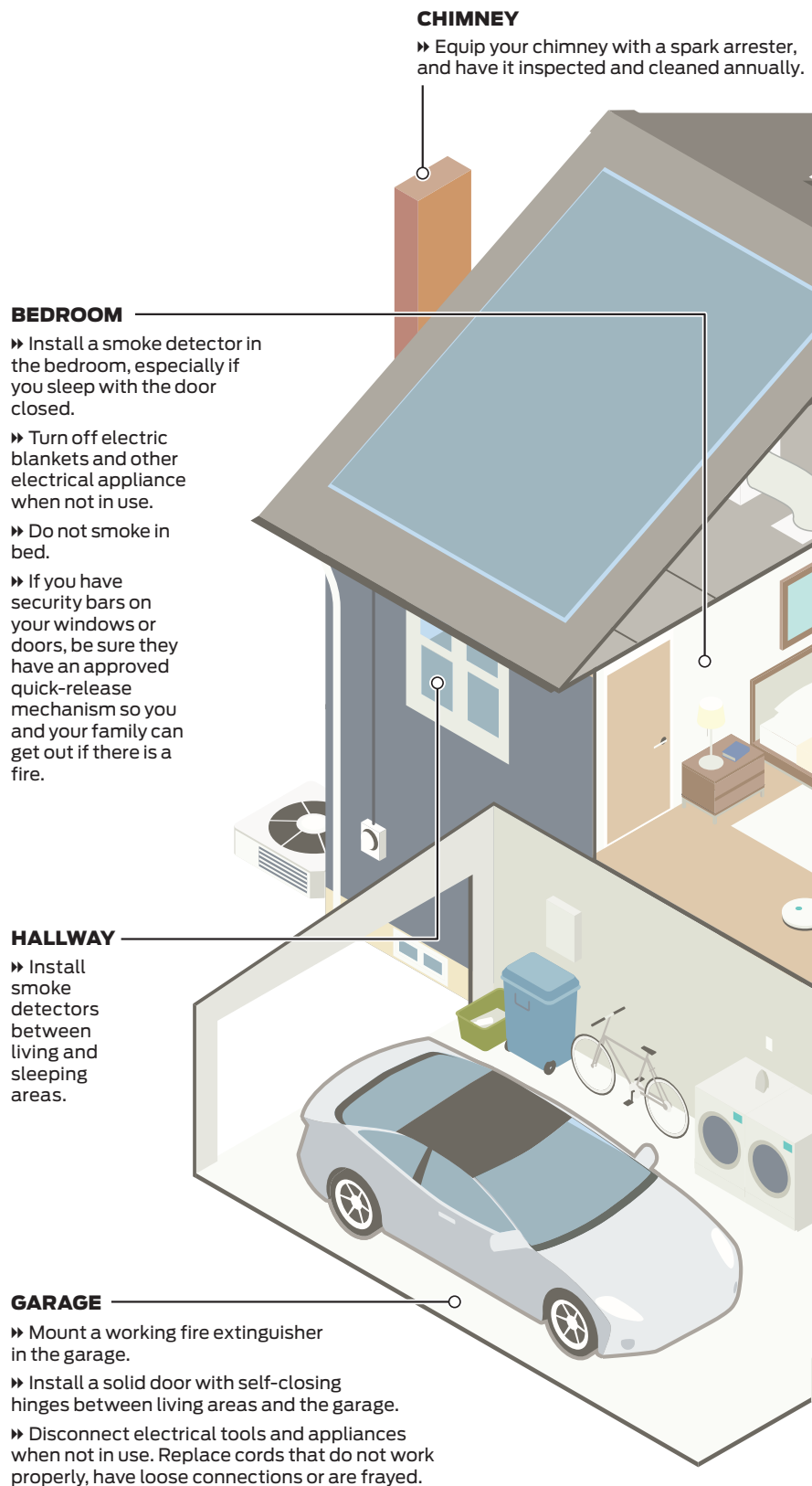
The majority of fire deaths — about 85% — happen in homes. Yet just 1 in 5 families has practiced getting out of their home in the event of a fire. Do you know how you'd escape from each room if a fire breaks out? If the answer is no, it's time to make a plan and practice.

- ▶ Walk through your home and identify exits and escape routes, making sure doors and windows can be easily opened.
- ▶ Install alarms in every room where someone sleeps.
- ▶ Keep hallways and stairs free of clutter.
- ▶ Choose a meeting place outside — say the nearest stop sign or light post.
- ▶ Assign someone to get the pets.
- ▶ Practice escape routes twice a year, making the drill as realistic as possible, according to the Red Cross. The idea is to practice, not scare children, so it doesn't need to be a surprise drill. Drills should include making sure children know not to go back for toys, not to hide and not to go near the fire.
- ▶ Teach children to “get low and

go.” Have them practice escaping each room by crawling along the perimeter to an exit and to “stop, drop and roll” if their clothing catches fire.

- ▶ If children are fearful about fire or fire drills at school or home make them anxious, try visiting a fire station or turning the drills into games, perhaps “Simon says, ‘Get low and go.’”
- ▶ For those in multistory homes or buildings, practice setting up and using escape ladders from a first-floor window.
- ▶ Not everyone may be able to get out, so family members should be taught how to insulate themselves in a room by closing doors and using towels or duct tape to seal cracks. Those who are stranded should wave a flashlight or light-colored clothing at the window so firefighters know where they are.
- ▶ Turn on emergency alert notifications on your cell phones. This will allow you to get alerts when a vegetation or other kind of fire becomes a threat. Also, sign up for your county's emergency alert system if applicable.

— *Jill Tucker*



Sources: California Department of Forestry and Fire Protection, Getty Images



BATHROOM

- ▶▶ Disconnect appliances such as curling irons and hair dryers when done, and store them in a safe location until they are cool.
- ▶▶ Keep items such as towels away from wall and floor heaters.

KITCHEN

- ▶▶ Keep a working fire extinguisher in the kitchen.
- ▶▶ Maintain electric and gas stoves in good operating condition.
- ▶▶ Don't toss water on a stovetop grease fire to extinguish it. Instead, use baking soda or put a lid on the pan to suffocate the flames.
- ▶▶ Turn the handles of pots and pans away from the front of the stove.
- ▶▶ Install curtains and towel holders away from stove burners.
- ▶▶ Store matches and lighters out of reach of children.
- ▶▶ Make sure that electrical outlets are designed to handle appliance loads.

STORAGE AREAS

- ▶▶ Dispose of oily rags in metal containers.
- ▶▶ Store combustibles away from ignition sources such as water heaters.
- ▶▶ Store flammable liquids in approved containers and away from ignition sources such as pilot lights.

Before you evacuate

When an evacuation is anticipated, follow these checklists — if time allows — to give your home the best chance of surviving a wildfire.

OUTSIDE

1. Monitor the fire situation. Don't wait for an evacuation order if you feel threatened and need to leave.
2. Check on neighbors and make sure they are preparing to leave.
3. Move propane barbecue appliances away from structures. Turn off propane tanks.
4. Gather up flammable items (patio furniture, toys, doormats, trash cans, etc.) from outside the house and bring them inside.
5. Seal attic and ground vents with precut plywood or commercial seals.
6. Have a ladder available and place it at the corner of the house so firefighters can quickly access the roof.
7. Connect garden hoses to outside water valves or spigots for use by firefighters. Fill water buckets and place them around the house.
8. Leave exterior lights on so the home is visible to firefighters in the smoke or

darkness of night.

9. Don't leave sprinklers on or water running; they can affect critical water pressure.

10. Put your emergency supply kit in your vehicle. Back your car into the driveway with vehicle loaded and all doors and windows closed. Carry your car keys with you.

INSIDE THE HOUSE

1. Remove flammable window shades and curtains.
2. Turn off the air conditioning.
3. Leave the lights on so firefighters can see the house under smoky conditions.
4. Move flammable furniture to the center of the room, away from windows and doors.
5. Shut all windows and doors, leaving them unlocked.

ANIMALS

1. Locate your pets and keep them nearby.
2. Prepare farm animals for transport, and think about moving them to a safe location early.

— K.F.

In the first critical minutes

IN THE EVENT OF A FIRE

- ▶▶ Flee the minute calamity becomes imminent, and certainly if you are told to evacuate.
- ▶▶ Take your disaster kit — and important documents — with you.
- ▶▶ Back your car into an open space to load it, leaving it pointed in the direction you plan to head. While you load up, leave the car's doors unlocked and the key in the ignition.
- ▶▶ If the fire has hit your house before you've had time to escape, check the temperature of any doorknob you need to use before you open it. A hot knob means the flames are close on the other side of the door. Pick another exit.
- ▶▶ If you have to flee through a room on

fire, crawl so you will be below the smoke level.

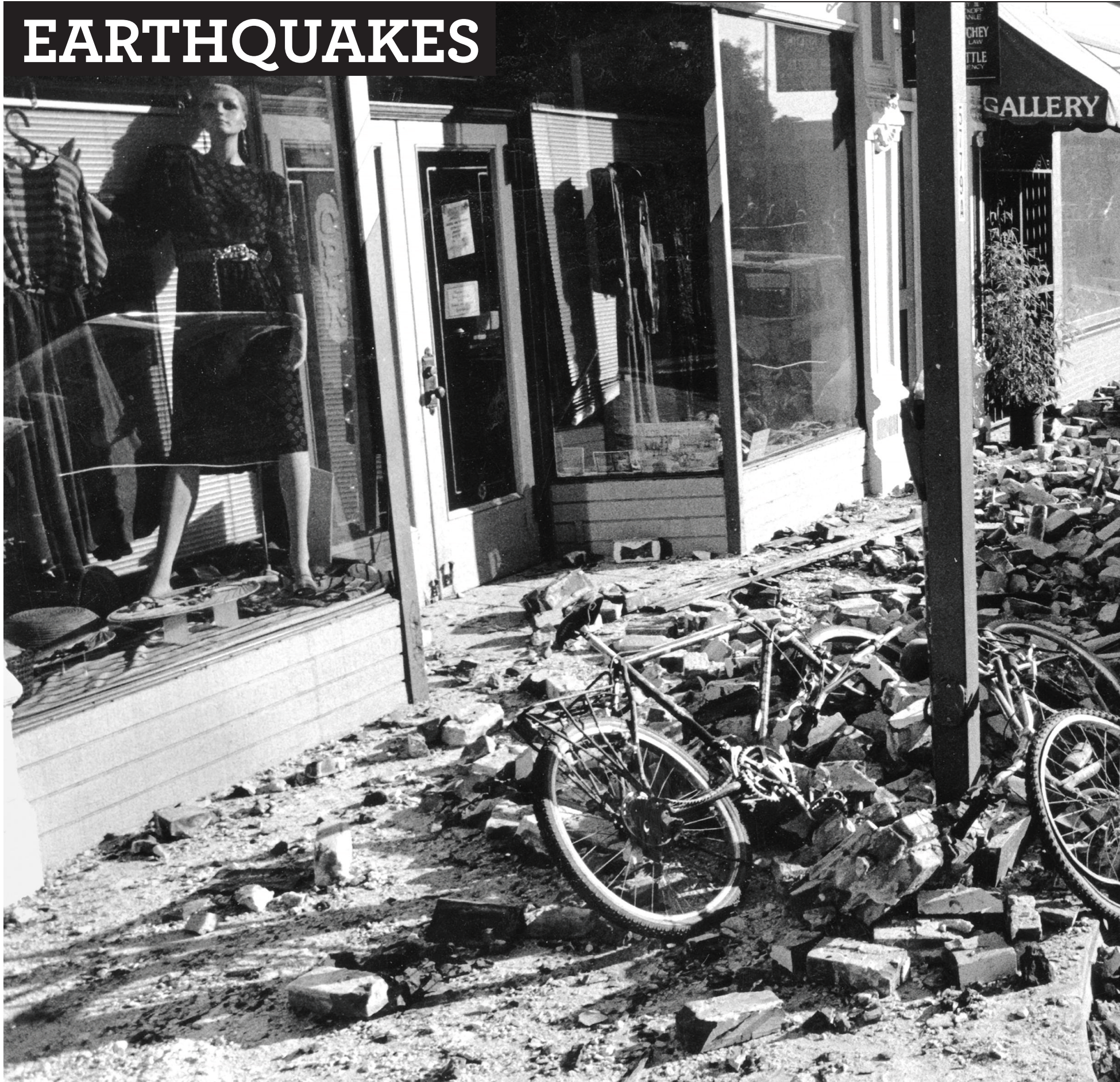
▶▶ Throw on a heavy coat to protect against burning embers.

IF YOU HAVE TIME AND WINDS AREN'T HIGH

- ▶▶ Wet down the roof of your house with a garden hose. But emergency officials say don't try to be a hero. They don't want to waste valuable time they could use to fight the fire to rescue you.
- ▶▶ To reduce or slow the spread of fire, move combustible patio furniture inside, or at least to the other side of the house from where the fire is approaching. Flaming embers will have less to ignite.

— K.F.

EARTHQUAKES





Bricks, shaken from storefronts by the 1989 Loma Prieta quake, litter the sidewalks outside the Pacific Garden Mall in downtown Santa Cruz.

EARTHQUAKES

REINFORCE CEILING

Screw plywood sheets to the attic ceiling, close to the chimney. Chimneys commonly collapse in a big quake, and this will help stop falling bricks from plunging through the roof and ceiling onto you.

FASTEN PICTURES

Attach heavy hanging objects like big pictures or mirrors to walls with screws driven into studs, not wallboard. Consider relocating heavy objects that have been hung over beds and furniture.

ELECTRONICS

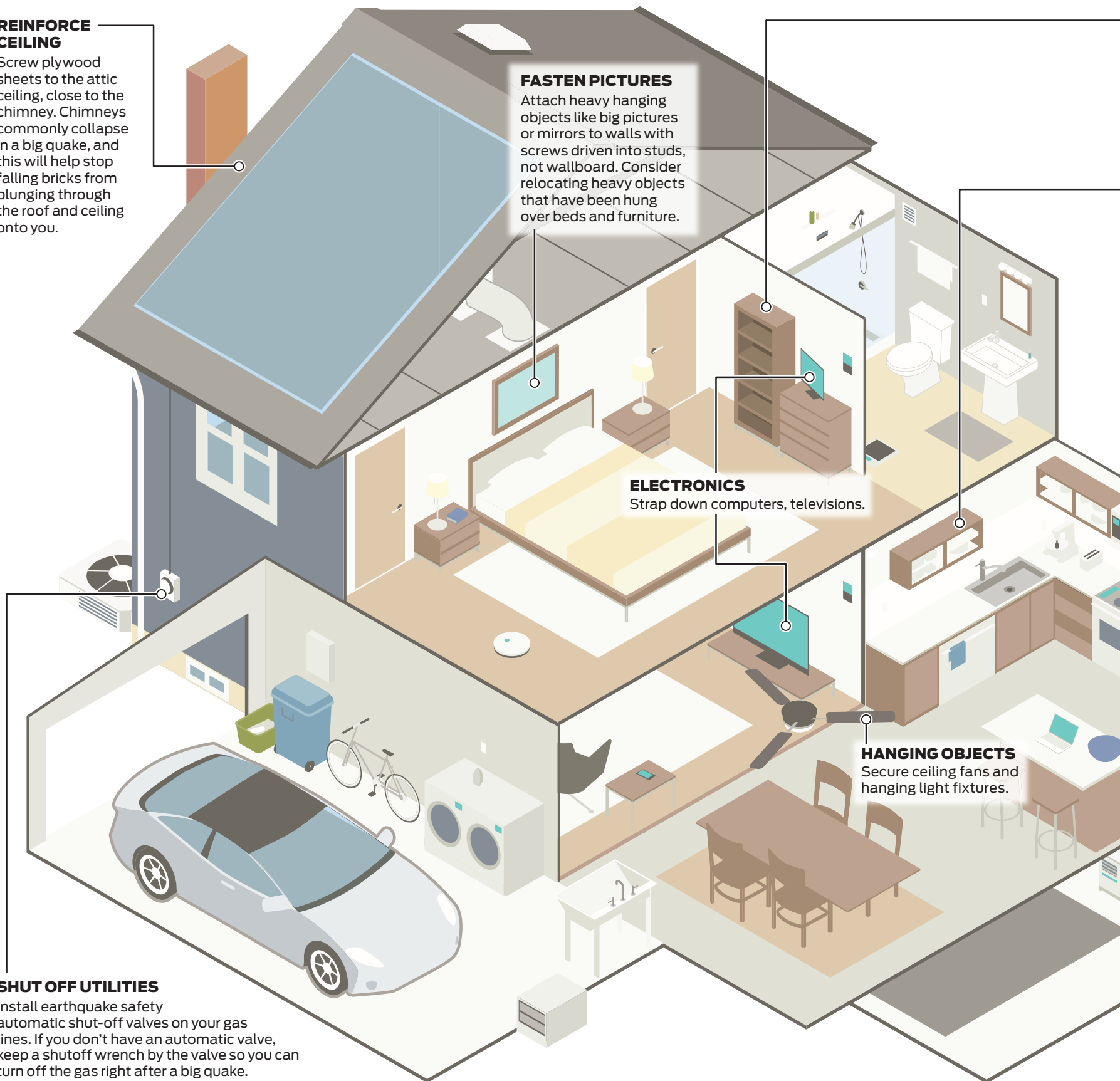
Strap down computers, televisions.

HANGING OBJECTS

Secure ceiling fans and hanging light fixtures.

SHUT OFF UTILITIES

Install earthquake safety automatic shut-off valves on your gas lines. If you don't have an automatic valve, keep a shutoff wrench by the valve so you can turn off the gas right after a big quake.



Know how to react when a quake hits while you're home

SECURE HEAVY FURNITURE

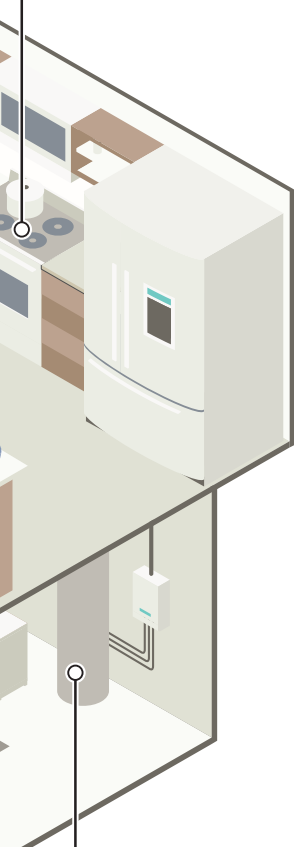
Attach bookcases, china cabinets and other heavy furniture to walls using L-shaped metal brackets screwed into the studs to prevent tipping.

DOOR LATCHES

Fit the doors to all cupboards and cabinets with child-proofing latches so they don't pop open during a quake, flinging everything out and at you.

GAS APPLIANCES

Ensure they have flexible connections.



SECURE WATER HEATERS

Brace your water heater against the wall with metal straps screwed into studs, and ensure that gas models have flexible connections.

The national Ready Campaign says families should be able to answer these questions:

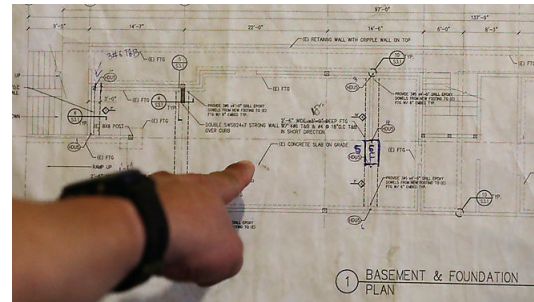
How will I receive emergency alerts and warnings?

What is my shelter plan?

What is my evacuation route?

Here are practical tips on how to prepare for an earthquake:

- ▶▶ Gather the family and create a plan together.
- ▶▶ Pick safe places in each room to take cover in when the shaking begins — under furniture or against an interior wall away from windows, bookcases or tall furniture that could fall. Stay away from kitchens and garages, which tend to be the most dangerous places in a home because of the objects kept there. Also, doorways are not stronger than other parts of the house, so don't rely on them for protection.
- ▶▶ Practice "Drop, cover and hold on" in each safe place — and schedule drills every six months.
- ▶▶ Conduct a "hazard hunt," looking for objects that could fall or fly through the air.
- ▶▶ Put a working flashlight and shoes next to each bed.
- ▶▶ Teach everyone to knock on something three times repeatedly if trapped.
- ▶▶ Identify a safe place outside to meet after the shaking stops.



Lea Suzuki / The Chronicle 2018

Seismic retrofits can be expensive, but they're worth it, and may even be required.

- ▶▶ Designate an out-of-state person for everyone to call to relay information to.
- ▶▶ Assign someone to turn off the gas and to gather pets.
- ▶▶ Create an earthquake kit as a family, and include one comfort item per child, like a teddy bear or toy, as well as activities or children's books.
- ▶▶ Talk about what to do if an earthquake happens while family members are at school or work — reassuring young children that they will be safe until picked up while also creating a meeting place for adults and older children.

— Kevin Fagan

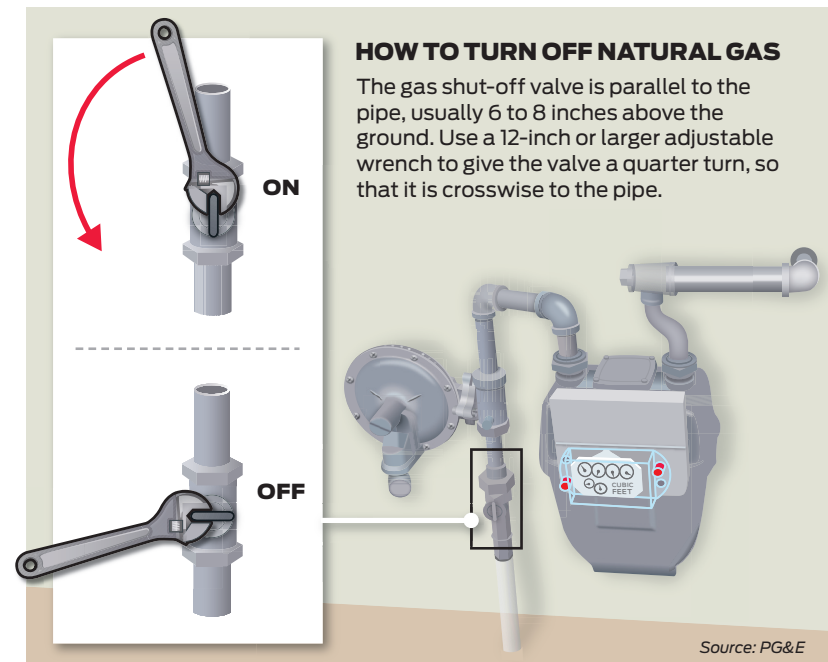
What to do in the critical first minutes

- ▶▶ Drop, cover and hold on. That means if you're inside, drop to the floor, find cover under a heavy table and hold onto that table until the shaking is over.
- ▶▶ If you're outside, dash away from buildings or large trees to as open a space as you can find.
- ▶▶ If you are driving, pull over to the side of the road. Avoid overpasses, bridges, power lines and other things that could crash onto your car.
- ▶▶ If it's a severe quake, a tsunami might follow — so get to higher elevation once the shaking stops.

— K.F.

Fortify the foundation

- ▶▶ Secure your house to its foundation with anchor bolts, if it hasn't already been done. It will help prevent the structure from sliding off its foundation.
- ▶▶ Install extra wooden sheathing along the home's cripple walls — those short walls in the crawl space between the foundation and floor. That will also help keep the house on its foundation.
- ▶▶ If you live in a soft-story house, meaning the first floor is not well reinforced and could collapse in a big temblor, it's recommended to spend the considerable amount of money it will take to have it retrofitted. Or if you don't own the building, talk to the landlord about this. In some cases, the retrofit is required by local law.
- ▶▶ For a mobile home, install braces or a tie-down system underneath to keep your house from collapsing during the shaking.



HOW TO TURN OFF NATURAL GAS

The gas shut-off valve is parallel to the pipe, usually 6 to 8 inches above the ground. Use a 12-inch or larger adjustable wrench to give the valve a quarter turn, so that it is crosswise to the pipe.

Source: PG&E

FLOODING





Floodwaters inundate Guerneville as the Russian River overflows its banks in February 2019.

Noah Berger / Special to The Chronicle 2019

What to do when the water suddenly surges around you

- ▶▶ Seek high ground — with an emergency kit if you have one.
- ▶▶ If time allows, secure your home before leaving. Move valuables upstairs or to higher areas, disconnect electrical appliances, tie down outside furniture and seal basement vents.
- ▶▶ Consult a reliable weather source such as www.weather.gov or a weather radio about safe places to go and safe ways to get there.
- ▶▶ Do not walk or drive through floodwater. Most flood-related drownings occur when someone drives into high water, according to the Centers for Disease Control and Prevention. The second leading cause of drownings is walking into high water. Turn around and go the other way.
- ▶▶ Should your vehicle stall out, leave it. Don't wait on the roof. However, if the water is rushing and you have a sense that you'll be swept away, stay put.
- ▶▶ If you live in an area prone to landslides, consult a geotechnical expert to assess the risk. Have an evacuation plan. Watch for tilted trees and leaning telephone poles. If you hear a rumbling sound that could signal a slide, get out.

— Kurtis Alexander



Santiago Mejia / The Chronicle

People look out their window as floodwaters cover Mirabel and River roads in winter 2019 in Forestville (Sonoma County).

How to react if chemicals foul the air

- ▶▶ Comply with emergency orders. Consult the fire department, a reliable media source or a public safety alert system about what to do.
- ▶▶ If you're ordered to evacuate, don't panic. Let others in the building know the situation, then grab your wallet, phone and keys, as well as your emergency kit if you have one, and leave.
- ▶▶ If you're ordered to shelter in place, close exterior doors and windows and move toward the center of the building.
- ▶▶ Await further instructions before returning to your normal routine.
- ▶▶ The federal Emergency Planning and Community Right-to-Know Act, passed in 1986, requires industries to report any hazardous materials they use. If you really want to be prepared, check out the inventory lists kept by county health agencies and local fire departments.

— K.A.

RECOVERY



Evacuees Sharon Whitaker and her daughter Shawnee Whaley (right) take refuge at the Red Cross Shelter at the Ulatis Community Center after fleeing the LNU Lightning Complex Fire in Vacaville in August.

RECOVERY

What to expect after surviving a disaster

Surviving the quake or fire is just the first step. An important one, yes — but the danger and challenge are rarely over right away. You will need to push on for the next several hours, days or even weeks.

▶ If your house is livable, stay in it even if the utilities are out because officials are trying to avoid congregate shelter settings as much as possible due to the coronavirus. This is where your survival kit will prove its worth, for food, water, first aid and the rest. Be prepared to go it alone for as long as three days.

▶ You may have turned off your gas, but if you smell or suspect a leak, don't light a match or a candle or flip any light switch, which can cause a spark, until you're sure the gas danger is over.

▶ Never touch a downed power line.

▶ If you are ordered to evacuate, you may be directed to



Santiago Mejia / The Chronicle

The CZU Lightning Complex that raged in Sonoma County in September damaged the property of a resident of Forestville but left her laundry intact.

an evacuation point, not a traditional shelter.

▶ If you rent or decide not to replace your house, prepare to make relocation arrangements — signing a new lease, getting new furniture or other belongings, applying for insurance payments or governmental emergency assistance. If you are moving back into an apartment that was only damaged, the landlord is responsible for making your unit fit to live in again — but not for the loss of your personal property.

▶ Take care of yourself. Consider counseling, stay healthy through exercise and good diet, stay current with your friends — in other words, recognize that you've gone through an emotional wringer, and let yourself process the grief. Remember: To some extent, you will be rebuilding your life, and that comes one slow step at a time.

— Kevin Fagan

Finding missing loved ones

Even with the best-laid plans, family members might be unable to meet at prearranged points. Cell phones with contact information might be left behind in the rush to escape danger. Here are some tips for locating loved ones:

▶ Parents should ask child care providers or schools what their policy is for when a catastrophic disaster hits and whom they'll need to call if children need to be moved.

▶ Persistence matters. There may be several roadblocks before one contact method pans out.

▶ Try calling the people you're searching for during off-peak hours, when the working lines are less clogged.

▶ Try texting if calls aren't going through.

▶ Check social media — Facebook, Twitter, Instagram — to see if they are online.

▶ Email. Even if a phone is gone, those who are missing might still be able to log on to a computer.

▶ Call people whom missing loved ones are close to who may know where they are.

▶ Check in with their neighbors, employer, school or church — anywhere they usually hang out or spend time.

▶ For those in distant locations, try sending a snail-mail letter that has a good chance of getting forwarded if the missing person has relocated.

— Jill Tucker

Keeping yourself up to date

No power, no Internet? A battery-powered radio may be your best way to get information on what's going on.

Tune in to AM radio. In the Bay Area, KGO 810 and KCBS 740 carry regular news updates, and each is set up to run emergency information broadcasts from local authorities.

Listen for a warning siren. The city of San Francisco, for example, will blast its sirens during a major disaster, which is a cue to listen to an emergency radio broadcast. (The sirens are tested at noon every Tuesday.)

Consider buying an emergency radio. The radio includes channels that regular AM-FM radios don't get, including essential weather and disaster broadcasts from the National Oceanic and Atmospheric Administration. To find your local NOAA station, go to https://www.weather.gov/nwr/station_listing.

— Kurtis Alexander

Sources of info

If you've managed to maintain internet service, these websites may be helpful:

▶ www.sfchronicle.com and www.sfgate.com

▶ U.S. Geological Service for earthquakes: <https://earthquake.usgs.gov/earthquakes/map>

▶ Cal Fire for wildfires: www.fire.ca.gov/current_incidents

▶ Nixle for local public safety details: www.nixle.com

▶ Your county government website

▶ Social media for information on friends and family.

RECOVERY



Erik Castro / Special to The Chronicle

Soda Rock Winery owner Ken Wilson (right) with his daughter Victoria Wilson, look over the remains of his winery, which was destroyed during the 2019 Kincadee Fire in Healdsburg.

Where to turn for assistance

By Kathleen Pender

After a major disaster, you may qualify for tax relief, unemployment insurance, federal grants and low-interest loans, but it helps to act quickly. Here's where to turn:

File a claim: Contact your insurance agent as soon as possible to start a claim. If you have to move out of your house, most policies will pay for living expenses up to a certain amount of money and time. You can usually get an advance to cover temporary housing, food and other immediate needs. Some firms will give a percentage of your content coverage before you submit an inventory. If you believe your insurance company is not treating you fairly, file a complaint with the California Department of Insurance and consider hiring a public adjuster to represent you. If the treatment is egre-

gious, consider hiring an attorney.

Federal assistance: You could be eligible for individual assistance from the Federal Emergency Management Agency if your loss is part of a federally declared disaster. FEMA can provide grants and low-interest loans to cover uninsured losses, up to certain limits. For more information: www.fema.gov/individual-disaster-assistance.

Mortgage relief: If you have a mortgage, contact your loan servicer. You can usually get at least a 90-day moratorium on payments and temporary relief from foreclosure activity.

Tax relief: If your home is damaged or destroyed, you may be eligible for property tax relief. File a claim with your county assessor's office within 12 months. The assessor can reappraise the property in its current condi-

tion and potentially refund some taxes. When you rebuild, the value of your property before it was damaged will be restored. Also check with the IRS and California Franchise Tax Board to see if they have extended tax-filing deadlines for disaster victims.

If your loss was caused by a federally declared disaster, you may be eligible to deduct casualty losses that exceed 10 percent of your adjusted gross income on your federal return, if you itemize deductions.

Unemployment benefits: If you lose your job as a direct result of a federally declared disaster and are not eligible for regular state unemployment benefits, you could qualify for up to six months of unemployment benefits from a federally funded program called Disaster Unemployment Assistance. For more information: <http://bit.ly/2A73NCO>.

WILDFIRES

Understand your risk. Cal Fire maintains maps of areas prone to wildfire, and cities and counties are required to keep safety plans that contain procedures for evacuations and communications.

- ▶ www.readyforwildfire.org/Prepare-Your-Family
- ▶ www.readyforwildfire.org/Defensible-Space
- ▶ www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/fire
- ▶ <http://sparkyschoolhouse.org/app/uploads/2017/07/FPW17ParentLetter1.pdf>
- ▶ www.firefacts.org

EARTHQUAKES

LIVING IN EARTHQUAKE COUNTRY

- ▶ <https://pubs.usgs.gov/gip/2005/15/gip-15.pdf>

SURVIVAL KITS

- ▶ www.sf72.org/supplies
- ▶ www.ready.gov/build-a-kit
- ▶ <http://bit.ly/2LYtJxJ>

PREPARING YOUR HOME

- ▶ www.earthquakebracebolt.com/HomeownerRegistration

FAMILY RESOURCES

- ▶ Sesame Street Emergency Preparedness Toolkit: www.sesamestreet.org/toolkits/ready
- ▶ Family Earthquake Preparedness Checklist: www.uclahealth.org/workfiles/emergency/eq_familyprep.pdf

PET SAFETY

- ▶ www.aspc.org/pet-care/general-pet-care/disaster-preparedness

DURING AND AFTER A DISASTER

WILDFIRES

- ▶ www.readyforwildfire.org/Evacuation-Steps

FIRE RECOVERY

- ▶ <http://anrcatalog.ucanr.edu/pdf/8386.pdf>
- ▶ www.usfa.fema.gov/downloads/pdf/publications/fa_46.pdf
- ▶ www.apa.org/helpcenter/residential-fire.aspx

QUAKES

- ▶ www.earthquakecountry.org/dropcoverholdon
- ▶ www.ready.gov/earthquakes
- ▶ www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/earthquake#Before
- ▶ www.shakeout.org/california/index.html

REGROUPING

- ▶ Check in as safe and well with the Red Cross: <https://safeandwell.communityos.org/zf/safe/add>
- ▶ Search for a family member via the Red Cross: <https://safeandwell.communityos.org/zf/safesearch/search>
- ▶ Family finder phone apps: www.life360.com/family-locator
- ▶ <http://mambearapp.com>

OTHER USEFUL TECHNOLOGY

- ▶ www.amazon.com/dp/B06XCY92JV
- ▶ www.tesla.com/powerwall
- ▶ <http://powerequipment.honda.com/generators/wattage-calculator>

RECOVERY

Disaster checklist: What to do before and after

Before

- Download this guide as a PDF (sfchronicle.com/survival).
- Download apps that will be useful during an emergency.
- Compile a list of where to get emergency information, including radio stations, social networks, websites and public safety alerts.
- Keep the list in your car and in your home.
- Microchip your pets.
- Take photos of your belongings.
- Review and update your insurance coverage.
- Make copies of your important documents and store them in a safe place or on the cloud.
- Replace the batteries in your smoke detectors at least twice a year.
- Replace your smoke detectors at least once every 10 years.
- Check your fire extinguishers and make sure they and other firefighting tools are easily accessible.
- Pack emergency survival kits for your home and car — don't forget items for your pets.
- Plan and practice family escape routes from your home and establish a meeting place.
- Have family discussions about safe places in the home when an earthquake hits.
- Assign family members' responsibilities during an emergency, such as contacting other family members, turning off the gas and gathering pets.
- Know where your gas shut-off valve is and have necessary tools easily accessible.
- Maintain a defensible zone around your home.
- Notify PG&E if you notice unsafe power lines.
- Identify combustible building materials and replace them if possible.
- Prepare your home to survive a severe quake.
- Consider buying alternate power and communication devices.

After

- Seek federal assistance, mortgage relief, tax relief and unemployment benefits.
- Contact your insurance provider and start a claim as soon as possible.
- Consider counseling as you rebuild your life.
- Reach out to family — for your sake and theirs.

Preparing for disaster

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On the cover: The Camp Fire burns along a ridge near Big Bend in Shasta County on November 2018.