Being Ready Together

Emergency Preparedness Guidebook
COPE Northern Sonoma County

COPE – February 23, 2021

COPE ENDORSEMENTS

The Citizens Organized to Prepare for Emergencies (COPE) program is endorsed by fire departments, agencies and other organizations for helping Sonoma County residents become better connected and prepared for emergencies. Below are statements from a few representatives.

"…What we do together before an emergency has more of an impact to reduce damages than what we do during and after an emergency. In a worst-case scenario, knowing and helping your neighbors will make a difference. ***COPE is one program to inform, empower, and prepare together for emergencies. COPE has my full support and this document contains critical preparedness information.****"*

Fire Chief/ Battalion Chief Marshall Turbeville –
Northern Sonoma County Fire Protection District/CAL FIRE

*"…COPE has proven to be an effective source of information dissemination, neighbors helping neighbors and training during non-emergencies…****This has worked during COVID as well, since we have been able to provide help to our elderly neighbors. We know that COPE will work in any emergency."***

Fire Marshal/Division Chief Linda Collister – Healdsburg Fire Department

"… The COPE program is being built throughout the County in numerous communities… I am in full support of this program. ***It is critical to get communities connected and empowered to be prepared, react, survive, and recover from disaster... I encourage each of you to join and participate in this awesome program!"***

Fire Marshal Cyndi Foreman - Sonoma County Fire District

"… I am a major advocate for emergency preparation through community organizing. Since the 2017 Sonoma Complex Fires, I've worked with community leaders on COPE programs in the unincorporated District 4 areas… ***With the great success of our local COPE programs preparing our community for disasters, I strongly support the development of the Windsor COPE program."***

Supervisor James Gore - Sonoma County District 4

"… The growth of COPE programs in the County is building preparedness at the local level and developing resilient neighborhoods… ***Join your local COPE group, if there isn't one, consider starting one in your neighborhood.*** *Be Ready Together."*

Nancy Brown, Community Preparedness Program Manager -
Sonoma County Department of Emergency Management

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1.0 INTRODUCTION

This guidebook has been prepared for Citizens Organized to Prepare for Emergencies (COPE) Northern Sonoma County. The purpose of the guidebook is to provide Sonoma County residents resources and tools for understanding, preparing for and responding to potential emergencies in their home, neighborhood and place of business or school.

Local governments and relief agencies work hard to prepare for major emergencies. But despite their best efforts, there will be chaos for at least the first 24 to 48 hours after any major disaster. "No matter how much the County, Fire Department, Police Department, and the Town of Windsor plan, no matter how much we prepare, our resources will be completely overwhelmed immediately following a major disaster," Fire Marshal Matt Gustafson warned. "We strongly urge everyone to take disaster preparedness seriously, for peace of mind now and in the event of a disaster."

Immediately following a disaster, first responders who provide fire and medical services will likely not be able to meet the demands for services due to the scope of the emergency, number of victims, communication failures, road blockages, etc. Local neighborhoods, like our COPE Neighborhood Teams may have to rely on each other for help.

This guidebook is intended to be used as a reference to help prepare you, your family, animals and neighborhood to be better prepared for emergency situations. The first half of the guidebook provides information about planning and being prepared for an emergency. The second part of the document discusses specific emergency situations and provides suggested actions.

The information was developed for COPE Leaders and members, for educational purposes only. The guidebook is primarily a compilation of information from various agency and organization websites. We make no claims to completeness, accuracy or otherwise. We encourage you to seek professional advice from first responders or other appropriate emergency professionals. The information contained herein is free to anyone to use or not, as they personally see fit. It is not copyrighted or sold. If you have suggestions or questions regarding the guidebook, please email us at copenosoco@gmail.com.

We want to thank Diana Borges (Windsor Wellness Partnership/Windsor COPE), Dyan Urban (Soda Rockers COPE), Teri Mendelson (Northeast Geyserville COPE), Geoff Peters (Asti/Cloverdale COPE) and Julie Atwood (Halter Project) for preparation of this guidebook. We also want to thank Fire Marshal Cyndi Foreman (Sonoma County Fire District), Nancy Brown (Sonoma County Department of Emergency Management) and Priscilla Abercrombie (COPE Northern Sonoma County) for their review.

2.0 ABOUT COPE

Prevent Prepare. Respond Recover.

The COPE program was started by residents of the Santa Rosa community of Oakmont, in cooperation with the Santa Rosa Fire Department and American Red Cross, after the 2017 wildfires in Sonoma County. The mission of COPE is to help residents, families, visitors and neighbors become and remain better prepared to respond to and recover from emergency situations. This includes developing individual and neighborhood response plans, maintaining individual emergency supply kits and go bags, reducing potential risks on properties and outreaching to neighborhoods in the community. Another goal of COPE is to assure that first responders have the information they need to better protect our community.

Since the start of the Oakmont program, COPE programs have expanded to Sonoma County cities, such as Santa Rosa, Petaluma, Windsor and Healdsburg and into numerous rural areas within the county. The work COPE groups did prior to and during the 2019 Kincade Fire and the 2020 Walbridge and Glass fires was credited with significantly lowering property damage and saving lives. The COPE communication systems were able to quickly disseminate information from fire officials to their residents and neighbors helped each other evacuate their homes.

2.1 Neighborhood COPE Groups

COPE is based on the "neighbors helping neighbors" model. It assists residents to prepare for and respond to emergencies, such as wildfires, earthquakes, flooding and other potential disasters. Your COPE group is part of COPE Northern Sonoma County (County Supervisor District 4), which works closely with Sonoma County Department of Emergency Management, Northern Sonoma County Fire Protection District, Sonoma County Fire District, CAL FIRE, Supervisor James Gore and other agencies. COPE Northern Sonoma County is a non-profit group, with over 45 individual COPE communities, as of December 2020.

One of the most important aspects of COPE is that you and your neighbors will be better prepared for an emergency when no one else is available to help. By participating in your local COPE Community, you will work with your local fire agency to develop:

- Emergency communication plans.
- Emergency preparedness education.
- Neighborhood emergency plans and maps, including evacuation plans.
- Plans for vegetation removal and management and creating a Community Wildfire Protection Plan.

The COPE program is carried out by Neighborhood Leaders who provide guidance to 10 to 20 houses in their immediate neighborhood. These Neighborhood Leaders work with COPE Community Leaders who represent the larger community. If you have questions about your COPE group or the contents of this guidebook, contact your COPE Neighborhood or Community Leader. For more information about COPE Northern Sonoma County, go to https://copenorthernsonomacounty.com/.

2.2 COPE Terminology

- *Resident*: A person or party that lives in a dwelling, home, apartment, mobile home or other facility.
- *Neighborhood Team*: The people who live in 10 to 20 residences in the same neighborhood and is led by a Neighborhood Leader.
- *Neighborhood Leader*: The person who provides their neighborhood team with information, such as emergency preparedness and procedures during emergency events.
- *Neighborhood Co-Leader*: The person who supports and assists the Neighborhood Leader.
- *Community Leader:* The person who has primary responsibility for establishing the local COPE program and educating their COPE community and Neighborhood Leaders in emergency preparedness programs.
- *Community Co- Leader*: The person who supports and assists the Community Leader.

3.0 DEFINITIONS

Emergency Terms

- *Emergency:* A serious, unexpected and often dangerous situation requiring immediate action.
- *Disaster:* A serious disruption that causes widespread human, material, economic or environmental loss that exceeds the ability of the community to cope using its own resources.
- *Shelter-in-Place:* An action of residents to stay in homes to avoid dangers from a variety of different incidents; social unrest, earthquakes and pandemics as examples.
- *Stay at Home:* In Sonoma County, this is the same as Shelter-in-Place.
- *Lockdown:* A term for immediate and short-term cessation of movement when a life-threatening crisis is present. People are often instructed to secure themselves in a building or room and to not leave until the situation has changed.

Evacuation Orders and Locations

- *Evacuation Warning:* A warning issued when there is a potential threat to life and/or property. Be prepared to evacuate. Those who require additional time to evacuate and those with pets and livestock should prepare and leave.
- *Mandatory Evacuation Order:* An order issued when there is an immediate threat to life. Calmly and quickly leave the area. Re-entry into the area will not be allowed until the evacuation order is lifted.
- *Evacuation Order(s) Lifted*: The formal announcement of lifting evacuations in an area under an Evacuation Order. Everyone is allowed to enter the area but need to be aware of emergency cleanup that may still be occurring.
- *Evacuation Point/Center (Community Refuge Area):* A designated location that provides a greater level of survivability than Shelter-in-Place but does not provide long-term care as found in an Evacuation Shelter. Residents arriving at an evacuation point should be directed/transported to a designated evacuation shelter or to a subsequent transportation hub.
- *Evacuation Shelter:* A designated location that residents should be directed to, to get additional information, supplies and housing. Evacuation shelters are designed to provide at least 72 hours of care.

Road Closures

- *Hard Closure*: Road closed to all traffic except fire and law enforcement.
- *Soft Closure*: Road closed to all traffic, except fire, law enforcement and critical incident resources (i.e., Utility, Caltrans, City/County Roads, etc. or those needed to repair or restore infrastructure).
- *Resident Only Closure*: Soft closure of road with the additional allowance of residents and local government agencies assisting with response and recovery.

Weather-Related Notifications

- *Wind Advisory*: Notification issued when sustained winds of 31 to 39 miles per hour (mph) for an hour or more and/or wind gusts of 46 to 57 mph for any duration are expected.
- *High Winds Watch:* Notification issued when sustained winds of 40 mph or higher for one hour or more or wind gusts of 58 mph or higher for any duration are possible.
- *High Wind Warning:* Notification issued when a hazardous high wind event is expected or is occurring that can lead to property damage. Sustained wind speeds of at least 40 mph or gusts of 58 mph or more.
- *Fire Weather Watch:* A forecast warning issued by the National Oceanic and Atmospheric Administration's National Weather Service (NWS) when they believe weather conditions could result in extreme fire behavior in the next 24 to 36 hours.

- *Red Flag Warning:* Notification issued by NWS and can follow a Fire Weather Watch when high fire danger conditions persist. It is issued when the following conditions are anticipated to exist within the next 24 hours: sustained wind speeds averaging 20 mph or greater, relative humidity at 25% or less and conditions of dry fuel on the ground.
- *Flood Advisory:* Notification issued when flooding is not expected to be bad enough to issue a warning. It may cause significant inconvenience and caution should be exercised. Be Aware.
- *Flood Watch:* Notification issued when conditions are favorable for flooding due to a hazardous weather event. Be Prepared.
- *Flood Warning:* Notification issued when flooding is imminent or occurring due to a hazardous weather event. Take Action.
- *Flash Flood Warning:* Notification issued when a flash flood is imminent or occurring. If you are in a flood prone area move immediately to higher ground. Take Immediate Action.

4.0 GENERAL EMERGENCY PREPARDNESS

There are a number of potential hazards and threats in Sonoma County. While we often cannot predict when or where the next threat will occur, we can be prepared as much as possible for the different types of emergencies and disasters.

When an emergency or disaster hits, you may be required to survive on your own, with the help of your neighbors. It is critical to be prepared ahead of time, be flexible, look out for each other and know how to respond. Understanding the risks and knowing you're prepared can reduce fear, anxiety and losses that accompany disasters. Being prepared and responding appropriately can also save lives, reduce property damage and help first responders do their job.

There are actions that should be taken before, during and after an incident that are unique to each hazard. Sections 11 through 16 discuss the most common emergencies and threats in our area and suggested actions for each. No matter the potential emergency or threat, there are certain steps that apply to all situations.

1. Stay Informed - Sign Up for Emergency Alerts.
2. Make a Plan.
3. Know Your COPE Neighborhood Team Plan.
4. Build an Emergency Supply Kit.
5. Build a Go Bag.
6. Prepare Your Family, Property and Animals.

The steps listed above are discussed in the following sections and in appendices. Below are suggestions that are applicable to multiple emergency situations. These suggestions are in addition to those listed in Sections 11 through 16.

Personal Supplies and Preparation

- BE PREPARED AHEAD OF TIME. THE DAY OF THE EMERGENCY IS TOO LATE.
- Practice your emergency plan with all household members at least annually so everyone is familiar in case of emergency. Make sure they know your escape routes out of the home and neighborhood and your family's designated emergency meeting location outside the hazard area. Draw an evacuation floor plan.
- Have emergency and evacuation plans for pets, equines and livestock well in advance. Practice the plan so that evacuation with them will not be as stressful.
- Know your designated neighborhood COPE meeting site, any identified area of refuge and the location of your local evacuation site.

- Prepare your children in advance to reduce their level of stress and anxiety. The Ready Campaign provides advice on preparing children and teens, https://www.ready.gov/kids. Make sure your children have emergency contact phone numbers with them by completing the sheet in Appendix 1 or the Family Communication Plan at https://readymarin.org/dev/wp-content/uploads/2013/09/Family-Communication-Plan.pdf.
- Know the emergency plans for your child's school and day care facility. How will they communicate with you during an emergency? Are they prepared to shelter-in-place?
- Find out if your employer has an emergency plan and whether there are supplies available to shelter-in-place.
- Keep the gas tanks in your vehicles at least half full.
- Make sure you can open the garage door manually. If your door opener has a battery backup, periodically replace the battery.
- Keep a sturdy pair of shoes and flashlight near your bed in case of a sudden evacuation at night, an earthquake or a power outage.
- Consider learning CPR and first aid and becoming a CERT volunteer.
- Review your insurance policies to make sure they cover potential emergencies and the coverage amount is appropriate. Earthquakes are not covered under standard insurance policies.
- Take photographs or videos of inside and outside your house, including items in cabinets for insurance annually.
- If you have a safe deposit box, consider storing a backup of your computer on an external hard drive or thumb drive, copies of your important documents and photographs of your property in the box. Make sure to update the computer backup periodically. Consider using a cloud back up service or external device you can take with you.
- During an emergency, check on family members not in your household and neighbors, especially the elderly. They may need assistance preparing or evacuating.

Phones and Communicating

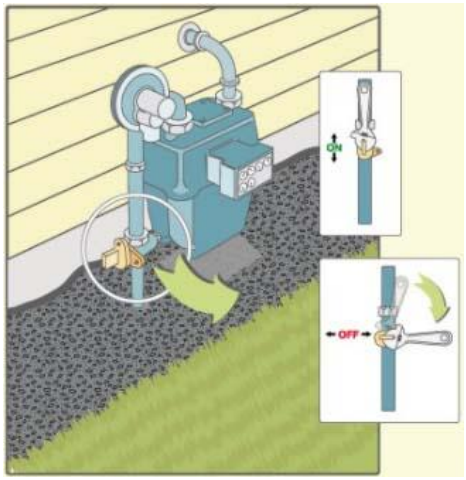
- Have an emergency charging option for your phone and other mobile devices so you can stay informed.
- Know if your home phone will work in a power outage and how long battery backup will last. If your home phone service is with your internet provider it is likely that the service is a VPN and will not work in a power outage. Cordless phones do not work without electricity.
- Upon notification of a potential emergency, make sure your electronic devices are fully charged. If the power goes out, save battery power by minimizing use and changing settings to low power or airplane mode.
- Limit non-emergency phone calls. Use text messages, social media and email to connect with friends and family during emergencies. Mobile networks can become overwhelmed during emergencies, making it difficult to make and get phone calls.

Backup Power

- Consider having a backup power supply for your home, especially if you have essential medical devices, appliances, pumps, tools or devices that you will need if the power goes out. If you purchase a generator, confirm the size will power your equipment/appliances. Always operate a generator outside and at least 20 feet away from a window.
- Keep a portable phone charger in your car at all times and consider purchasing a back-up power supply to keep in your car.
- Do not store batteries long-term inside devices to avoid corrosion. Have plenty of extra batteries for all your emergency devices.

Household Supplies and Preparation

- You are required under county ordinance chapter 13A to place 4" reflective numbers on your house and roadside to indicate your house number. Some fire departments can make reflective address signs for mailbox posts, fences etc. Individual numbers for the house can be bought online or at places like Home Depot.



- Know where the gas, propane, electrical and water shutoffs are located and how to use them. Attach a shutoff wrench to the gas meter and propane tank.
- Natural gas leaks and explosions are responsible for a significant number of fires following disasters. If you smell or hear escaping gas, shut off the gas if it is safe to do so. If not, evacuate immediately and call 9-1-1. See the image to know how to shut off the gas; lever crossways (perpendicular) to the pipe is in off position.

- If you have a locked gate to your property, consider getting a Knox locking product that will allow first responders access, https://www.knoxbox.com/. You will need to specify your location when ordering and confirm with your fire department that the product is compatible with their key. Electric gates may not work in a power outage.
- Install smoke detectors and carbon monoxide detectors in your home and garage. Install smoke alarms in every bedroom, outside each separate sleeping area and on every level of the home, including the basement. Most alarms are only good for 10 years and the older models require changing the batteries twice yearly. Hard-wired smoke alarms are the safest because when one sounds, they all sound. https://www.sonomacountyfd.org/smoke-and-co-alarms.
- Have a 2A:10B:C fire extinguisher with a metal valve in a central location, near barbeque or fire pit and in any detached garage. Have it serviced annually and make sure all older children and adults in your home know how to use it.
- Be aware of any unique hazards near your home, such as powerlines, trees or hills.

- Do not approach downed power lines or objects they are touching. Stay at least 35 feet away. If you accidentally drive over a power line or if it falls on your vehicle do not get out of your vehicle. Call 9-1-1 and wait for emergency assistance. The vehicle and the ground around you will be energized and can electrocute you if you get out of the car incorrectly.
- If water might be turned off, fill a bathtub and/or large plastic tubs with water for toilet use and pets. Put water in containers for drinking, washing teeth/dishes, etc.
- Some household chemicals (cleaning supplies, peroxide, even vinegar) mixed together can cause toxic gases or liquids. In some disasters, containers of cleaning products and other chemicals can spill and mix. It is best to not store certain items together. Do not store bleach (chlorine) near ammonia products; some window cleaners, multi-purpose cleaners, oven cleaners and toilet bowl cleaners. As a rule of thumb, never mix bleach with anything other than water because the mixture can be deadly.

After reading this guidebook, we suggest you walk through your house and around your property to envision different emergency scenarios that might occur. Knowing what you may be presented with will help you better prepare and better respond when the next incident happens.

The California Office of Emergency Services offers MyHazards, an online tool for the public to discover hazards in their area and learn specific steps to reduce personal risk. This is a very good tool to learn specific actions, such as how to secure items in your house, protect wells from contamination and much more. The link to MyHazards is https://myhazards.caloes.ca.gov/.

5.0 MAKE A PLAN

Make a personal plan to prepare your family, animals and property for emergencies. Make sure everyone in your household knows the plan. Practice the plan and update it annually. It should address home, office, school and day care.

- People and animals are your first priority.
- If you will need help to evacuate, reach out in advance to neighbors, family or friends to discuss how they can assist you and what you will need. Have a back-up plan in case the primary help is not able to assist.
- Be sure to have an extra supply of life-saving medications on hand, as well as copies of prescriptions.
- Use the My COPE and Personal Information Sheet in Appendix 1 to help start your plan.
- If someone in your household has a disability or a special need, additional preparation may be needed. Appendix 2 provides some suggestions that may be helpful.
- Remember, first responders will be overloaded in a disaster, help yourself by planning in advance!

The 6 P's

1. People and Pets. Have a plan for everyone in your household and your animals.
   - Make sure everyone knows what to do if they are at home, work, school, day care, vacation or in a car.
   - Know at least two ways out of your community.
   - Know where you will stay if you evacuate and how your family will contact each other.
   - Know how to evacuate your animals safely and where they will stay.

2. Papers, including phone numbers and other important documents. Copies of deeds, birth certificates, insurance policies and other important documents should be in Go Bags. Keep electronic copies of documents and photos on an external hard drive in a safe deposit box or at a family member's house outside of the area.

3. Prescriptions, eyeglasses and vitamins. You may be gone from your home for days, so be sure you have access to all your health-related items.

4. Pictures and irreplaceable memorabilia. These are priceless and could be lost forever.

5. Personal. Computers or any information stored on hard drives, thumb drives and disks.

6. Plastic. Credit cards, ATM cards and cash.

6.0 EMERGENCY ALERTS AND NOTIFICATIONS

It is highly important to stay informed of emergency situations by signing up to receive emergency alerts. Multiple options for notification give you the redundancy you need to ensure that you will receive life safety information. Please note that some of the systems listed below require you to sign up and some are automatic. At a minimum, we suggest you sign up for SoCoAlert and Nixle.

Sonoma County Alert (SoCoAlert): Messages issued by Sonoma County regarding the safety, property or welfare of the community are disseminated using the SoCoAlert system. You can sign up for a managed account to receive alerts through landline calls, cell phone text messages or pre-recorded verbal messages and email at https://public.coderedweb.com/CNE/en-US/BF7053564662.

Nixle: You can sign up to receive text messages from local fire and law enforcement agencies that include public safety messages, as well as emergency information. Text your zip code to 888777 to opt-in or you can sign up at https://local.nixle.com/register/.

*NOAA Weather Radio Alerts***:** Purchase a NOAA radio that has automatic alerting capabilities. The radio will remain dormant (silent) unless and until an alert for your weather area is issued, at which time it will turn itself on and broadcast the alert. If you just want to listen for alerts, you can tune into several frequencies, including 162.475 on any radio that can receive those frequencies. If you are deaf or have hearing loss, NOAA radios have add-on equipment, such as strobe lights and bed shakers to help alert everyone in the household that action is needed in an emergency.

FEMA Mobile App and Text Messages: You can download a mobile application (app) from the Federal Emergency Management Agency (FEMA) to receive alerts from the National Weather Service, learn emergency tips, locate emergency shelters and more. Go to https://www.fema.gov/about/news-multimedia/mobile-app-text-messages to sign up.

Wireless Emergency Alerts (WEA): Unless you have disabled this on your cell phone, WEA will send warning messages to your cell phone preceded by a special warning tone.

*Emergency Alert System (EAS)***:** This system sends messages to local radio and television stations who re-broadcast them. An EAS message is typically accompanied by a special warning tone.

Hi-Lo Sirens: This distinctive two-tone siren is a warning notice to alert you of the need to immediately evacuate. It is usually implemented by local law enforcement via their vehicles.

2-1-1: an information and referral service for Sonoma County. It connects Sonoma County callers, website users and texters with information about health and human services available to them. During times of disaster, 2-1-1 provides incident-specific information in coordination with local emergency services, including road closures and shelters.

PulsePoint: a 911-connected mobile phone app that allows users to view and receive alerts on calls being responded to by fire departments and emergency medical services. To sign up go to https://www.pulsepoint.org/.

MyShake App: a mobile phone app for warning of an earthquake. Some reviews indicate the alert may be received only seconds before you feel the earthquake http://earthquake.ca.gov/get-alerts/.

Facebook Pages: County of Sonoma, Sonoma Sheriff and CAL FIRE Sonoma-Lake-Napa Unit have Facebook pages and post frequent updates during incidents. Your local fire department, city and county supervisor may also have Facebook pages where you can receive information. When using social media to obtain emergency information, we suggest getting information only from an official agency or representative.

Appendix 3 discusses devices for two-way communications and provides examples of signs that can be used to inform first responders. You can also check out free American Red Cross mobile apps at https://www.redcross.org/get-help/how-to-prepare-for-emergencies/mobile-apps.html.

7.0 EMERGENCY SUPPLY KIT AND GO BAGS

Being prepared means having everything you, your family and animals will need to survive in the event of an emergency or disaster. This includes having Go Bags in case of an evacuation and a home Emergency Supply Kit, which complements the Go Bags. Although some agencies and organizations recommend having sufficient supplies in your home kit for at least 3 days, it is best to plan for a minimum of 1 week. The American Red Cross recommends having sufficient water and food to last 3 days during an evacuation (Go Bags) and a 2-week supply for your home (Emergency Supply Kit).

It is important that every household member knows where the Emergency Supply Kit and Go Bags are and that they are accessible. Expired items or soon to be expired items in the Emergency Supply Kit and Go Bags should be replaced at least once a year. Consider replacing items during the holidays so you can donate the soon to expire food to shelters, etc.

Information on Emergency Supply Kits and Go Bags is provided below, including suggested items to include. We suggest all lists in this document be reviewed and tailored to your family's needs and that specific items be listed. Remember any special dietary needs when creating your lists. You will notice some items are included on more than one list. It is up to you to decide whether it is necessary to have duplicate items in your Go Bag, Home Emergency Supply Kit, Workplace Kit and Vehicle Kit. Some of the items listed can be purchased as an already assembled kit. For information on how to assemble supplies for your animals, see Section 10, Animal Safety.

7.1 Go Bags

A Go Bag is a portable bag of survival items that is prepared in advance, in case you have to evacuate. Everyone in your household should have their own Go Bag that contains a minimum of 3 days of essential supplies. Below is a suggested list of items for your Go Bag. Pack as many of these items as possible beforehand and make a list of those that you will need to add at the last minute because they are regularly used. Use a lightweight duffle bag or backpack for each person to easily carry their personal supplies. Storing food and water in a plastic tub or a suitcase with wheels will make transport of these items easier. Make sure you can easily lift the container into your vehicle. During fire season or an emergency warning, make sure Go Bags are nearby and consider partially loading vehicles for a quick getaway. Prepare Go Bags for the family before making supply kits for your home, vehicles and workplace.

Suggested items to include:

- Food and water (minimum of 3, 8-oz bottles per person).
- Change of clothing, include socks, underwear, warm jacket, sturdy shoes and poncho.
- Baby food and supplies.
- Medications, glasses and hygiene products.
- Wallet/purse, cash (at least $100 in small bills per family), checkbook and driver's license.
- Cell phone and charger.
- Flashlight, battery or solar-operated radio and extra batteries.
- Important papers and passport.
- NIOSH N-95 or P-100 respirator, cloth facemask and hand sanitizer.
- Emergency contact and insurance information. The My COPE and Personal Emergency Information Sheet in Appendix 1 can be completed and a copy placed in Go Bags.
- First aid kit.
- Blanket or sleeping bag.
- Comfort items, especially for children; games, teddy bear, books, etc.
- Support supplies: whistle, work gloves and large plastic bags.
- Extra set of house keys.
- Maps of area.
- Paper and pen.

7.2 Home Emergency Supply Kit

Certain circumstances might arise where the safest action for you to take is to stay in your home and "Shelter in Place." This could happen after an earthquake or if roadways become blocked during a flood. If this is the case, you will need sufficient water, food and supplies to survive until conditions have changed and it is safe to travel. Having an appropriately stocked Emergency Supply Kit will be critical in determining how comfortable your family survives an emergency. We suggest that you assemble emergency food and supplies to last at least 7 days if you live in an urban area and if you live in a remote area, at least 14 days. Your items can be stored in a waterproof, covered tub or garbage can, in a garage, shed or other out-of-the-way location. In addition to preparing this kit, over time you can stock your pantry with non-perishable items to supplement your food supply in the Emergency Supply Kit.

Suggested items to include:

- Water: minimum of 1 gallon per person, per day. Replace every 6 months or at expiration date, if it was purchased in a sealed container. Water can also be obtained from your hot water heater but it is best to drain it annually to flush out sediment. Bleach and an eye dropper should be included in the kit to purify water. Add 8 drops of 6% sodium hypochlorite concentration bleach per gallon of clear water to purify into drinking water or 16 drops if the water is cloudy. Let water stand for at least 30 minutes before drinking. Information on storing and treating water can be found at https://www.ready.gov/water.

- Food: eating utensils and a manual can opener, canned and packaged foods with long expiration dates (ideally at least a year), such as
  - Ready-to-eat canned meats (tuna, etc.), soups, fruits and vegetables.
  - Protein or fruit bars.
  - Dry cereal or granola.
  - Peanut butter.
  - Crackers.
  - Dried fruit, like raisins.
  - Nuts.
  - Canned juices.
  - Non-perishable pasteurized milk.
  - High-energy foods.
  - Comfort/stress foods, especially for children.
  - Food for infants.
- Clothing: a change of clothing for each person, include underwear, socks, warm jacket, sturdy shoes and rain poncho.
- Cooking: cooking utensils, camp stove, BBQ and extra propane or charcoal.
- Warmth/Shelter: items to protect you from the elements, such as tarp and rope, sleeping bags, blankets and perhaps a tent, if your house is unhabitable.
- Medical Supplies: first aid/medical kit including pain reliever and a minimum 7-day supply of any required life-saving medications and supplies.
- Lighting: light sticks, lantern and flashlight with extra batteries and light bulbs (hand-powered flashlights are also available).
- Radio: hand-cranked, solar or battery-operated radio. Consider purchasing a NOAA Weather Radio to receive alerts and warnings.
- Support Supplies: heavy-duty plastic bags for waste and to serve other uses (such as tarps and rain ponchos), work gloves, protective goggles and cleaning supplies for clean up after a disaster.
- Toiletries: soap, toothpaste, toilet paper and feminine hygiene products.
- Money: at least $100 in small bills.
- NIOSH N-95 or P-100 respirator, cloth facemask and hand sanitizer.
- Pet Supplies: See Appendix 4.
- Documents: copies of vital documents, such as insurance policies, prescriptions, personal identification, photographs of family members and the completed sheet in Appendix 1 or equivalent.
- Tools: wrench to shut off gas/propane, multi-purpose tool, knife, scissors, matches, duct tape and fire extinguisher.

7.3 Workplace Supply Kit

Be prepared to shelter at work for at least 24 hours when an incident occurs. Your workplace kit should include food, water and other necessities like medicines and comfortable walking shoes, stored in a backpack or duffle bag. If your vehicle is at your office and you can get to it, your vehicle supply kit can supplement the items in your workplace kit.

7.4 Vehicle Supply Kit

Emergency preparedness kits for vehicles should contain a minimum of 3 days' worth of supplies. Besides including items you would need in case your car breaks down (flares, jack and jumper cables), this kit should include items that would be helpful if you become stranded in your vehicle due to a wildfire, earthquake or other emergency.

Suggested items to include:

- Water: box of 8 oz. water bottles or equivalent in the trunk.
- Food: energy bars, raisins and nuts.
- Clothing: comfortable shoes and a jacket.
- Warmth/Shelter: emergency blankets, 12-hour body warmers and poncho.
- Medical Supplies: first aid kit, hand sanitizer and disposable gloves.
- NIOSH N-95 or P-100 respirator and cloth facemask
- Lighting: flashlight.
- Radio: AM/FM emergency radio with batteries.
- Writing Implements: paper and pen.
- Key Contacts: important telephone numbers and insurance information.

8.0 EVACUATIONS

Mandatory Evacuation Order:
Mandatory order to leave now. Immediate threat to life.
The area is lawfully closed to public access.

Evacuation Warning:
Potential threat to life and/or property. Be prepared to evacuate.

During recent years, wildfires have been the main cause for evacuations in our area. But many other types of emergencies have and will happen in Sonoma County that will cause residents to evacuate. Besides wildfires, the best-known one is probably flooding along the Russian River.

8.1 Before Evacuating

Evacuation Orders are issued and enforced by the Sonoma County Sheriff's Office and City law enforcement agencies. During an incident, law enforcement will attempt to send alerts to your telephone and to your email address, as well as post the most up-to-date information on the Sonoma County Sheriff's Office website (https://www.sonomasheriff.org/) and their Facebook pages. Several other ways to receive alerts are listed in Section 5, Alerts and Notifications.

Know Your Evacuation Zone

In 2020, the Sonoma County Sheriff's Office devised a plan to divide the County into predetermined evacuation zones. These zones were determined by grouping neighborhoods that share the same escape routes. Evacuation zones for incorporated areas were issued by the local cities/towns and use different numbering systems. It is important that you know the number-letter combination for your evacuation zone. This designation will remain the same for all future evacuation incidents. You can look up your evacuation zone number by address at https://sonomacounty.maps.arcgis.com/apps/webappviewer/index.html?id=69a0e54e9e2b48c086d122027b21c961. You can also check with your COPE Neighborhood Leader to confirm the number. Make sure to write the number on your "My COPE" sheet in Appendix 1.

Don't Wait. Evacuate!

If at any time you feel in danger, you should evacuate even if an order has not been issued. It is common for traffic to be stopped or moving at a slow crawl when an area is evacuating. By leaving early, you can avoid traffic and help clear the roads for emergency vehicles. If you do not own a vehicle or if you might not have access to yours, arrange with family members, friends or your COPE Neighborhood Team to get a ride in advance. You can also contact Sonoma County Paratransit/Volunteer Wheels at (707) 573-3377 for evacuation assistance.

Know at least two evacuation routes out of your neighborhood and away from the area. It is best to have multiple routes away from your home in different directions. If an alert specifies a certain evacuation route, follow it. It may have been given for safety measures you are not aware

of. Practice the different routes so when you are under stress, the routes will be familiar. Have paper copies of maps for your area, in case your cell phone or GPS does not work and you are forced to take an unfamiliar route. If you have to abandon your vehicle once you have evacuated, move it off the road if possible so that emergency vehicles have access.

What You Do Depends on How Much Time You Have and the Type of Emergency.

Below are items to pack and suggested actions for evacuating, depending on how much time you will have before you have to leave. For convenience, the Sonoma County Emergency Management Evacuation Timeline is at the bottom of this section. Additional suggestions are listed in the emergency specific sections.

If time allows, pack more. Load your vehicle knowing your property and belongings left behind may be damaged or even destroyed. We suggest you take this list and make it specific to your family. Instead of irreplaceable items, list children's baby books, grandmother's ring, etc.

If leaving immediately:

- Go Bags, cell phone and wallet/purse.
- Pets and their Go Bags.
- Signal that you have evacuated to authorities and neighbors by tying a Sheriff-supplied ribbon to a visible location from the street: mailbox, front door or gate, if time allows.
- Leave access gates to your property and yard open and anchored so the wind does not close them, if time allows.

If you have 1 hour to evacuate add/do:

- Put on comfortable clothes and walking shoes, in case you have to walk out of an area.
- Basic toiletries.
- Credit cards and checkbooks.
- Additional clothing for at least 7 days. Include a warm jacket, sturdy shoes/boots, gloves and cap. Recent evacuations have typically lasted 7+ days.
- Keys to vehicles, house, storage sheds and safe deposit box.
- Photographs, jewelry, family heirlooms and other irreplaceable items.
- Sleeping bags and camping gear or pillows and blankets.
- Close windows and air vents. Lock exterior doors. Leave exterior lights on.
- Confirm your place to stay or locate one.

If you have more than 1 hour to evacuate add/do:

- Use phone (photos and/or videos) to record belongings, if you have not already done so or if it needs to be updated.
- Ready your property and structures for that particular emergency. See suggestions in the emergency specific sections of the guidebook.
- Take out garbage.

8.2 Returning Home

For your own safety, return home only after authorities decide it is safe to return. Evacuation orders lifted or downgraded is the formal announcement that the evacuation order is no longer in place. If the evacuation order is downgraded from a Mandatory Evacuation Order to an Evacuation Warning you may return home at your own risk. In this instance, you should continue to stay informed and be ready to leave immediately, in case conditions change and an Evacuation Order is re-issued. When you get home:

- Be alert for downed power lines and other hazards.
- Inspect your residence carefully for damage.
- Check propane tanks, regulators and lines before turning the tank back on.
- If your natural gas is off, wait for Pacific Gas & Electric (PG&E) to turn it back on. Do not restart it yourself.
- Keep all receipts from evacuating and restoring your property for insurance purposes.

BE READY | Evacuation Timeline

ITEMS / ACTIONS	IMMEDIATELY	ONE HOUR	MORE THAN ONE HOUR
Go Bag. Include prescription medications, important papers, list of contacts*	✔	✔	✔
Pets, pet supplies (if applicable)	✔	✔	✔
Credit cards, check books		✔	✔
Basic toiletries		✔	✔
Close windows, doors, air vents		✔	✔
Additional clothing		✔	✔
Irreplaceable items		✔	✔
Close up / lock up			✔
Ready the structure			✔
Locate a place to stay			✔
Camping gear			✔

ALWAYS READY:

- ✔ **Go Bag in car, home, office**
- ✔ **Fuel in vehicle, at least a half tank at all times**
- ✔ **Know how to open garage door manually and who can help if needed**

DON'T WAIT. EVACUATE!

If time allows, you can save and load additional items and prepare for your return.

* For a list of Go Bag supplies: SoCoEmergency.org/home/prepare/get-ready/build-a-kit

Include:

- Change of clothes, warm jacket, hat, gloves, scarf, sturdy shoes, long pants, underwear, socks, rain gear, etc.
- Blankets, pillows
- Irreplaceable items, such as childrens' favorite dolls / toys, photos, heirlooms, keepsakes

Stop, think and save:

- Keys to vehicle, house, storage sheds
- Plastic bags, zip ties, rope, tarp, etc.
- Items you might need in the future, such as photos

Organize and prepare for your return:

- Clear 100 feet of space around structures, including vegetation and flammable materials
- Turn propane tanks off and move propane barbecue away from structures
- Leave gates open and unlocked, hoses attached and available but not on, ladder available
- Removal flammable items such as window shades and curtains
- Move flammable furniture to center of room
- Turn off any running water, including automatic sprinklers
- Locate alternative place to stay, such as hotel, or with family or friends
- Camping gear, including tent, sleeping bag, cot or air mattress, camping stove, utensils
- Use your phone to record belongings, including inside closets and drawers, for reference

LEARN MORE:
www.SoCoEmergency.org/prepare

EMERGENCY MANAGEMENT
SONOMA COUNTY

9.0 POWER OUTAGES AND LOSS OF COMMUNICATIONS

9.1 Power Outages

A power outage is when the electrical power naturally or intentionally goes out. Power outages typically occur as the result of a storm, a disaster such as an earthquake and human activity, like a vehicle hitting a powerline. In addition, PG&E at times performs Public Safety Power Shutoffs (PSPS) in the event of a storm or wildfire to help keep communities safe. In our area, it is not uncommon for electricity and/or natural gas to be turned off when a wildfire threatens specific areas. Rolling blackouts (scheduled rotating outages) can also occur when the energy supply is not enough to adequately meet anticipated demand during a heatwave.

Power outages can:

- Disrupt communications, water and transportation.
- Close retail businesses, grocery stores, gas stations, ATMs, banks and other services.
- Cause food spoilage and water contamination.
- Prevent use of medical devices.

Whether or not a power outage is known ahead of time or occurs without a warning, there are steps you can take to minimize safety risks and the inconvenience to you, your family and animals.

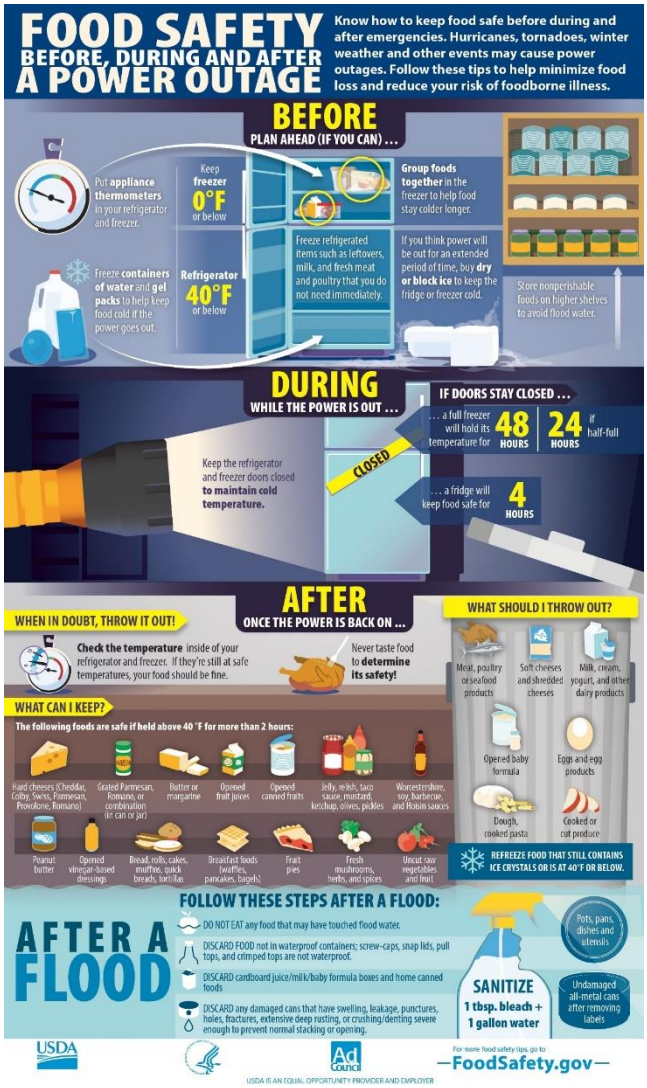
Before a Power Outage

- You can sign up for power outage notices from PG&E at https://www.pge.com/en_US/residential/outages/alerts/alerts.page?WT.mc_id=Vanity_outagealerts.
- If you have medical devices that require power, sign up for the medical baseline program with PG&E. You will receive early notification of power shut offs and may be eligible for alternative power supplies.
- Talk to your medical provider about a plan for medical devices powered by electricity and refrigerated medicines.
- Have a backup plan to maintain any life support equipment. Consider temporarily relocating to a house with electricity.
- To learn whether electricity to your home will be shut off during a planned power outage or rolling blackout go to https://pgealerts.alerts.pge.com/addresslookup/.
- Take inventory of the items you need that rely on electricity.
- Plan for alternatives to meet your electrical needs when the power goes out; battery-operated lanterns, extra batteries, a generator, extra fuel for the generator, extra blankets for cold weather, etc.
- If you plan on permanently installing a generator to your house, have a licensed professional do it. An incorrectly installed generator can damage your property and potentially harm PG&E line workers. Details about back up power sources, including proper use of generators can be found at https://assets.safetyactioncenter.pge.com/uploads/m6VrR3BG/8fe31d/CWSP_Backup_Power_Fact_Sheet_20200806.pdf.

- If you receive a warning of a potential power outage, check your food and supplies. If needed, buy extra non-perishable food and supplies, charge your cell phone, fill up your vehicle's gas tank, store water in the bathtub or containers and place ice in the freezer and refrigerator to help keep food cooler longer. Make sure there will be no spillage if the ice melts. If you have a well, the pump will not operate without electricity so plan accordingly. Consider having an ice chest with blocks of ice for food to eat so you don't open the refrigerator doors.
- Place a thermometer in the refrigerator and in the freezer so you can know the temperature when the power is restored.
- Tip: put a cup of water in your freezer, freeze it solid then put a quarter on top of the ice and leave it in your freezer. If the quarter falls to the bottom of the cup, it is an indication that the food defrosted and you should throw it out. But if the quarter is either on top or in the middle of the cup, then your food may still be ok.

During a Power Outage

- Ensure that food stays cold by keeping your refrigerator and freezer doors closed. If the doors are not opened, the refrigerator will keep food cold for about four hours. A full freezer will keep the temperature for about 48 hours.
- Avoid carbon monoxide poisoning. Generators, camp stoves or charcoal grills should always be used outdoors and at least 20 feet away from windows. Never use a gas stovetop or oven to heat your home. If you plan on using a generator, install carbon monoxide detection alarms in your home.
- Protect sensitive electronic equipment, such as televisions and computers with surge suppressors.
- Disconnect appliances and electronics to avoid damage from electrical surges when the power is restored. This will also help eliminate fire hazards that can occur when power is restored to heat producing appliances.
- If safe, go to an alternate location for heat or cooling. Check with your local officials for locations of cooling or warming centers.



After Power Outage

- After the incident has ended, it may take days to get power restored to your home, especially if a large area was impacted or if you live in a remote area.
- When in doubt, throw it out! Throw away any food that has been exposed to temperatures 40 degrees or higher for two hours or more, or that has an unusual odor, color or texture. A list of foods recommended to discard versus keep can be found at https://www.foodsafety.gov/food-safety-charts/food-safety-during-power-outage.
- If the power is out for more than a day, discard any medication that should be refrigerated, unless the drug's label says otherwise. Consult your doctor or pharmacist immediately for a new supply.
- If natural gas to your home was shut off, wait for a PG&E representative to restart it.

9.2 Loss of Communications

During a disaster or power outage, communications through the internet and/or telephones may not be available. However, non-electrical communication devices, such as those powered by battery, solar or hand crank may work for back-up communications and to learn current conditions. Below are some suggested devices that might work when telephones and the internet do not. We suggest you research each device's limitations before purchasing.

- In some situations, texting may work when talking on cell phones do not.
- AM/FM radios that are battery powered, solar powered and/or hand cranked. Emergency radios with multiple purposes (AM/FM/NOAA Weather, flashlight, charger and more) are available for purchase.
- National Oceanic and Atmospheric Administration (NOAA) Weather Radio**s**. This alert system is available for purchase at a relatively low cost. When properly programmed, the National Weather Service can remotely turn on these radios and send basic alerts. They are not dependent on cable or cell systems. The message may be accompanied by a warning tone, depending on the model of radio you purchase. Sonoma County residents may tune their NOAA radio to **frequency 162.475**.
- Portable battery-powered televisions.
- Ham Radios, General Mobile Radio Service Radios and Walkie Talkies. See Appendix 3 for details. Sonoma County has the Auxiliary Communications Service (ACS) program for those who want to become a licensed operator, https://sonomacounty.ca.gov/DEM/Auxiliary-Communications-Service/.
- CB Radios.
- Solar powered charger for devices.

10.0 ANIMAL SAFETY

Protecting animals is a critical part of disaster preparedness and response. Your pets, equines and livestock will experience the same situation as you, but their "fight or flight" instincts may cause them to flee or to hide. Calm preparation, including evacuation practice drills, will help both you and your animals when facing scary circumstances. Planning and practice can save you, your animals and others.

Your animal disaster plans should include all elements in your family emergency plan; Go Bags, emergency supplies, important contacts and documents, and evacuation resources, locations and helpers. The plan should also address potential emergency/disaster situations that may arise, such as earthquakes, wildfires, house fires, flooding, extended power outages, etc. By planning ahead, you will help yourself stay calm and focused when your animals need your "pack" or "herd" leadership.

It is important to understand the difference between Evacuation Warnings that are voluntary versus a Mandatory Evacuation Order and how this impacts your planning. Before a Mandatory Evacuation Order is issued, you and your animal helpers are allowed continued access to your property. But under a Mandatory Evacuation Order, only authorized Animal Disaster Responders, property owners and workers with an Agricultural Disaster Access document are allowed into evacuation order zones. Because of this difference and because your animals may be hard to catch or load into carriers and trailers during emergency conditions, it is critical to be prepared, practice your plan and evacuate early.

Some general guidance on preparing for your animals' safety during an incident is included in Appendix 4. Also included in the appendix are suggestions for animal safety during extreme hot and cold weather and animal emergency contact information.

A local program, HALTER Project, offers a resource library where you can find checklists for pet and livestock emergency kits, guidance on animal evacuation and shelter-in-place, disaster action plan tools and more. Their website is https://www.halterproject.org/.

11.0 EARTHQUAKES

Sonoma County is a seismically active area. In addition to large ground shaking and damage to structures (buildings, roadways, bridges, overpasses, powerlines and underground utilities), earthquakes can cause fires due to breaks in natural gas lines, damaged electrical systems or toppled appliances, ruptures in dams, release of hazardous materials and trigger landslides and liquefaction. The Sonoma County Earthquake Shaking Potential Map in Appendix 5 shows the expected relative intensity of ground shaking and damage anticipated in Sonoma County from future earthquakes. The locations of the major earthquakes and anticipated areas of liquefaction, a condition when water-logged sediments lose their strength due to ground shaking, are shown on the Major Earthquake Fault Zones & Areas of Liquefaction Map in Appendix 5.

Even though we cannot predict when and where the next earthquake will hit our area, we can be prepared when one does. Below are suggestions to help you prepare for an earthquake and information about what to do when one occurs. You can take the Association of Bay Area Governments Resilience Program quiz at https://homequakequiz.org/ to see how safe your home, apartment or mobile home will be in an earthquake.

11.1 Before an Earthquake

- Assess your home, garage and office for potential hazards should an earthquake hit; shattered glass, spilled chemicals, gas-fed fires and falling objects. Look at each room with the question, what might injure me or my family.
- Practice **Drop, Cover, Hold** with family and coworkers. Pick sturdy furniture you can shelter under in each room, like desks and tables that are away from windows, ceiling fans and tall furniture. When a large earthquake hits you will have seconds to respond and will likely not be able to walk to another room.
- Secure bookcases, televisions, dressers, appliances and other tall items to the wall (preferably a stud), using “L” brackets, corner brackets, aluminum molding or eyebolts. Secure objects that hang on walls and anchor overhead lighting to joists. Remove anything above the bed that might fall and injure someone. Consider using earthquake wax to help secure objects and putting childproof locks on cabinets.
- Strap the water heater with lag bolts to studs in wall; one strap 1/3 distance from top and another 1/3 from bottom. Install flexible lines and pipe fittings to avoid gas or water leaks, especially on gas water heaters and gas kitchen stoves.
- Store heavy objects, breakable objects, valuable items and chemicals on low shelves.
- Store flammable material in well-marked, unbreakable containers. Properly dispose of any hazardous materials no longer needed.
- Install wooden or metal guardrails to shelves to prevent items from falling off. Fishing line can also be used.
- Consider a retrofit of your house to correct structural issues that are not seismically safe, such as reinforcing the house to the foundation and strengthening exterior features; porches, decks, canopies and carports. Fix any loose tiles or bricks on the chimney and roof. Chimneys, especially brick chimneys are highly susceptible to damage from strong ground shaking if they have not been property reinforced.

11.2 During an Earthquake

If Inside

- Stay calm and seek immediate shelter inside. Stay at least 15 feet away from windows, if possible. Do not run outside. Most injuries during earthquakes are from people moving around and falling.
- **Drop, Cover, Hold**. Get under something sturdy like a table or desk to protect yourself from falling items. Move with the furniture to stay covered. Hold on to the furniture until shaking stops.
- If there is no furniture to crawl under, sit down against an interior wall and cover your head and neck with your arms.
- If in bed, curl up and cover your head with a pillow.
- If you are in a wheelchair lock the wheels, bend over and cover your head and neck.
- Stay indoors until all shaking stops.
- If you become trapped under debris, do not light a match or move about. Cover your mouth with a handkerchief or clothing to prevent breathing dust. Send a text message if you have your phone. Tap on a pipe or wall so that rescuers can find you. Use a whistle, if available. Shout only as a last resort.

If Outside

- Move away from buildings, trees and powerlines to an open area.
- Watch for fallen powerlines, light poles and trees.
- If in a car, pull to the side of the road, stop as quickly as safety permits and stay in the car with your seatbelt on. Avoid stopping near or under buildings, trees, overpasses and utility lines. Proceed cautiously after shaking has stopped, watching for road and bridge damage. Do not attempt to drive across bridges or overpasses that have been damaged.

11.3 After an Earthquake

- Assume there will be additional earthquakes (aftershocks). When one happens **Drop, Cover, Hold** each time.
- The floor of the building and garage will likely be littered with broken glass and other debris after a significant earthquake. Be careful cleaning up. Protect yourself by wearing a long-sleeved shirt, long pants, work gloves and sturdy thick-soled shoes. If there is a lot of dust wear a N-95 respirator.
- Put out small fires and clean up spills, if it safe. For larger fires, leave and call 9-1-1.
- Check the situation in and around your house. If necessary, call for assistance and care for victims without jeopardizing your own safety.

- Check your emergency alerts and tune into radio stations for information.
- Open cabinets cautiously. Beware of objects that might fall out.
- Get to a safe place outdoors if you think the structure you are in is in danger of collapsing.
- Secure anything heavy that could fall, especially anything that is a possible fire hazard.
- If you smell gas**,** or think it is leaking, shut it off. Do not use an open flame. Remember only a professional should turn the gas back on.
- Have your emergency supply kit accessible.
- Use stairs instead of an elevator in case the power goes out.
- Get the car out of the garage and load it with supplies to prepare for evacuation, if necessary.

12.0 WILDFIRES

We live in a high-risk wildfire area due to the buildup of fuels (vegetation) and the current climate conditions. This combined situation has extended our fire season and resulted in the potential threat of a wildfire most of the year. The map in Appendix 6 indicates what areas within state responsibility lands are of higher wildfire risk than others. Note that the map does not include risks for incorporated areas (cities and towns) or for land that is under local responsibility.

From October 2017 to October 2020, 10 major wildfires occurred in Sonoma County that burned approximately 394,600 acres. Fighting of these wildfires was orchestrated by California Department of Forestry and Fire Protection (CAL FIRE), the agency that is responsible for managing and extinguishing fires that originate or move into state responsibility areas.

During wildfires, homes catch on fire by direct flame, radiant heat (nearby fire hot enough to ignite a home) or by embers, which can travel more than a mile. In our area, destruction from recent fires was largely due to wind-blown embers that started spot fires and caused spreading of the fires.

Until our climate and ecological situation changes, the question for us is not will there be another wildfire, it is when will the next one start. By being prepared in advance of a wildfire, you increase your chance of saving lives and property. Responding appropriately before and during a wildfire, also protects the lives of our emergency responders.

12.1 Before a Wildfire

According to Fire Safe Sonoma's Ready, Set, Go! document, "Studies show as many as 80 percent of the homes lost to wildland fires could have been saved if their owners had followed simple fire-safe practices." An important factor in reducing the risks of wildfire on your property is maintaining an adequate defensible space and hardening your home. **Defensible space** is the area between a house and an oncoming wildfire where the vegetation has been modified to reduce the threat of a wildfire and to provide an opportunity for firefighters to effectively defend the house. **Hardening your home** means retrofitting your house or building new structures using fire-resistant building materials and methods that can help your home withstand fire. It takes the combination of both defensible space and home hardening to really give your house the best chance of surviving a wildfire.

We suggest you use CAL FIRE's checklist at https://www.fire.ca.gov/media/4996/readysetgo_plan.pdf to help prepare your property and family for wildfires. You can sign up to receive notices from CAL FIRE at https://plan.readyforwildfire.org/?utm_source=rfw_website&utm_medium=sidebar_item&utm_campaign=web_app&utm_content=text.

The Three R's of Defensible Space

Removal	This technique involves the elimination of entire plants, particularly trees and shrubs, from the site. Examples of removal are cutting down a dead tree or cutting out a flammable shrub.
Reduction	The removal of plant parts, such as branches or leaves, constitute reduction. Examples of reduction are pruning dead wood from a shrub, removing low tree branches, and mowing dried grass.
Replacement	Replacement is substituting less flammable plants for more hazardous vegetation. Removal of a dense stand of flammable shrubs and planting an irrigated, well maintained flower bed is an example of replacement.

- Start at your house and work out. The first 5 feet around your home are critical. Create and maintain defensible space on your property by following the suggestions in Appendix 7. Defensible space is commonly broken into 3 zones and typically extends out at least 100 feet from the house. An important factor of having an effective defensible space is maintaining a 5-foot, non-combustible zone (Zone 1) around all structures; home, deck, barn, shed, etc.
- Harden your home following the advice in Appendix 8. Inspect and maintain your home periodically.
- Maintain a clearing to your property (driveway and access road) of at least 10 feet by 12 feet high for fire engines to access your house and surrounding area.

During Fire Season

- Pay attention to emergency warning alerts and notices, like Red Flag Warnings.
- Make sure garden hoses are hooked up and ready to use.
- Turn off portable propane tanks (BBQ, smoker, etc.) and move them away from your house when not in use.
- Clear decks above and below of flammable objects, such as cushions.
- Move gas cans for lawn mowers, chippers, etc. away from the house, garage and barn.
- Firewood stacks should be at least 30 feet from the home but if this is not possible cover the wood with a fire-resistant tarp.
- If you have a pool, a pressure washer can be used to pump water from the pool. Make sure fire fighters have clear access to the pool.
- Properly maintain vehicles to prevent starting fires along roads due to sparks or flammable materials being spit out from the catalytic converter system.

During a Red Flag Warning
A Red Flag Warning means there is an increased risk for fire danger due to warm temperatures, very low humidity and stronger winds within the next 24 hours. Extreme caution is urged during this warning because a single spark can create a major wildfire. If a Red Flag Warning is issued:

- Make sure your cell phones are switched on, charged and within hearing distance at all times.
- Have Go Bags easily accessible, possibly by the door.
- Move all combustible items inside or at least 5 feet away from the house, deck, etc.
- Make sure your gutters and roof are clear of leaves and other debris.
- Park vehicles in the driveway facing the street or on the street facing the direction out. Move any other vehicles, such as trailers, RVs or boats to the street where they can be easily hooked up.
- Open covers on pools.

The activities below should **not** be performed the entire time a Red Flag Warning exists. Some of these activities are not recommended even under normal conditions.

- Do not mow or trim dry grass because a power tool could spark and start a grass fire. This is also not recommended on windy, dry, hot days.
- No open flames outdoors; BBQs, outdoor pit fires and campfires.
- Do not throw cigarettes out windows. Thoroughly extinguish all cigarettes and smoking material and properly dispose of them.
- Do not pull your vehicle over in grass because it can spark a grass fire. If necessary, pull over on paved roads or gravel.
- Use spark arrestors on portable gasoline-powered equipment to avoid an accidental fire.
- Do not allow trailer chains to drag on the ground and spark.
- Do not shoot firearms or light fireworks.
- Do not burn plant cuttings.

12.2 During a Wildfire

If a wildfire is in your area, the most important things you can do is know the situation and be ready to evacuate. Are there any emergency alerts or notifications that apply to your area? Which direction is the fire moving? How close is the fire to your property? Are evacuation zones next to yours evacuated or under an Evacuation Warning?

- If you are told to evacuate, LEAVE. See Evacuations, Section 8 for more information.
- Make sure your cell phone is charged and with you at all times, including while you sleep. Confirm the volume is turned on so you can hear emergency alerts.
- Monitor the progression of the fire by listening to radio or television stations and the mobile apps and websites listed in Section 6.
- Have Go Bags by the door. If you have not been told to evacuate, this is your opportunity to pack more items.

- Park vehicles in the driveway facing the street or on the street facing the direction out. Consider partially loading vehicles with supplies to prepare for a possible evacuation and hooking up trailers or boats, if you plan to evacuate with them. Keep all vehicle windows closed.
- Place an extension ladder on the house.
- Have your animals accessible. If they are normally outside, consider bringing them inside for a quick getaway. See Appendix 4 for details.
- Make sure all combustible items (doormats, outdoor furniture, cushions, BBQ propane tanks, etc.) that are within 5 feet of structures (house, deck, barn, etc.) are either inside or more than 5 feet away. If possible, move them more than 100 feet away.
- Remove flammable window coverings and move furniture to center of rooms. If you cannot remove the window coverings, open them.
- Turn off your propane tank and any running water, including irrigation and sprinklers. Be aware if a propane tank explodes, it can be blown up to a mile away.
- If you were under an Evacuation Order do not return home until authorities tell you it is safe to return.

As we know from recent wildfires, dense smoke often covers our skies during wildfires. Wildfire smoke is a mix of gases and fine particles from burning trees, plants, buildings and other material. When smoke from wildfires is present, it is critical to take precautions to protect your health and your family's health. Some of the initial signs of health impacts from smoke are burning eyes, scratchy throat and a runny nose. Appendix 9 discusses ways you can protect yourself from wildfire smoke and the Air Quality Index (AQI) that is used to evaluate air quality.

If You Become Trapped in Your Home

- Stay calm, keep your family together.
- Stay in the center of your house, away from outside walls and windows. It will get hot in the house, but it is much hotter and more dangerous outside.
- Bring your pets inside and put them in carriers.
- Call 9-1-1 and inform authorities of your location.
- Have your fire extinguishers out and ready to use.
- Fill sinks and tubs with cold water for extinguishing any embers that enter the space and to use for drinking and flushing toilets.
- Keep all doors and windows closed, but unlocked.
- Place wet towels under doors and window openings.
- Move furniture away from windows and sliding glass doors.
- Open drapes and blinds. Close metal window blinds.
- Shut off attic fans, whole house fans, swamp coolers and interior fans to keep smoke and ash from being drawn into the house.
- If it is smokey inside, stay low by crawling in an attempt to stay under the smoke.
- After the fire passes, evaluate whether it is best to stay where you are or evacuate when it is safe to do so.

If You Become Trapped in Your Vehicle

- Park your vehicle in an area clear of vegetation or in an area that has already burned, if possible.
- Stay calm and stay in your vehicle. It will be safer than being in the open, where you would be directly exposed to flames and radiant heat.
- Close all windows, doors and vents. Turn off air conditioner.
- Turn on headlights and flashers to be more visible.
- Lie on the vehicle floor and cover yourself with a wool blanket or jacket.
- Call 9-1-1 to advise officials.
- Wait until the fire front passes and the outside temperature has dropped. Then get out and go to a safe area that has already burned or an open clearing.

If You Become Trapped on Foot

- Stay calm.
- Go to an area clear of vegetation, a ditch or depression, if possible. Lie face down and cover up.
- Get in a lake or swimming pool, if an open clearing is not nearby.
- Call 9-1-1 to advise officials.

12.3 After a Wildfire

The dangers of a wildfire last longer than after evacuees return home. Fire officials spend weeks after a fire is contained making sure we are safe and hot spots are extinguished. Examples of other activities that continue to ensure our safety are repair of utility lines, clearing of downed trees in roads and removal of burnt trees in parks.

How you personally proceed after a wildfire threat depends on the amount of fire and smoke damage that you and your property has incurred. If your house or property has sustained damage, take photographs/videos of everything and contact your insurance company before you do any cleanup. Methods for properly cleaning up wildfire ash is discussed in Appendix 10. If there has been significant damage or if there is a large amount of ash on your property, consider hiring a professional damage and debris removal/restoration service to clean your property and home.

Below are general tips on what to do after a wildfire is in your area. We suggest you go to CAL FIRE's Returning Home After a Wildfire Checklist at https://www.readyforwildfire.org/wp-content/uploads/CALFIRE_ReturningHomeAfterAFire_Revised.pdf for a list of precautions and recommended steps after a wildfire. For information on post wildfire recovery, go to https://socoemergency.org/recover/, where Sonoma County posts details and programs for current wildfires. You can also visit http://cemendocino.ucanr.edu/Forestry/Post-Fire/ for post-fire resources.

- Stay away from your home or business until fire officials tell you it is safe to return.
- Keep you Go Bags ready in case you need to evacuate again.

- Most burned structures and surfaces will be unstable. Use extreme caution around trees, power poles and other tall objects or structures that may have lost stability during the fire. Stay out of burned forests during windy conditions until they have been cleared of possible hazards.
- Watch for smoke or sparks inside and outside of the house, including roofs, gutters, etc.
- Throw away food that has been exposed to heat, smoke, water or soot.
- If there is no power, check to make sure the main breaker is on. If the breakers are on and power is still off, call PG&E. If your gas was turned off, wait for PG&E to turn it back on. If you have a propane tank, contact a propane supplier, turn off valves on the system, and leave valves closed until the supplier inspects your system. If you have a heating oil tank, contact a heating oil supplier for an inspection of your system before you use it. If you have a solar electrical system, this system should be inspected by a licensed technician to verify that the solar panels and electrical wiring are safe for continued operation.
- Be aware that flash floods and debris flows are potentially deadly hazards after a wildfire, especially after heavy rains. More information is provided in the Landslides section below.

13.0 LANDSLIDES

A landslide is the movement of rock, earth or debris downslope. They are categorized primarily on the type of material that moved (rock, soil or debris) and by the type of movement (slide, flow, fall, topple or spread). Landslides can be small or many miles in size, slow or rapid like rivers. Fast moving landslides can cause significant property damage and deaths. The potential for landslides in Sonoma County varies depending on where you live. On the Landslides Hazard Areas Map in Appendix 5 you can find the location of your home to learn whether your general area is susceptibility to landslides.

In Sonoma County, landslides are most often triggered by rainfall, earthquakes, erosion, fires or human activity, such as roadcuts. Recent wildfires in our area burned acres of vegetation that once helped "root" soil and rock in place. Due to the removal of this vegetation and the change in the ground surface, there is an increased risk of landslides, erosion and flooding in our area.

The best ways to protect yourself and property from a landslide is to prepare your property ahead of time, learn to recognize landslide warning signs and evacuate immediately, if there are signs of imminent danger or an evacuation warning. Land-use zoning, professional inspections and proper design can reduce many landslide problems but evacuation is often the only way to protect lives from a debris flow or other fast-moving landslides.

13.1 Before a Landslide

- Follow proper land-use procedures. Avoid building in areas at risk of a landslide, such as near steep slopes, close to mountain edges, near drainage ways or along natural erosion valleys.
- Become familiar with the land around you. Learn whether debris flows have occurred in your area by contacting local city or county officials. Slopes where debris flows have occurred in the past are likely to experience them in the future.
- Get an assessment of your property by a qualified geotechnical professional. Because landslides can be large, there may not be indications of ground movement on your property so the area around your property should also be assessed.
- Consult a professional for advice on appropriate preventative measures for your home or business, such as flexible pipe fittings, which can better resist breakage.
- Protect your property by planting ground cover on slopes and building retaining walls.
- In mudflow areas, build channels or deflection walls to direct the flow around buildings. Be aware if you build walls to divert debris flow and the flow impacts a neighbor's property, you may be liable for damages.
- If you are at risk of property damage from a landslide, talk to your insurance agent. Debris flows may be covered by flood insurance policies from the National Flood Insurance Program (NFIP).

Recognize Landslide Warning Signs

Signs of Slow-Moving Landslides That Might Pose a Threat to Your Property

- Changes in landscape: patterns of storm-water drainage on slopes (especially the places where runoff water converges), land movement, small slides, flows or progressively leaning trees.
- Doors or windows stick or jam for the first time.
- New cracks appear in plaster, tile, brick or foundations.
- Outside walls, walks or stairs begin pulling away from the building.
- Slowly developing, widening cracks appear on the ground or on paved areas, such as streets or driveways.
- Underground utility lines break.
- Bulging ground appears at the base of a slope.
- Water breaks through the ground's surface in new locations.
- Fences, retaining walls, utility poles and/or trees tilt or move.

Signs of Fast-Moving Landslides That Might Pose a Threat to Your Property and Life

- Listen and watch for rushing water, mud or unusual sounds, such as trees cracking or boulders knocking together that might indicate moving debris.
- A faint rumbling sound that increases in volume is noticeable as a landslide nears.
- The ground slopes downward in one direction and may begin shifting in that direction under your feet.
- Huge boulders in the landscape can be signs of previous landslides.
- Collapsed pavement, mud, fallen rocks and other indications of possible debris flow can be seen when driving. Embankments along roadsides are particularly susceptible to landslides.

13.2 During a Landslide (or concerns of a potential landslide)

- During a severe storm, stay alert and awake. Make sure your communications devices are charged and ready if power goes out.
- Listen to local news stations or NOAA Radio for warnings of heavy rainfall.
- Listen for unusual sounds that might indicate moving debris, such as trees cracking or boulders knocking together.
- Move away from the path of a landslide or debris flow, as quickly as possible. Move uphill, if possible. The danger from a mudflow increases near stream channels and with prolonged heavy rains. Mudflows and debris flows can move faster than you can run.
- Avoid river valleys and low-lying areas.
- If you are near a stream or channel, be alert for any sudden increase or decrease in water flow and notice whether the water changes from clear to muddy. Such changes may indicate debris flow activity upstream so be prepared to move quickly.
- Look upstream before crossing a bridge and do not cross the bridge if signs indicate a mudflow or debris flow is approaching.
- Curl into a tight ball and protect your head if escaping is not possible.

13.3 After a Landslide

- Go to a friend or family member's home or a designated public shelter, if you have been told to evacuate or if you feel it is unsafe to remain in your home.
- Be especially alert when driving in the area, watch for collapsed pavement, mud, fallen rocks and other possible debris.
- Stay away from the slide area. There may be danger of additional slides.
- Check https://socoemergency.org/ for the latest emergency information.
- Watch for flooding, which may occur after a landslide or debris flow. Floods sometimes follow landslides and debris flows because the same event can trigger both.
- Check for injured and trapped persons near the slide, without entering the direct slide area. Direct rescuers to their locations.
- Be aware of and report broken utility lines, as well as damaged roadways and railways to appropriate authorities. Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury.
- Have trained professionals check the building foundation, chimney and surrounding land for damage.
- Replant damaged ground as soon as possible since erosion caused by loss of ground cover can lead to erosion, flash flooding and additional landslides in the near future.
- Seek advice from a geotechnical expert for evaluating landslide hazards or designing corrective techniques to reduce landslide risk.

14.0 FLOODING

Floods are the most common natural hazard in the United States. Storms and floods can cause property damage, loss of utilities and loss of life. In our area, flooding is often caused from intense rain (slow, heavy rain storms) but can also be caused by a dam breaching, levee failure and damming of creeks from trees and debris. A flash flood is a sudden violent flood that can be very destructive. Flash floods can rip through river beds, mountain canyons or low-lying areas and in areas not receiving rain. Flash floods may occur with little or no warning.

Flooding in Sonoma County frequently occurs along the floodplains of the Russian River, Petaluma River, Sonoma Creek and their tributaries. A floodplain is the area adjacent to a waterway that is subject to recurring inundation of water from floods. If you live in a floodplain or downstream from a dam, you should be especially aware of flood hazards. The Dam Inundation Map in Appendix 5 shows land that could get inundated with water, if the dams on tributaries feeding into the Russian River should breach.

During heavy rains, other low-lying areas can also flood because the amount of rain is more than the area is capable of draining or infiltrating. This can occur at any low-lying area, such as fields, drainage ditches, parking lots, roads, highways, offramps and onramps. It is not uncommon for a section of a road to be temporally closed because of localized flooding in the area. If an area is closed due to flooding, for your own safety and the safety of those with you, do not enter. Flood waters move very quickly. During flood conditions, water in the lower portion of the Russian River has moved very large objects, like propane tanks and trees.

14.1 Before a Flood

- Know the risk of flooding at your location. You can go to https://msc.fema.gov/portal/search to search by address whether you are at risk.
- Pay attention to weather forecasts. There will be warnings for most floods. The Sonoma County Water Agency posts flood forecasts and information at https://www.sonomawater.org/flood-forecast-and-emergency-information.
- Move valuables and animals in low lying areas that might be inundated with water to higher ground. In particular, remove anything that is toxic that might pollute surface waters. By relocating items to safe, higher ground, you will have less clean up afterwards and protect the items.
- Declutter drains, drainage ditches and gutters. Install check valves in sewer traps to prevent floodwaters from backing into drains. Consider placing a sump pump with a battery under your house.
- Elevate the furnace, water heater and electric panel, if susceptible to flooding.
- Construct barriers, such as levees (e.g., sand bags) to stop floodwater from entering the building.

14.2 During a Flood

- **Turn Around. Don't Drown.** Do not walk, swim or drive through floodwaters, this includes your entire family and pets. Even six inches of moving water (water at your ankles) can knock you down. One foot of moving water can sweep a vehicle away. Two feet of water can float most cars, trucks and SUVs.
- Stay off bridges over fast-moving water.
- Avoid underground parking structures, underpasses and basements.
- If water is approaching, decide whether it is best to evacuate, move to higher ground or stay where you are. If you need to evacuate, leave early. If you are leaving because of rising flood waters along the Russian River or a creek, know it may be days before the water resides enough to return home.
- If water encroaches your house, turn off electricity and other utilities at main switches. Do not touch electrical equipment if you are wet or standing in water.
- If you become trapped inside a vehicle and are surrounded by rapidly moving water, stay inside. If water is rising inside the vehicle, move to the roof of the vehicle.
- If you become trapped inside a building, move to the highest level but do not climb into a closed attic. Climb onto the roof as a last resort then signal for help.

14.3 After a Flood

- Avoid floodwaters; water may be contaminated by oil, gasoline or raw sewage. Water may also be electrically charged from underground or downed powerlines.
- Be aware of areas where floodwaters have receded. Roads may have weakened and could collapse under the weight of a car.
- Use extreme caution when entering buildings; there may be hidden damage, particularly in foundations.
- Service damaged septic tanks, cesspools, pits, and leaching systems as soon as possible. Damaged sewage systems are serious health hazards.
- Clean and disinfect everything that got wet. Mud left from floodwater can contain sewage and chemicals.

15.0 EXTREME WEATHER

This section describes potential risks during extreme cold and hot days and suggested actions to prevent health problems.

15.1 Extreme Cold and Storms

Winter storms can bring extreme cold, freezing rain, snow, ice and high winds. Strong winds can knock down trees and powerlines, cause property damage and cut off heat, power and communications. The risk of car accidents, hypothermia, frostbite, carbon monoxide poisoning (from improper use of equipment) and heart attacks from overexertion are increased during storms. Older adults, children and sick individuals are at greater risk.

Before Extreme Cold or a Storm

- Prepare your home to keep the cold out with insulation, caulking and weather stripping. Wrap exposed pipes to keep them from freezing.
- Winterize your vehicles.
- Listen to weather reports and warnings of freezing weather and storms.
- If a household member is over 65 years old, consider placing an easy-to-read thermometer in an indoor location where it will be seen frequently. People's ability to feel a change in temperature decreases with age.
- Learn the signs of frostbite and hypothermia and the basic treatment of these conditions, https://www.redcross.org/content/dam/redcross/atg/PDF_s/Preparedness___Disaster_Recovery/Disaster_Preparedness/Winter_Storm/Frostbite_and_Hypothermia.pdf.

During Extreme Cold or a Storm

- Stay inside as much as possible and limit your time outside. If you need to go outside, wear layers of warm clothing, a hat and gloves to prevent loss of body heat.
- Prepare for power outages.
- Listen for emergency information and alerts.
- Stay off roads, if at all possible. If you must drive, drive during the day and let someone know where you are going. If trapped in your car, stay inside and cover with a blanket or extra clothing.
- Watch for signs of frostbite and hypothermia.
- When thunder roars, go indoors!
  - Use the 30-30 rule for lightening. After you see lightning, count to 30. If you hear thunder before you reach 30, move into a building or a car and suspend activities outside for at least 30 minutes after the last clap of thunder. If no shelter is available, crouch low, with as little of your body touching the ground as possible.
  - Unplug appliances.
  - Avoid using running water or landline phones. Electricity can travel through plumbing and phone lines.
  - Do not go hiking or camping, if thunderstorms are predicted.

15.2 Extreme Heat

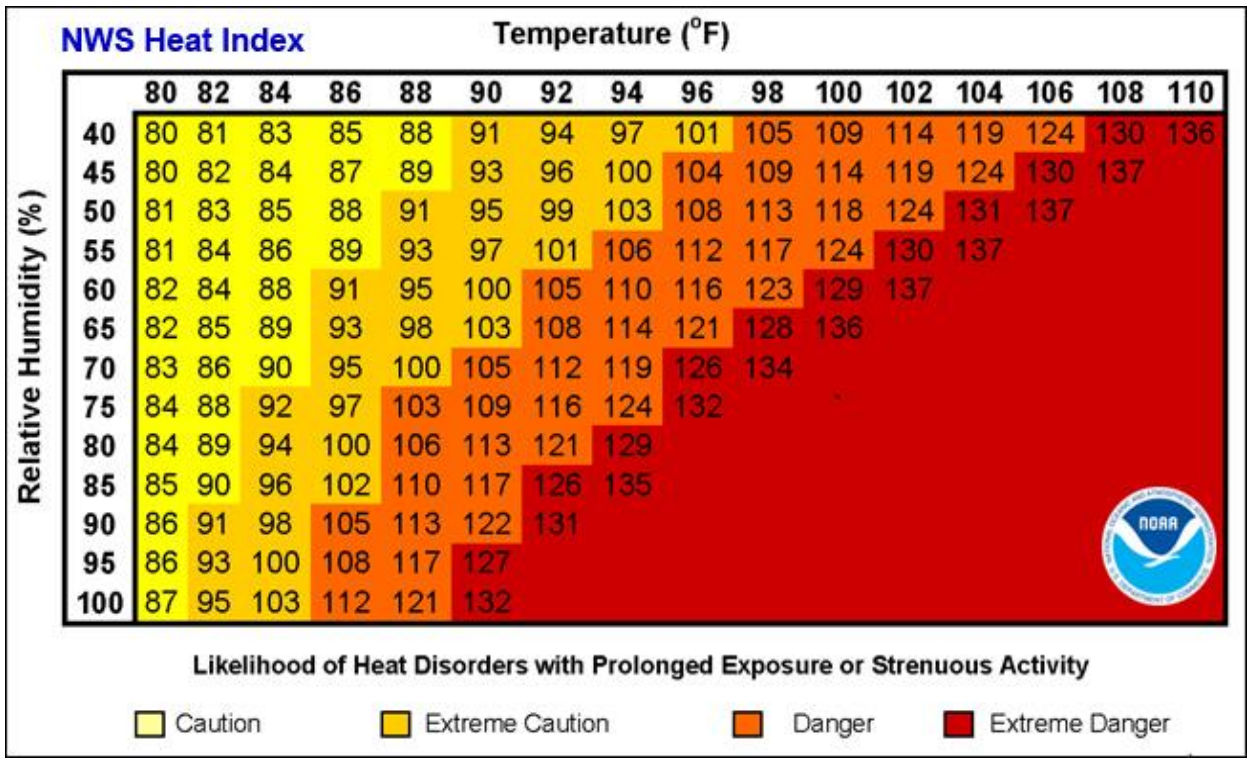
Heat is one of the leading weather-related killers in the United States. Excessive heat poses a significant health risk, particularly to the elderly, young children, pregnant women and those with chronic diseases. Heat-related illnesses range from cramps and heat exhaustion to heat stroke and, in extreme cases, even death. Warning signs of heat-related illness include heavy sweating, muscle cramps, tiredness or dizziness, nausea or vomiting, headache or weakness. NOAA's heat index chart below indicates the likelihood of a person to experience heat disorders with prolonged exposure to heat or from strenuous activities.

Before Excessive Heat

- Cover windows with drapes or shades.
- Install outdoor covers to block the sun from windows.
- Weather strip doors and windows.
- Use window reflectors, such as aluminum foil covered cardboard to reflect heat back.
- Add insulation to keep the heat out.
- Install an attic fan or powered attic ventilator to clear hot air from the attic.
- Consider installing an air conditioner.

During Excessive Heat

- Car temperatures can greatly exceed outside temperatures, even with windows cracked. NEVER leave a child, person or animal in a parked vehicle.
- If you do not have air conditioning, stay on the lowest floor of the building, out of the sunshine or visit an air-conditioned building; shopping centers, library or community centers.
- Check with Sonoma County Health Department (posted on SoCoEmergency.org) to see if they have set up cooling centers (air-conditioned shelters).
- Do not use electric fans when temperatures outside are greater than 95 degrees. Fans create a false sense of comfort but do not decrease body temperature. Instead take a cool shower or bath.
- Use your stove and oven less to keep temperatures lower in your house.
- Drink plenty of fluids to keep hydrated, especially water. Avoid alcoholic and caffeinated beverages since they tend to dehydrate the body.
- If outdoors, avoid high-energy activities and working in midday heat. Wear a wide-brimmed hat and loose, lightweight, light-colored clothing.
- If you must do strenuous activities, take breaks in the shade and drink extra water before, during and after.
- Watch for signs of heat cramps, heat exhaustion and heat stroke.



NOAA's Heat Index and Likelihood of Heat Disorders Chart

16.0 PANDEMICS

A pandemic is a disease outbreak that spans several countries and affects a large number of people. They are often caused by viruses that can be easily spread from person to person, mainly through coughing and sneezing. People can also leave viruses on things they touch if flu germs are on their hands.

While no one can be 100% safe from disease transmission, everyone can employ a number of strategies to help keep them at lower risk. Below are general suggestions to help limit exposure to infectious diseases. Since many diseases have specific symptoms and ways they can be spread, it is best to learn how each specific disease outbreak can be transmitted so you can respond appropriately.

- Follow the guidance of the Centers for Disease Control and Prevention (CDC) and our local health authorities.
- Always stay home when you are sick, even if it is “just a cold”.
- Avoid close contact with people who are sick.
- Avoid touching your eyes, nose and mouth.
- Cover your mouth with a tissue when you cough or sneeze, then throw the tissue in the trash.
- Wear an appropriate facemask, if instructed by health authorities.
- Don’t share personal items.
- Teach your children how to protect themselves.
- Clean and disinfect frequently touched objects and surfaces using a regular household cleaning spray or wipe. This includes door knobs, switches, handles, etc.
- Wash your hands often with soap and water for at least 20 seconds. If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol.
- Stay away from crowded venues when there is an outbreak of flu or other illness in your community.
- Stock up on items when you shop to reduce the number of times you go shopping.

17.0 MENTAL HEALTH DURING A DISASTER

Sonoma County has experienced several traumatic situations in the past few years. Coping with disasters, especially multiple disasters at the same time or repeated disasters as we have, is very stressful. The emotional toll can be more devastating and last longer than it does to rebuild property.

The safety and the physical, mental and emotional well-being of you and your family is a priority. Everyone who sees or experiences a disaster is affected by it even if they do not realize it. Children, older adults, people with special needs and people whom English is not their first language are of special concern in the aftermath of disasters.

- Recovery from a disaster is often a gradual process.
- Most reactions to disasters are temporary and go away over time. Have patience.
- It is normal to feel sadness, grief, anger, anxiety, hopelessness and overwhelm.
- Feeling physically or mentally drained, changes in appetite or sleeping patterns and increased frustration/arguing are also common reactions.
- Take care of yourself. Eat healthy foods, drink extra water, exercise and get plenty of rest.
- Acknowledging your feelings and those of others in your household will help with recovery. Unprocessed emotions can lead to unhealthy behaviors like overeating, drinking too much, drugs, violence, etc.
- Talking to your friends, family and neighbors about what you are experiencing will also help. Those in the area might be having similar reactions.
- Set priorities and don't try to do too much.
- Ask for and accept help from others. You are not in this alone.
- Limit your exposure to news media and social media. Overexposure can increase distress.
- Use healthy ways to relax, like breathing exercises, soothing music or meditations.
- Integrative/alternative healthcare, such as massage, acupuncture, naturopathic medicine and mind-body treatments can help with recovery from disasters and other traumas.
- Parents and adults who react in healthy ways during and after a disaster can help children recover more quickly. Talk to your children about what happened and allow them to express their feelings. Watch for signs indicating they may need professional assistance. The Centers for Disease Control and Prevention (CDC) provides advice for helping children cope with emergencies and lists typical reactions by age at https://www.cdc.gov/childrenindisasters/helping-children-cope.html.
- If you or someone in your household needs to talk to a professional for counseling or mental health support, you can contact the Sonoma County Crisis Stabilization Unit at (707) 576-8181 or the Disaster Distress Helpline at (800) 985-5990. The Sonoma County Suicide Prevention Hotline phone number is (855) 587-6373.

18.0 ADDITIONAL RESOURCES

Listed below are selected resources for you to obtain additional information about how to prepare for an emergency, how to respond to an emergency and ways to monitor an emergency situation. For resources on animal safety, defensible space and home hardening, see Appendices 4, 7 and 8, respectively. Additional resources are available on the COPE Northern Sonoma County website, https://copenorthernsonomacounty.com/resources-during-an-incident/.

Emergency Phone Numbers

9-1-1	Emergencies when police, fire department or an ambulance needed
2-1-1	Sonoma County 211, disaster specific information and referrals
(707) 565-2121	Sonoma County Sheriff's Office, non-emergency
(707) 838-1170	Sonoma County Fire Department (Windsor and parts of Santa Rosa), non-emergency
(707) 823-1089	Northern Sonoma County Fire Protection District, non-emergency
(707) 894-3545	Cloverdale Fire Protection District, non-emergency
(707) 431-3360	Healdsburg Fire Department, non-emergency
(707) 576-2089	CAL FIRE, non-emergency
(800) 743-5000	Pacific Gas & Electric
(800) 222-1222	California Poison Control System, San Francisco Division
(800) 985-5990	Disaster Distress Helpline
(707) 576-8181	Sonoma County 24-Hour Crisis Stabilization Unit

Radio Stations

KZST 100.1 FM
KSRO 103.5 FM
KSRO 1350 AM
KRCB 91 FM
KCBS 740 AM and 106.9 FM
KBBF 89.1 FM (Spanish)

Television Stations

KTVU Channel 2
NBC11 Channel 3
KRON Channel 4
KPIX Channel 5
KGO Channel 7

Online Websites

Disaster Preparedness

Federal Emergency Management Agency (FEMA) Are You Ready? An In Depth Guide to Citizen Preparedness
https://www.fema.gov/pdf/areyouready/areyouready_full.pdf

Sonoma County Emergency and Preparedness Information
https://socoemergency.org

Ready Campaign, a United States public service campaign
https://www.ready.gov

American Red Cross
https://www.redcross.org

Wildfire Preparedness

CAL FIRE Ready for Wildfire
https://www.readyforwildfire.org

Fire Safe Sonoma
https://www.firesafesonoma.org/

Wildfire Monitoring and Evacuation Related Websites

NASA Fire Information for Resource Management System Map
https://firms.modaps.eosdis.nasa.gov

National Fire Situation Awareness Map
https://maps.nwcg.gov

Sonoma County Evacuation Map
https://experience.arcgis.com/experience/8ca8296b14384a468c72e63fd6de766a

Sonoma County Road Closure Map
https://roadclosures-sonomacounty.hub.arcgis.com

ALERTWildfire.org Cameras
http://www.alertwildfire.org/northbay/index.html

Wind Flow Map. A mobile phone app is also available
https://www.windy.com

Earthquake Preparedness

Earthquake Warning California
https://earthquake.ca.gov/get-prepared/

Earthquake Country Alliance
https://www.earthquakecountry.org/prepare/

U.S. Geological Survey
https://www.usgs.gov/

Air Quality Monitoring and Weather Websites

National Weather Service
https://www.weather.gov/

NOAA HRRR-Smoke Interactive Map
https://hwp-viz.gsd.esrl.noaa.gov/smoke/index.html

Protecting Workers from Wildfire Smoke, Protecting Those Who Work Outside
http://cesonoma.ucanr.edu/Disaster_Resources/Fire/Protection_From_Wildfire_Smoke/

APPENDICES

Appendix 1. My COPE and Personal Emergency Information Sheet

NAME(S): _____

EMERGENCY PHONE NUMBERS

9-1-1	Emergencies when Police, Fire Department or Ambulance needed
(707) 565-2121	Sonoma County Sheriff's Office, non-emergency
_____	My Local Fire Department, non-emergency
(800) 222-1222	California Poison Control, San Francisco Division
(800) 743-5000	Pacific Gas & Electric
(800) 985-5990	Disaster Distress Helpline
_____	Work. Name: _____
_____	School. Name: _____
_____	Veterinarian. Name: _____

HEALTH INFORMATION

Health Insurance Company: _____ Group Number: _____

Doctor: _____ Telephone Number: _____

My Medications: _____

Allergies/Disabilities: _____

COPE CONTACTS

Neighborhood Leader: _____ Contact Information: _____

Neighborhood Co-Leader: _____ Contact Information: _____

EVACUATION INFORMATION AND CONTACTS

Evacuation Zone Number: _____

Where will you go?

Option 1: _____ Telephone Number: _____

Option 2: _____ Telephone Number: _____

KEY CONTACTS (Emergency Contact, Neighbors, At Least One Out-Of-Area Contact/Family, etc.)

Name: _____ Telephone Number: _____

Name: _____ Telephone Number: _____

ADDITIONAL NOTES:

_____

_____

_____

Appendix 2: Additional Preparedness for People with Special Needs

If you or someone in your household has a disability or a special need, you may have to take additional steps to remain safe in an emergency. Below are some suggestions that may be helpful. Additional information can be found at https://socoemergency.org/get-ready/access-functional-needs/.

- Think about what you will be able to do and what assistance you may need before, during or after an emergency. Know how you will explain to fellow evacuees or first responders what assistance is needed and what would not be helpful.
- Make sure your personal emergency plan and your COPE Neighborhood Team's emergency plan includes assistance for the person.
- Discuss your situation with your COPE Neighborhood Team, a family member and/or friend so they know your needs and can plan on providing assistance. You can also contact Sonoma County Paratransit/Volunteer Wheels at (707) 573-3377 for evacuation assistance.
- Set up a "buddy arrangement" to provide assistance. Practice with them the steps that will be needed. Make sure they know how to operate or move special devises or equipment.
- Keep specialized items ready, including extra wheelchair batteries, oxygen, catheters, medication, food for service animals, and any other items you might need.
- If you will be assisting an older adult and have questions about how to provide for them, you can call the Adult & Aging Information and Assistance Line at (707) 565-4636.

Appendix 3. Two Way Communication Methods and Notices for First Responders

Two-Way Devices

Ham Radio – several COPE and CERT volunteers are "ham radio operators" and have communications equipment that allow them to communicate with each other and in some cases with emergency officials. Sonoma County Radio Amateurs (SCRA) helps with this purpose as does the Sonoma Count Auxiliary Communications Service which has a voluntary program for those wishing to learn about emergency communications.

GMRS ("General Mobile Radio Service") Radio – This refers to a licensed radio service that uses specific channels for two-way voice communications. The license does not require an examination or test but does require a $70 license good for 5 years. The GMRS radios can range from 2-watt radios to 50-watt base stations and can be handheld or mounted in vehicles. Because the frequencies are more restricted, they have a greater likelihood to provide clear communications than Family Radio Service ("FRS") which is basically a low powered walkie-talkie requiring no license. The Northern Sonoma County CERT and several COPE groups are experimenting with GMRS radios because of their increase range. However, these radios are "line of sight" radios so signals will not go through hills from one valley to the next without signal repeaters. Northern Sonoma County CERT recommends the Midland GXT-1000 GMRS radio which comes with NOAA radio weather alerting system built in. We generally communicate on GMRS Channel 7 – 462.7125 MHz – privacy code 8 – 88.5 Hz.

FRS (Family Radio Service) – This refers to unlicensed, limited power, walkie-talkie 2-way radios used for very short-range communications. This is possibly useful in a COPE neighborhood if all communications can be line-of-sight.

Cellular Phones – Nearly everyone has a cell phone and COPE leaders can use them in emergencies to communicate with neighborhood leaders or each other. For residents without cell phones a COPE leader can use their cell phone to call on a landline to provide information or check on their status. The main drawback of cellular phones is whether there is cell service during an emergency. Loss of cell towers or power to cell towers can eliminate this method.

In-person communications – this method, going to a person's home to check on their status, only works when there isn't significant danger to the COPE leader or volunteer because they should be evacuating and not trying to reach their neighbors. If there is enough time, however, this can be a method used when no other means of communication is working due to lack of cell service, lack of power to recharge cell phones, or other communications issues.

Evacuation Notices for First Responders

Residents are encouraged to use official COPE and Sonoma County signaling to show their evacuation status. If you evacuate, leave your gate open and a Sheriff-issued ribbon where it can be easily seen from the street; your gate, mailbox or front door. This will tell first responders and your neighbors that you have departed your residence.

It is often extremely useful to first responders to have signage that indicates the locations of certain items, especially in rural areas and for those responding from outside your area. Below is a list of items and examples of signs. Signs can be professionally made or made yourself. If you make them yourself it is best to have them fire resistant.

- Location of water sources.
- Location of power, gas and propane shutoffs.
- Location of large vehicle turn-arounds.
- Presence of buried propane lines.
- Presence or absence of generator to energize water pumps.
- Location of ladders for access to roof (leave out and accessible when possible).
- Location of septic tank to avoid cave-in from bulldozer or fire truck.

Appendix 4. Pets, Equines and Livestock

All animals are affected by disasters. Your animal disaster plans should include Go Bags, Emergency Supply Kits, important contacts and documents and evacuation resources and helpers. Information that will help you prepare your animal disaster plans and know what to do for your animals in an emergency, disaster or extreme weather is provided in this appendix. Listed at the end of the appendix is contact information for some of the local agencies and organizations that can provide more information and assistance for your animals' safety.

Planning for a Disaster

- Have more than 1 plan for evacuating, as well as emergency sheltering in place with your animals.
- Have food, water, medications, first aid and sanitation supplies, favorite toys, treats, bedding and other essentials for each animal for at least 3 to 5 days, if evacuating, 10 to 15 days for your home emergency supplies.
- If you have equines or livestock, plan for extended power outages that might impact your water supply and fencing.
- Make emergency kits and Go Bags for your animals. They should include important documents, such as animal registration, vaccination and medical records and a veterinary care directive. Leashes, harnesses, halters, ropes, crates and carriers should all be ready.
- Have proof of ownership of your animals, including a photo of you with each animal.
- Put a photo of your animals, their names and microchip numbers in your cell phone contacts and emergency binder.
- Make sure your animals can be identified. Pets should wear a collar or harness with an ID tag that has their name and your phone number. For large animals, braid a temporary ID tag with your phone number into their mane, use a livestock crayon or spray paint to write your phone number on the animal.
- Get your pets and equines microchipped and enrolled into a recovery database. Microchipping is the best way to ensure that you are reunited with your pet if you are separated. Register the microchip with the manufacturer and keep your contact information up to date.
- Have a sturdy crate or carrier for each pet, unless one is large enough to comfortably hold two, with enough room for them to lie down and it can be easily moved. Include pee pads and small or disposable litter boxes. Write the pet's name, your name and phone contact on each carrier.
- Make sure you have proper equipment for animals to ride securely in a vehicle (carriers, harnesses or pet seatbelts). Do not let them roam free in the vehicle, for your safety and theirs.
- When preparing your plan, it is important to understand the difference between Evacuation Warnings (Voluntary), and Evacuation Orders (Mandatory), and how this impacts your animal planning:

- Before a Mandatory Evacuation Order is issued, you and your animal helpers are allowed continued access to your property.
- Under a Mandatory Evacuation Order, only authorized Animal Disaster Responders and property owners and workers with an Agricultural Disaster Access document are allowed into Evacuation Order Zones.

- If you don't have a vehicle and trailer to transport your large animals, make arrangements far in advance with transportation resources. These can be friends, neighbors, volunteer groups or commercial services.
- Make a sign for your home door or window explaining where your animals and feed are located and any special needs. You can order a free Pet Rescue alert sticker at https://www.aspca.org/pet-care/general-pet-care/disaster-preparedness.
- Have a buddy system for you as well as your neighbors. Get to know your neighborhood animals. Make plans with your neighbors for evacuation assistance or to take care of each other's animals in case you or they will not be able to.
- Practice with your pets and large animals so they will load into carriers, cars and trailers calmly and comfortably in daylight and darkness.

Preparing for an Evacuation

- Have places to go with your animals and ways to get them there. Try to keep your animals and yourself out of emergency shelters, if possible.
- Create a network of friends, relatives and pet-friendly hotels outside your area where you and your animals can stay together.
- Locate boarding facilities in case you cannot find a location for both you, your pets and large animals. Keep this information on your phone, in your address book and in your disaster plan.
- BEFORE evacuating, confirm your destination availability and route. If you plan to take your pets, and/or large animals to an emergency shelter, evacuate early and have multiple options, as shelters fill up fast. Check updates provided by local Emergency Services.
- Contact your animal transportation and temporary shelter resources during Red Flag Warning, Flood Advisory and other weather warnings and watches. Confirm that you will have enough vehicles and experienced helpers to safely transport your animals.
- DO NOT WAIT for an Evacuation Warning or Mandatory Evacuation Order. If you will have to navigate narrow roads or have many animals to move you may put yourself and animals at risk. Plan to move during daylight and safer conditions.
- Stage your vehicles and trailers ahead of time for quick loading and fast getaway. Fuel up, check the hitch, brakes, taillights and tires. Have supplies loaded prior to needing to evacuate.
- Prepare your animals for possible evacuation by moving them early into a secure, confined location. Bring pets indoors and, if possible, put equines and livestock into a small paddock or pen where they can be loaded easily. Make sure pets cannot get out through an open door or window, especially if you are preparing to leave.

During a Disaster

- Take your animals with you when you evacuate. Evacuate EARLY, especially if you have equines, livestock, numerous pets or will need to make more than one trip to get your animals to safety. Your animals' reactions under duress will be different than normal. They may be hard to catch or load into carriers and trailers, so give yourself plenty of time.
- Check emergency alerts for Emergency Small and Large Animal Shelter Information and whether there will be special requirements, like during a pandemic.
- Make sure all animals have identification on them.
- If you have to leave your animals behind:
  - Contact the Animal Hotline (707-565-7100) immediately to request assistance.
  - Do not leave them chained or tied up, or inside a crate, shed, barn or stall.
  - Close barn doors, shed doors and gates to prevent animals from running back inside.
  - Leave plenty of water and food for them.
  - Hide a key for responders or take one to Animal Control.
  - If you have not already done so, make a sign to notify first responders where your animals are located on the property. Leave it somewhere obvious like your front door or window.
  - Notify first responders you may encounter on the road of possible loose equines or livestock locations.

Bio-Safety

- During a human disease outbreak, be prepared for strict protocols that affect your animals' comfort and safety. Follow instructions provided by emergency services.
- Animal Diseases: Be aware of any poultry or livestock quarantines that may impact sheltering or evacuation. This information is available through the University of California Cooperative Extension (UCCE). Their website is http://cesonoma.ucanr.edu/.

Safety During Extreme Weather Conditions

- During cold temperatures, especially below freezing (32˚F), bring your animals inside or provide a warm, solid shelter to protect against the wind. Put livestock blankets on for warmth and protection from the elements. No pet should be left outside for long periods in below-freezing weather. Like people, cats and dogs are susceptible to frostbite and hypothermia. Old, young and sick animals may be more susceptible to extreme weather conditions. Provide plenty fresh, clean water. Do not leave animals in a vehicle and shorten walks. Cats tend to curl up next to a warm vehicle engine for warmth. Check underneath your car, bang on the hood and honk the horn before starting the engine
- During hot weather, provide ample fresh, clean, cool water and shade. Letting them run through a sprinkler and turning on a fan for ventilation will help keep their body temperature lower. If it's hot outside for you, it's even hotter for your pet. Leave your pets at home if possible. Never leave your animal in a vehicle even for short periods, even in the shade with windows cracked. Cars can overheat quickly to deadly temperatures, even when the weather isn't severe. Take walks, hikes, runs or rides during cooler hours of the day. Avoid hot surfaces, such as asphalt, that can burn your pet's paws. If it is too hot for you to walk barefoot, it is too hot for them. Seek emergency care

if your pet shows signs of heat stress; anxiety, excessive panting, restlessness, excessive drooling, unsteadiness, abnormal gum and tongue color or collapses. Signs of heat stress are subtler with livestock. Classic signs of heatstroke in all livestock include lethargy, disorientation, trembling and lack of appetite.

Northern Sonoma County Animal Emergency Contacts

Listed below is contact information for some of the agencies and organizations that can be helpful during a disaster.

Animal First Aid, Supply Checklists and More

- Sonoma County Animal Services: https://sonomacounty.ca.gov/Health/Animal-Services/
- American Veterinary Medical (AVM) Association: https://www.avma.org/
- University of California Cooperative Extension (UCCE) Sonoma County: http://cesonoma.ucanr.edu/
- California Department of Food and Agriculture (CDFA) Preparedness Resources: https://response.ca.gov/Preparedness_Resources
- Sonoma CART: https://www.sonomacart.org/

Injured Animals - Call your veterinarian or local 24-Hour Emergency Pet Hospital

- VCA PetCare Santa Rosa: 707-579-3900
- VCA PetCare Rohnert Park: 707-584-4343

Stray Animals

- Sonoma County Sheriff, non-emergency: 707-565-2550 / 707-565-2121
- Sonoma County Animal Services: 707-565-7100

Large Animal Rescue - Injured, down or trapped equines, cattle, or other large animals.

- Call a veterinarian
- Call 9-1-1, request "Large Animal Rescue"

During a Disaster - Help to transport equines & small ruminants (sheep, etc.) during Red Flag Warning or other preparatory or voluntary evacuation notices.

- Fleet of Angels/Equines (Facebook)
- NorCal Livestock Evacuation: 707-234-7193
- Sonoma County Horse Council (Facebook)
- CB Ranch (Facebook)
- Dogwood Animal Rescue Project: Facebook or http://www.dogwoodanimalrescue.org

To Request Care for Animals Sheltering-in-Place

- Immediately call the Animal Hotline to request "Welfare Checks" for animals at home or observed loose: 707-565-7100 (Sonoma County Animal Services) or 707-861-0699 (Sonoma CART)
- For Commercial Livestock Access & Assistance - Contact Sonoma County Agriculture Commissioner: 707-565-2371 and check Sonoma County Farm Bureau Facebook page

Mandatory Evacuation

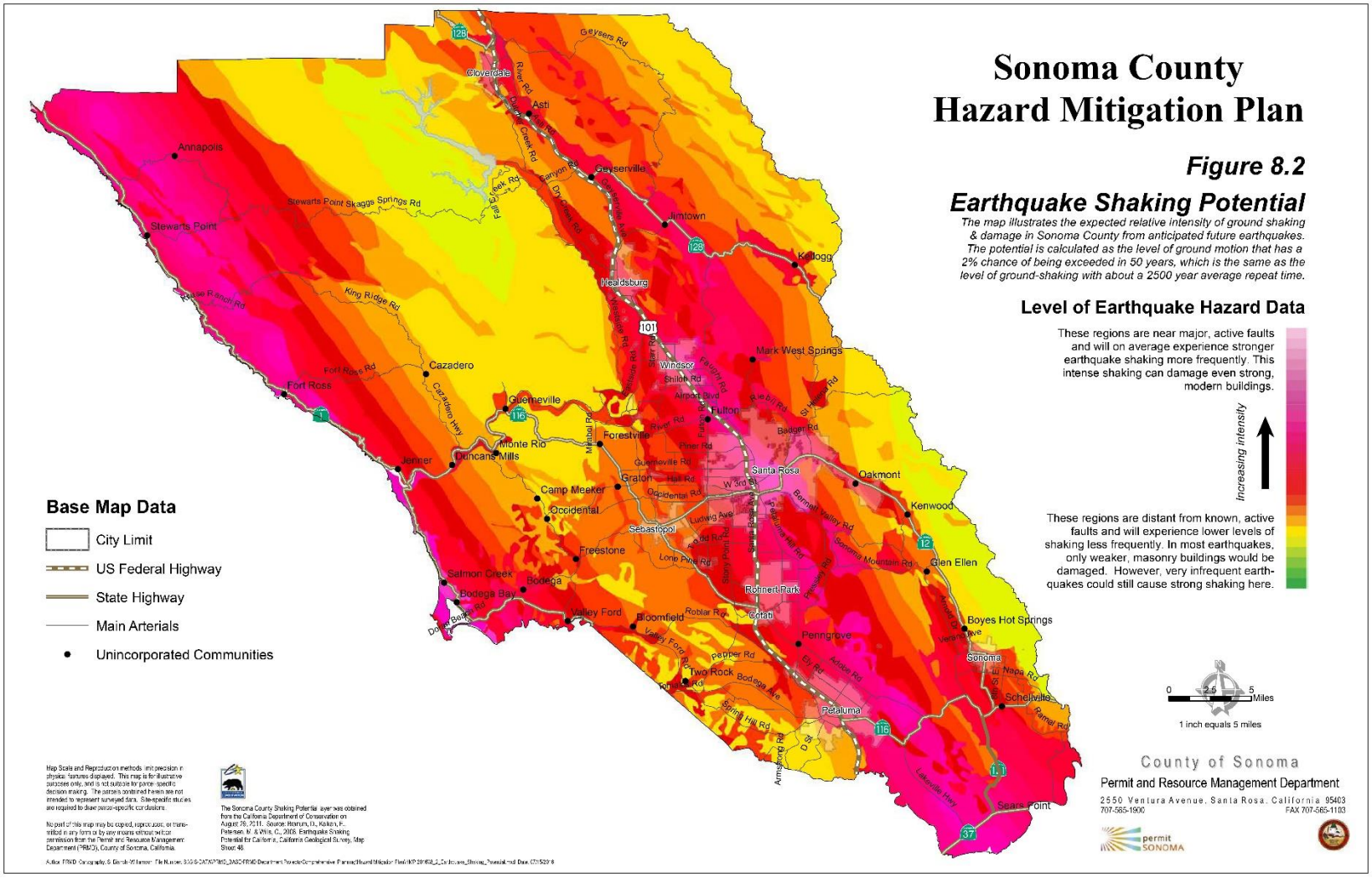
- Sonoma County Animal Services: 707-565-7100
- Sonoma CART (Community Animal Response Team): 707-861-0699
- Sonoma County Sheriff's Office: 707-565-2550 / 707-565-2121
- Sonoma County 211: 2-1-1
- Sonoma County Horse Council: Facebook
- North Bay Animal Services: 707-762-6227

Pet Reunification

- Facebook: Sonoma County Animal Services, Paws911, Pet Rescue & Reunification and Local Incident-Specific Facebook pages
- Check local veterinary hospitals
- Post on NextDoor

Appendix 5. Sonoma County Hazard Mitigation Maps

The maps in this appendix were reproduced from the Sonoma County Hazard Mitigation Plan (HMP), dated September 2017, with written permission from Sonoma County Permit and Resource Management Department. The maps are for illustrative purposes only and do not include information for incorporated areas (cities and towns) that do not participate in the County HMP or for land that is under local responsibility. The Sonoma County HMP is updated every 5 years. Some cities and towns have produced their own HMP that will include similar information.



Map Scale and Reproduction methods limit precision in physical features displayed. This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The parcels contained herein are not intended to represent surveyed data. Site-specific studies are required to base parcel-specific conclusions.

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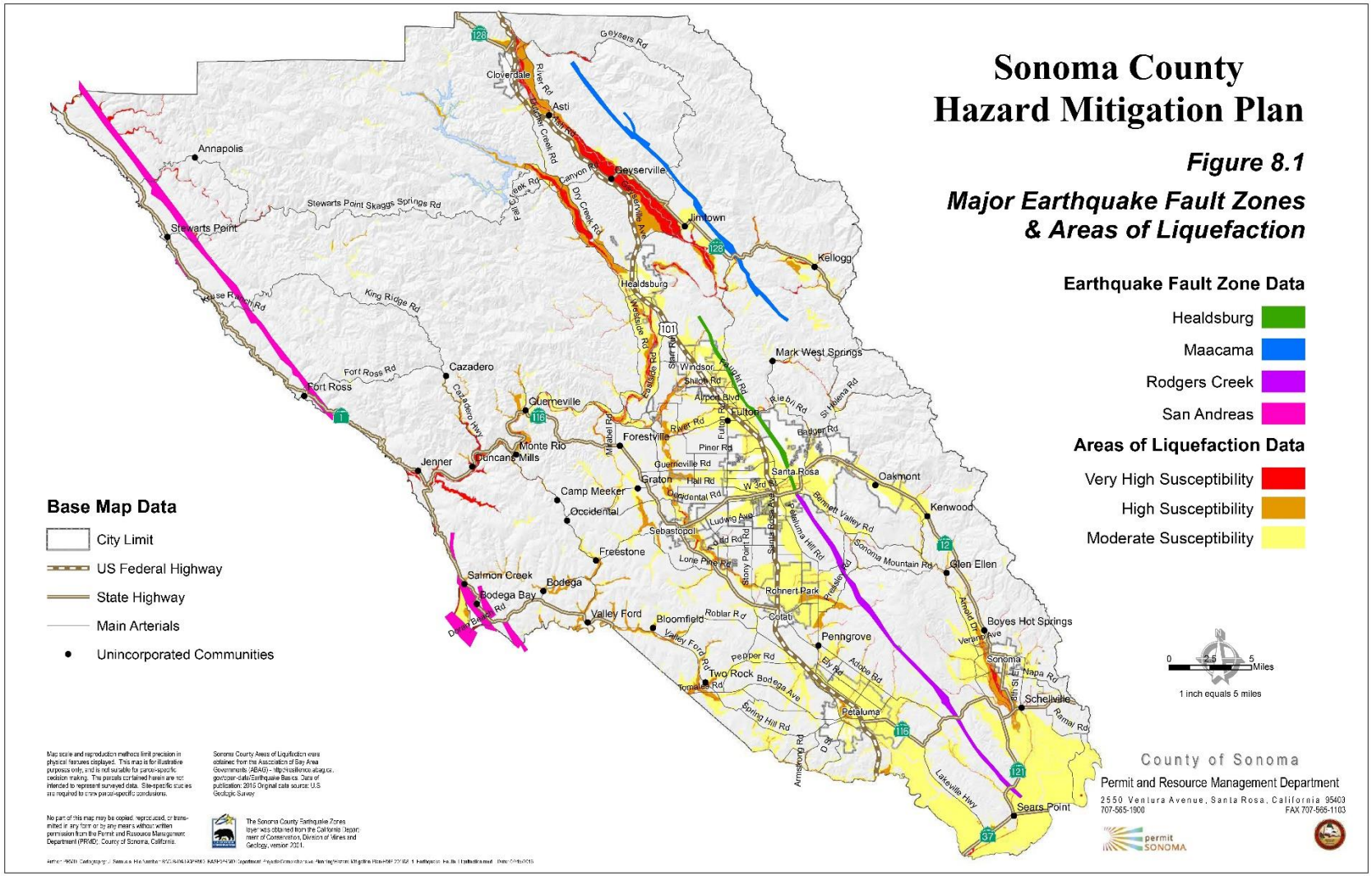
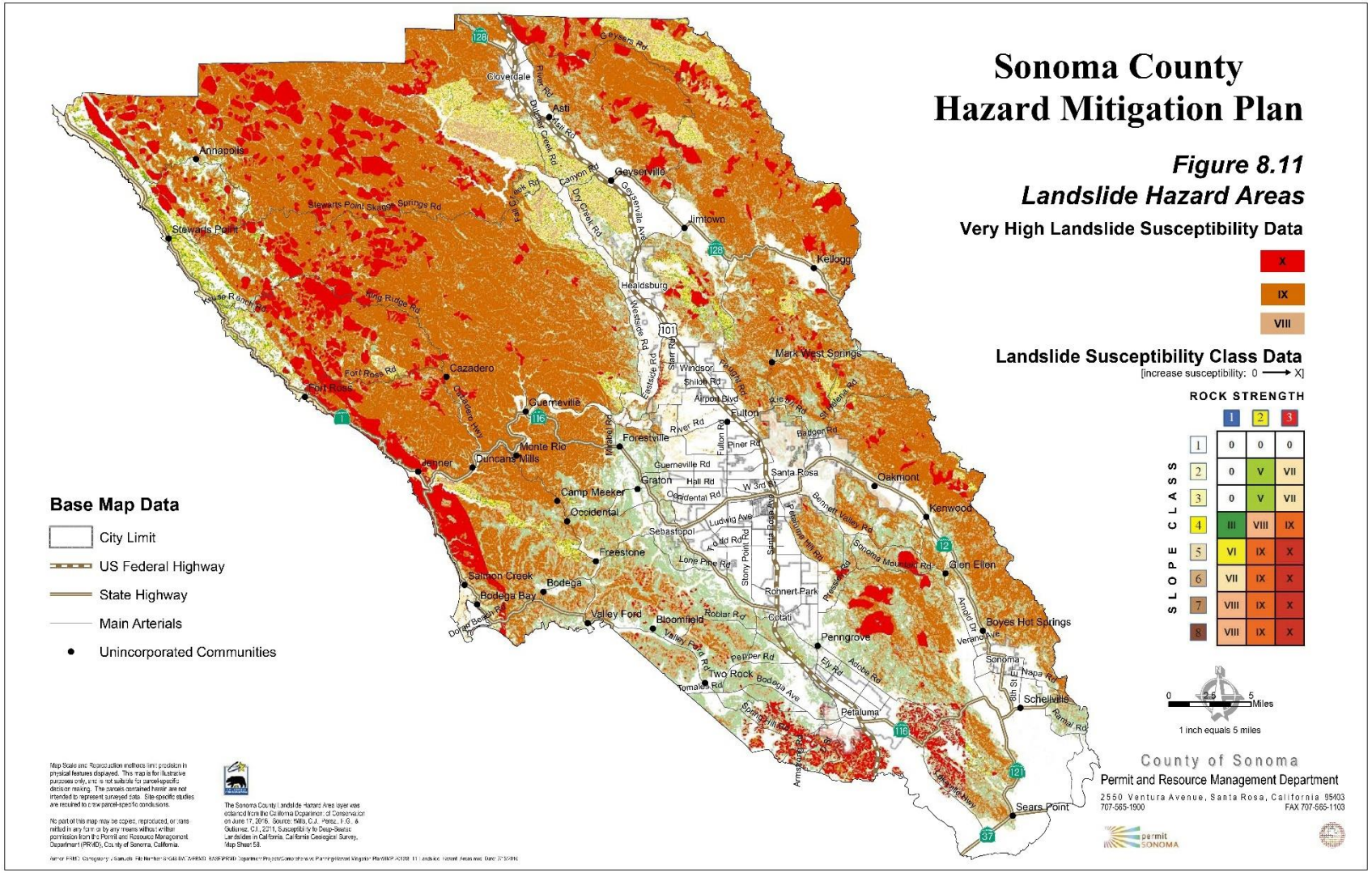
The Sonoma County Shaking Potential layer was obtained from the California Department of Conservation on August 26, 2011. Source: Honrun, D., Kalkan, E., Petersen, M. & Wills, C., 2008. Earthquake Shaking Potential for California, California Geological Survey, Map Sheet 48.


Sonoma County
Hazard Mitigation Plan
Figure 8.1
Major Earthquake Fault Zones
& Areas of Liquefaction
Earthquake Fault Zone Data
Healdsburg
Maacama
Rodgers Creek
San Andreas
Areas of Liquefaction Data
Very High Susceptibility
High Susceptibility
Moderate Susceptibility
Base Map Data
City Limit
US Federal Highway
State Highway
Main Arterials
Unincorporated Communities
Cloverdale
Asti
Geysers Rd
Annapolis
Stewarts Point Skaggs Springs Rd
Stewarts Point
Geyserville
Jimtown
Kellogg
Healdsburg
King Ridge Rd
Fort Ross Rd
Fort Ross
Cazadero
Cazadero Hwy
Guerneville
Monte Rio
Duncans Mills
Jenner
Forestville
Mirabel Rd
River Rd
Piner Rd
Guerneville Rd
Graton
Hall Rd
Occidental Rd
Camp Meeker
Occidental
Sebastopol
Freestone
Salmon Creek
Bodega
Bodega Bay
Valley Ford
Bloomfield
Roblar Rd
Cotati
Lone Pine Rd
Stony Point Rd
Santa Rosa Ave
Petaluma Hill Rd
Rohnert Park
Penngrove
Pepper Rd
Two Rock
Bodega Ave
Spring Hill Rd
Petaluma
Lakeville Hwy
Sears Point
Windsor
Shiloh Rd
Airport Blvd
Fulton
Mark West Springs
Santa Rosa
W 3rd St
Bennett Valley Rd
Oakmont
Kenwood
Glen Ellen
Sonoma Mountain Rd
Boyes Hot Springs
Sonoma
Napa Rd
Schellville
Adobe Rd
Arnold Dr
Verano Ave
Petaluma Blvd S
Penngrove
Ely Rd
Pleasant Hill Rd
Ludwig Ave
Todd Rd
Roblar Rd
Valley Ford Rd
Topaz Rd
Armstrong Rd
Dutton Ave
Dutton Meadow Rd
Bodega Bay Rd
Freestone Flat Rd
Canyon Rd
Dry Creek Rd
Westside Rd
Healdsburg Ave
Alexander Valley Rd
Chalk Hill Rd
Eastside Rd
Starr Rd
Faught Rd
Fulton Rd
Old Redwood Hwy
Santa Rosa Creek Rd
River Rd
Petaluma Hill Rd
Stony Point Rd
Lone Pine Rd
Todd Rd
Roblar Rd
Valley Ford Rd
Topaz Rd
Pepper Rd
Two Rock
Bodega Ave
Spring Hill



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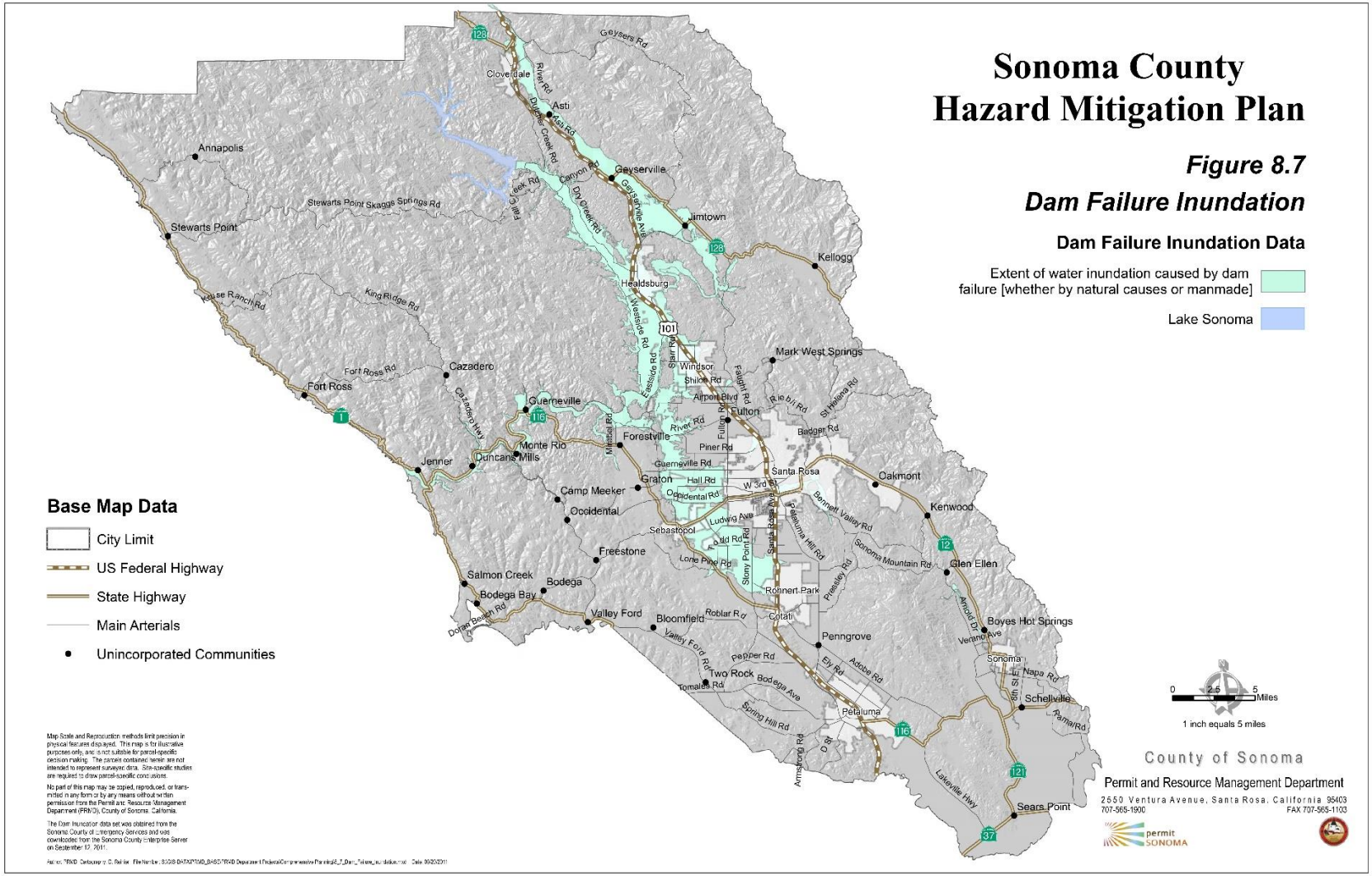
The Sonoma County Landslide Hazard Area layer was obtained from the California Department of Conservation on June 17, 2016. Source: Wills, C.J., Perez, F.G., & Gutierrez, C.I., 2011, Susceptibility to Deep-Seated Landslides in California, California Geological Survey, Map Sheet 58.



Map Scale and Reproduction: methods limit precision in physical features displayed. This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The parcels contained herein are not intended to represent surveyed data. Site-specific studies are required to draw parcel-specific conclusions.

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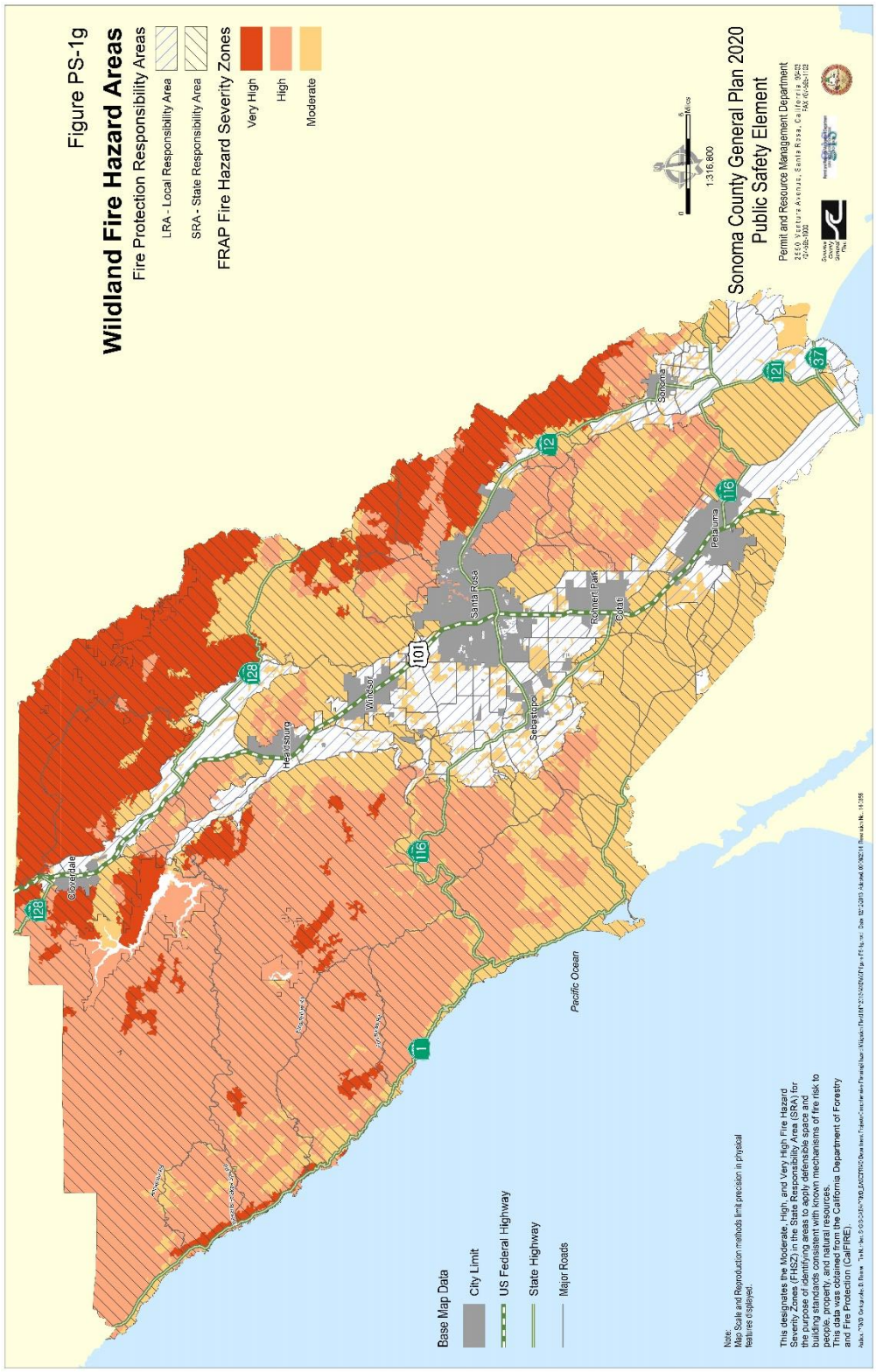
The Dam Inundation data set was obtained from the Sonoma County of Emergency Services and was downloaded from the Sonoma County Enterprise Server on September 12, 2011.

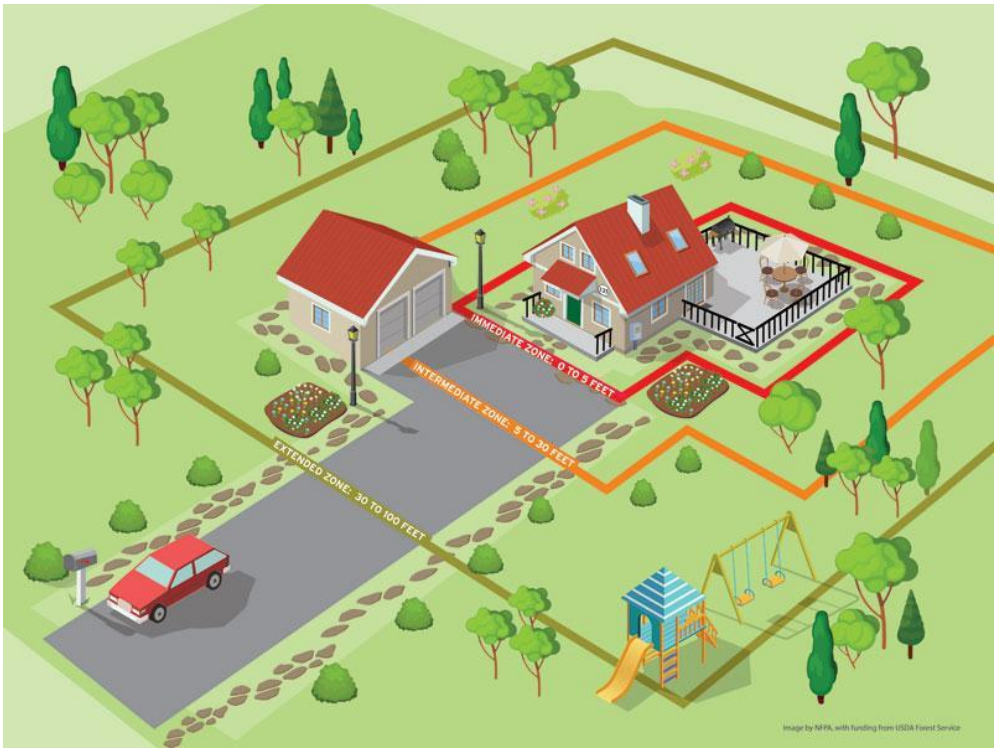
Appendix 6. Wildland Fire Hazard Areas Map



Appendix 7. Defensible Space to Reduce Wildfire Risks

Defensible space is the area surrounding your home that is maintained to reduce the threat of a wildfire and improve the odds of firefighters effectively defending your home. If vegetation is properly modified and maintained, a wildfire can be slowed, the length of flames shortened and the amount of heat reduced, which will assist firefighters in defending the home against an oncoming wildfire. There are 5 main steps in creating an effective defensible space that should be evaluated every spring to prepare for fire season.

- *Know your distance.* The defensible space distance and recommended distances between trees and brush varies depending on the vegetation and steepness of the slope. The minimum total distance is typically 100 feet.
- *Remove the dead.* Remove dead vegetation and fallen leaves and needles.
- *Create separation.* The more continuous and denser the vegetation, the greater the wildfire threat. Depending on the slope of your terrain, shrubs or small clumps of shrubs should be separated from one another by at least twice the height of the average shrub. More distance is needed on slopes.
- *No ladder fuels.* Ladder fuels are vegetation that can help the fire climb up from low-growing plants to adjacent taller shrubs and trees. Remove shrubs and trees growing under the drip line (canopy) of trees and remove low-hanging branches not to exceed the bottom 1/3 of the tree's height.
- *Make it lean, clean and green*. Regularly maintain your property by pruning and watering to eliminate easily ignitable fuels. LEAN – use small amounts of flammable vegetation. CLEAN – no accumulation of dead vegetation or other flammable debris. GREEN – ensure plants are healthy and green, especially during fire season.



Defensible space is often broken into 3 separate zones;

Zone 1: 0 to 5 Feet – Immediate Zone
Zone 2: 5 to 30 Feet – Intermediate Zone
Zone 3: 30 to 100 Feet – Extended Zone

The three zones of defensible space are described below, along with suggested actions for each zone. If your property is on a 20% or greater slope, the recommendations for spacing of vegetation is greater. More details on creating defensible space, including the recommended distances for your property can be found at https://www.firesafesonoma.org/wp-content/uploads/living_with_fire.pdf.

If the task of re-landscaping or removing plants on your property feels overwhelming, start next to the house and work your way out, doing a section at a time. Choose fire-resistant plants for your property. They are typically low growing, have a high moisture content and have stems and leaves that are not resinous, oily or waxy. Deciduous trees are generally more fire resistant than evergreens because they have a higher moisture content when in leaf, but a lower fuel volume when dormant. For a list of plants considered "fire smart" and "fire hazardous" you can go to https://www.firesafemarin.org/plants.

ZONE 1: 0 to 5 Feet from Buildings, Decks, Etc., Including Structures

Zone 1 is sometimes referred to as the Exclusion Zone. It should be free of all combustible material. Ideally, this includes vegetation because all vegetation can burn, including succulents, cactus and native plants. Besides your home, a 5-foot non-combustible zone should be created around all other structures; decks, sheds, barns etc.

High winds are often the drivers of wildfire. High winds can send embers flying as far as a mile in front of an advancing fire. Flying embers can hit a building and pile next to it. Winds can also deposit dry leaves and other debris in the same areas. No matter how clean this zone was prior to a wildfire, there is always a chance that embers can ignite newly deposited leaves or debris. The location where leaves pile up around your house on a windy day, is usually the same location where embers will be blown. Be mindful of what is directly above and in these areas. Remedies may have to be taken to alleviate the possibility of ignition from burning leaf litter, especially around doors and windows.

Zone Considerations:

- Remove all vegetation, wood piles, flammable mulches, wood furniture and furnishings of any kind in this zone.
- Keep leaves, needles and other vegetation off roofs, gutters, decks, stairs, etc., especially during fire season. Roof and gutter build up is a huge source of ignition.
- Remove combustible debris like trash, cardboard or wood near buildings.
- Remove climbing vines and trellises from buildings.
- Store firewood and wood piles at least 30 feet away from buildings and remove vegetation within 10 feet of piles.

- Never store flammable material under stairs or decks or up against house walls.
- Enclose or board up the area under your deck to keep it from becoming a fuel bed for hot embers.
- Do not plant under eaves or vents, in front of windows or near inside corners.
- Replace any wood chips, gorilla hair or other flammable mulches with rock or bare earth. Wood mulch is a huge conductor of fire so it is imperative that there not be any near the home.
- Consider installing weed protection under any loose stone so you don't have to remove weeds every year.
- Trim tree branches and shrubs at least 10 feet away from structures, roofs, chimneys, stovepipes and powerlines.
- Remove any dead or dying branches from all trees surrounding structures.
- Keep a minimum six-inch, vertical noncombustible zone between the ground and the start of the building's exterior siding.

ZONE 2: 5 to 30 Feet from Buildings, Decks, Etc.

This is the "Defensible Space Zone". Keep it lean, clean and green to keep wind-blown embers from igniting materials near your home, exposing it to flames.

Zone Considerations:

- Have good horizontal spacing between bushes or plant clusters (islands of plants). At a minimum, the distance between bushes or plant islands should be 2 times the height of the tallest plant. Agencies recommend further spacing for slopes.
- Have tree canopies spaced at least 10 feet apart, more on steep slopes.
- Keep trees pruned at least 6 feet from the ground and maintain any plants beneath them to the appropriate spacing. As a general rule, the space between a plant and branches above should be at least 3 times the height of the plant. Recommended distances between trees and shrubs are shown in the Fire Safe Marin document, https://firesafemarin.org/images/documents/resources/FIRESafe_MARIN_plant_spacing_2017.pdf.
- Use fire resistant tarps to cover wood piles.
- Remove any dead or dying trees or vegetation. Keep plants low and well maintained.
- Plant native plants that are adapted to your site conditions. Native plants have the added benefit of supporting wildlife.
- Replace ignitable mulch with gravel, soil compost or plant ground covers. Consider using gravel or sand as a base for play structures, etc.
- Keep weeds clear. Any extra fuel on the ground when grasses turn brown will add to the fuel load.
- Consider how a new plant will look when it is mature. Will you have to prune yearly to keep the recommended distances? Will it become woody and prone to igniting? Will it drop leaf litter that you will have to routinely clean up?
- Create fuel breaks using driveways, lawns, paths, patios, parking areas, non-combustible retaining walls, boulders, dry streambeds, inorganic mulches, water features (pools, ponds or streams) and open spaces.

- If the size of your property prevents you from completing the items listed for Zones 2 and 3, meet the conditions you can and talk to your neighbors to do a combined plan. The effectiveness of defensible space increases when multiple property owners and neighborhoods work together. The priority for all property owners is to have non-combustible, 5-foot areas surrounding all structures and to modify your home and landscaping to better withstand a potential fire.

ZONE 3: 30 to 100 Feet from Buildings, Decks, Etc.

Zone 3 is a transition space to the wider landscape, often referred to as the "Extended Zone" or "Reduced Fuel Zone". Reducing fuels in Zone 3 will help reduce the energy and spread of wildfire, thus creating a landscape that will not readily transmit fire to the home. If the property is on a slope, it is especially important to eliminate ladder fuels because wildfires move faster upslope.

Sonoma County requires homeowners maintain a 10-foot minimum clearance next to roadsides and driveways. However, ResQFast has recommended a minimum of 10 feet by 12 feet high access for fire engines. Keeping these areas open provides better access for both evacuees and first responders trying to get to your property.

Zone Considerations:

- This area should be maintained to meet the plant distancing recommended for Zone 2, at a minimum.
- Remove undergrowth and thin out densely-crowded trees.
- Remove dead and dying brush, trees and branches that are within 15 feet of the ground.
- Keep all grasses (dead, dying or live) mowed to 4 inches or lower.
- Keep the area free of invasive plant species. Invasive plants are a big problem in California and it is all of our responsibility to slow the spread.
- If you are going to use mulch, use 2 inches or less of Arbor Mulch.
- Maintain a 10-foot vegetation free zone around and above propane tanks. Have propane tanks at least 30 feet from structures.

In addition to the above suggestions, CAL FIRE has the following recommendations:

- Plants shorter than 2 feet are safer than taller plants.
- Herbaceous plants that are kept green are a better choice than shrubs and trees.
- Avoid planting junipers, pine trees and palm trees.
- Avoid Oleanders unless you keep them trimmed up with no leaf litter below.

Additional Resources for Creating Defensible Space

Sonoma County Fire Code
https://sonomacounty.ca.gov/PRMD/Fire-Prevention/County-Fire-Code/

Fire Safety Laws for State Responsibility Areas
https://www.readyforwildfire.org/more/fire-safety-laws/

Sonoma County Fire Prevention Division, includes free Chipper Program and requirements for construction in high and very high fire severity zones
https://sonomacounty.ca.gov/PRMD/Fire-Prevention/

CAL FIRE, Wildfire is Coming. Are You Ready? Survey
https://www.fire.ca.gov/dspace/

UC California Cooperative Extension, Fire in California
https://ucanr.edu/sites/fire/Prepare/

University of Nevada Cooperative Extension, The Combustibility of Landscape Mulches
https://naes.agnt.unr.edu/PMS/Pubs/1510_2011_95.pdf?utm_source=publications&utm_medium=pub-download&utm_campaign=pub-link-clicks&utm_content=2982

Resilient Landscape Coalition, Sonoma Resilient Landscapes
https://www.sonomaresilientlandscapes.com/firewisedesign.html

UC Master Gardner program of Sonoma County, Fire Wise Landscaping
http://sonomamg.ucanr.edu/Firewise_Landscaping/

UC Marin Master Gardeners
http://marinmg.ucanr.edu/

Sonoma Ecology Center, Landscaping Brochure
https://www.sonomaecologycenter.org/wp-content/uploads/2018/10/2018Landowner-WaterFireWildlife-Pamphlet-Oct5.pdf

Book: *Bringing Nature Home* by Douglas Tallamy

Appendix 8. Home Hardening

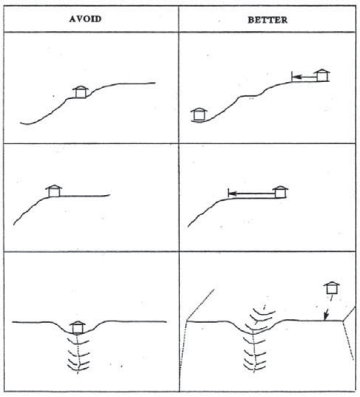
Home hardening is preparing your home to better withstand a wildfire and ember storm. Home hardening addresses the most vulnerable components of your house with building materials and installation methods that increase your home's resistance to heat, flames and embers that accompany most wildfires. The key to protecting your home and property from fire is to start with the house and work out**.** The 6 main areas to focus on during home hardening are eaves, windows, siding, decks, roof and vents. If you are building a new home, consult the California Building Code, Chapter 7A for building in wildfire-prone areas.

Ignition Resistant Construction + Defensible Space = Survivable Space.

Survivable Space is similar to Defensible Space, except it emphasizes the house surviving without significant firefighter or homeowner action. It combines Defensible Space with ignition resistant construction methods and materials, many of which can be retrofitted to existing homes.

*Slope of Terrain***:** Build on the most level portion of the land, since fire spreads more rapidly on even minor slopes. Avoid building on mid-slopes and away from ridge tops, canyons and areas between high points on a ridge.

Locating on your lot or acreage: Set your single-story structure at least 30 feet back from any ridge or slope; increase distance if your home will be higher than one story.



Build your home at least 30 feet from the property line so adequate defensible space can be established. If building on acreage, consider a minimum setback of 100 feet or more.

Consider adding ignition resistant construction elements for your new or existing home.

Design, build or maintain a firewise structure utilizing passive ignition resistant measures. Use or replace with construction materials that are ignition-resistant whenever possible. Confirm the materials you use are also seismically safe to withstand an earthquake. Use construction methods that resist ignition and fire infiltration.

Roof: For new and replacement roof construction, use only Class-A materials, such as asphalt shingles, slate, clay tile, metal or concrete products. Constructing a fire-resistant sub-roof can add additional protection. Avoid use of valleys and gutters where flammable debris can collect. Use the same building material for patio coverings.

Siding / Exterior Wall Facing: Use fire resistant exterior wall systems and materials that are at least "one-hour rated," materials that will hold back fire for a minimum of one hour. Stucco or masonry, or ignition resistant siding panels or boards are good choices. They are much better than wood, wood shingles, aluminum or vinyl, all of which are readily ignitable and/or fail quickly. Underlayment of gypsum board combined with ignition resistant siding adds even greater protection.

Doors: Provide at least two ground level doors for easy and safe exit and at least two means of escape (i.e., doors or windows) in each room so that everyone has two ways out. Exterior doors should be one-hour rated doors that will hold back fire for a minimum of one hour. Provide metal thresholds and install doors to be flush so burning embers cannot blow under them.

Garage Doors can also be vulnerable to failure by fire. Choose a steel-clad model. Doors should be weather sealed all around so burning embers cannot blow in. Remove any combustible materials and store them in a safe location away from the house, ideally in a detached structure, such as a shed.

Window Materials and size are important. Smaller panes hold up better in their frames than larger ones. Double or triple panes, especially with tempered glass and Low-E reflectivity are even more effective heat barriers than single pane glass. Avoid use of plastic window framing and use metal, not plastic screening.

Soffits; Eaves, Decks, Balconies and Overhangs. A Soffit is the exposed underside of an overhead structural component of a building, such as eaves, balconies, decks, beams, arches, cornices and lintels. Open eaves, decks, balconies and overhangs can all act as heat traps and make the building more vulnerable to flying embers and brands and intense heat from nearby fire. Box in soffits and under eave areas with one-hour rated material. Enclose the underside of balconies and aboveground decks with fire-resistant materials.

Decks can act as heat traps and can be ignited by wind-driven flying embers and fire brands. Use skirting to enclose or box underside of decks with one-hour rated covering.

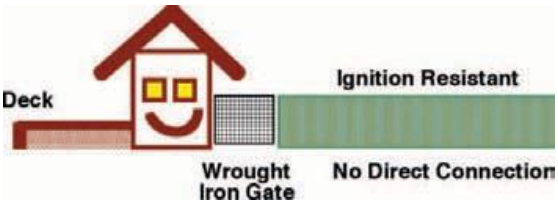
Composite Lumber: Many different companies manufacture composite lumber, each with its own proprietary formula and structural design. It is primarily used in outdoor decks and railings. It may be in the form of solid boards or may contain hollow areas. Composite lumber is a mix of plastic, wood binder and other ingredients that may provide ignition resistance inferior to wood products. When burning, composite materials tend to drip flaming liquefied plastic that "pools" on the surface below and continues to burn intensely. The State Fire Marshal's Office has flammability test results available. As with wood decking, it is crucial to protect the underside of any deck and keep cracks and crevices free of any debris.

Interior Residential Fire Sprinklers are important because they have proven to extinguish undetected fire when the structure, whether it is occupied or unoccupied. Interior residential fire sprinkles may extinguish fire originating from an exterior source, such as a wildfire where radiant, convective heat or direct flame contact has caused structural failure that allows fire intrusion into the building. They may also prevent a house fire from spreading to the wildlands. Remember there is often no electricity during a wildfire or other major emergency, which renders all sprinkler systems useless.

Gutters are best if eliminated completely. Utilize gravel filled French Drain under dripline instead. If gutters are necessary, use metal gutter guards and maintain gutters and roofs (particularly valleys) clear of leaves and other debris.

Vents: To prevent sparks from entering your home through vents, cover exterior soffit, attic, roof and under floor vents with wire mesh no larger than 1/8-inch, non-corrosive mesh. Cover your chimney outlet and stovepipe with a non-flammable screen of 1/2-inch mesh.

Attachments: include any structures connected directly to your home such as decks, porches, balconies, fences, gates, breezeways or accessory buildings. Attachments can act as fuel bridges or fire fuses! If an attachment to a home is not ignition resistant, then the home may be at risk. If you choose to attach a fence to your home, it is best to build an ignition resistant fence and gate. A wrought iron style gate separating a combustible fence may provide some protection. Use masonry, metal or distance, as a protective barrier between the fence and house. Ensure that all gates open inward and are wide enough to accommodate emergency equipment.



Use metal when constructing a trellis and cover it with high-moisture, low flammability vegetation.

Exterior Vertical Structural Members, such as Combustible Posts or Columns: Vertical members that support decks, balconies and overhangs that are not protected by ground to deck skirting should be clad with galvanized or copper sheathing to at least 1 to 3 feet above ground or built on concrete footings at least 1-foot above grade.

INSPECTION & MAINTENANCE

Make periodic inspections of your home, looking for deterioration, such as breaks and spaces between roof tiles, warping wood, cracks and crevices and rodent entry points in the structure. Use a caulking gun and clear, fire-resistant caulk to fill all cracks, holes, spaces around window and door frames and any other place an ember can get lodged or penetrate the home exterior.

Prevent combustible materials and debris, including dry grass and leaves from accumulating beneath patio decks or elevated porches.

Use metal components where possible. Use of plastic exterior building components, such as siding, decks, vents, skylights, gutters and downspouts and certain window frames can melt and/or ignite and should not be used.

Performing routine maintenance is necessary to have effective Home Hardening and Defensible Space.

The National Volunteer Fire Council, NVFC, offers a Wildland Fire Assessment Program, WFAP, where interested persons can learn to do their own home assessment and teach others to do the same. To find out more, you can go to: https://www.nvfc.org/programs/wildland-fire-assessment-program/.

HOME HARDENING RESOURCES

Listed below are selected websites for additional information and products that might be useful in hardening your home. The listing does not indicate endorsement by COPE or guarantee the product's effectiveness. CAL FIRE's Low Cost Retrofit List to harden your home and create Defensible Space is presented on the following page.

Building Codes in California
https://osfm.fire.ca.gov/divisions/code-development-and-analysis/wildfire-protection/

National Fire Protection Agency
https://www.nfpa.org/Codes-and-Standards

Office of the State Fire Marshal
https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/

Fire Safe Marin
https://firesafemarin.org/home-hardening/fences

National Fire Protection Association
https://www.nfpa.org/-/media/Files/Firewise/Fact-sheets/FirewiseFactSheetsRoofingMaterials.ashx

Building and Living in the WUI Check List – Ventura County Fire Department
https://defensiblespace.org/wp-content/uploads/2020/11/VCFD-WUI-Insert-04-2019-final.pdf

University of California Agriculture and Natural Resources
https://ucanr.edu/sites/Wildfire/Roof/Roof_Covering/Office of the State Fire Marshal

Financing for Home Hardening Options
https://sonomacounty.ca.gov/General-Services/Energy-and-Sustainability/For-Residents/

Products

Vents

Fire Safe Marin
https://Firesafemarin.org/home-hardening/vents

Vulcan Technologies
https://www.vulcantechnologies.com/

Embers Out
https://www.embersout.com/

Brandguard
https://Brandguardvents.com/vent-products/

Academy Fence
https://weldedwirefence.com/welded-wire-fence/hardware-cloth/1-8in-x-1-8in-27-gauge-galvanized/

Lumber

Mead Clark – Decking and Fencing
http://www.meadclark.com/

Ipe Woods
https://Ipewoods.com

All Coast Builders – Hardie Board
https://Allcoastbuilders.com

Penetrants & Coatings

Fire Retardant Coatings of Texas – XT Penetrant
https://Frctexas.com

Office of the State Fire Marshall- Fire Safe Coatings
https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/

Low Cost Retrofit List

10 Low Cost Ways to Harden Your Home

1. When it is time to replace your roof, replace it with fire-resistant Class A roof material.
2. Block any spaces between your roof covering and sheathing (bird stops).
3. Install non-combustible corrosion resistant metal gutter covers on gutters to prevent the accumulation of leaves and debris in the gutter.
4. Cover your chimney and stovepipe outlets with noncombustible corrosion corrosion-resistant metal mesh screen (spark arrestor), with 3/8-inch to 1/2-inch openings.**
5. Cover all vent openings with 1/16-inch to 1/8-inch noncombustible corrosion resistant metal mesh screens.**
6. Caulk and plug gaps greater than 1/16-inch around exposed rafters and blocking to prevent ember intrusion.
7. Inspect exterior siding for dry rot, gaps, cracks and warping. Caulk or plug gaps greater than 1/16-inch in siding and replace any damaged boards, including those with dry rot.
8. Install weather stripping to gaps greater than 1/16-inch in garage doors to prevent ember intrusion. The stripping must be compliant with UL Standard 10C.
9. When it's time to replace your windows, replace them with multi-paned windows with at least one pane of tempered glass.
10. When it's time to replace your siding or deck, use compliant noncombustible, ignition-resistant, or other materials approved by the Office of the State Fire Marshal (OSFM).

5 No Cost Ways to Create Defensible Space and Enhance the Effects of a Hardened Home

1. Regularly clean your roof, gutters, decks, and the base of walls regularly to avoid the accumulation of fallen leaves, needles and other flammable materials (see Defensible Space for more details).
2. Ensure all combustible materials are removed from underneath, on top of, or within five feet of a deck.
3. Remove vegetation or other combustible materials that are within five feet of windows and glass doors.
4. Replace wood mulch products within five feet of all structures with noncombustible products such as dirt, stone, or gravel.
5. Remove all dead or dying grass, plants, shrubs, trees, branches, leaves, weeds, and pine needles within 30 feet of all structures or to the property line.

*This list was developed as a best practices guide and to assist homeowners to ensure their home is more ignition-resistant from wildfires. Low cost can be subjective. Some of these items are based on upgrading to more stringent materials when that feature is up for replacement due to normal maintenance or lifespan, i.e. roofs.

** Do not use fiberglass or plastic mesh as they can melt or burn.

Updated 1/31/2020

Appendix 9. Protection from Wildfire Smoke

Wildfire smoke is a mix of gases and fine particles from burning trees, plants, buildings and other material. It can also contain chemical constituents from plastic and other materials, depending on the material that was burned in the fire. Fine particles breathed into the lungs can become respiratory irritants and can cause health problems, like persistent cough, phlegm, wheezing and difficulty breathing. When smoke from wildfires is present, it is critical to take precautions to protect your health, especially children, the elderly, people with lung disease, heart disease or diabetes and pregnant women. Some of the initial signs of health impacts from smoke are burning eyes, scratchy throat and a runny nose.

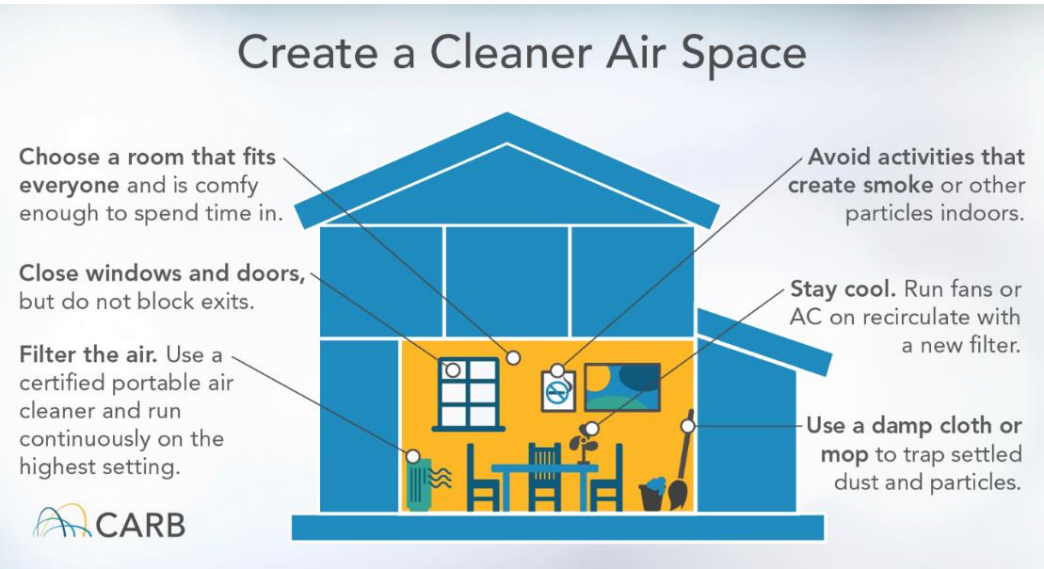
Smoke from wildfires can travel thousands of miles and tends to migrate in the direction of the wind. In 2018, smoke from the Camp Fire in Paradise, California was reported to have traveled about 3,000 miles. Smoke and soot from the Camp Fire darkened the skies above Sonoma County, resulting in numerous reported health problems and Air Quality Index (AQI) levels in the hazardous range, 301 and higher.

The U.S Environmental Protection Agency (EPA) developed the AQI system to notify the public of air quality and the potential health concerns of each level. A copy of the AQI guide for particle pollution (particulate matter) that is used for evaluating air quality during wildfires is included at the bottom of this appendix. To prevent possible health problems due to wildfire smoke, it is best to follow the suggested activities listed for each AQI level.

It is recommended that you check AQI levels in your immediate area during smokey days to know what actions are appropriate to protect your health and your family's health. The government-maintained website to look up AQI values is https://www.airnow.gov/ but be aware the only air sensor monitored by them is in Sebastopol and the numbers recorded at that station may not be the same as those at your location. Two organizations that report data from privately-owned air sensors, scattered throughout Sonoma County are https://www.purpleair.com and https://www.iqair.com. No matter whose data you follow, make sure you are using data that is appropriate for your location and that you have current readings. Air quality conditions can vary drastically by location and can change quickly, largely due to the location of the pollutant source (fire) and the wind direction. As a rule of thumb, if you smell smoke in the air, the air quality is not good and you should take steps to protect your health.

1. *Remain indoors as much as possible.* Indoors is often the best place to be when wildfire smoke is affecting your area. Bring your pets inside when AQI levels are high. If staying inside with the windows closed becomes dangerously hot, go to an air-conditioned shelter, friend's house, library or shopping center. Consider temporarily relocating outside of the area where the air is not impacted if it becomes too hot in your house or if dense smoke is inside the house. Heat takes precedent over smoke.

2. *Protect your indoor air.* Keep windows and doors closed. Open doors as little as possible to not let the smoke inside. Set air conditioning units to re-circulate to keep outside air from moving inside. Use portable air purifiers (with HEPA filters) properly sized for each room you will occupy or consider moving the purifier with you when you move into another room. Have a backup filter on hand. The California Air Resources Board's image below provides more information on protecting your home.



3. *Avoid activities that further pollute indoor air.* Avoid burning candles, using the fireplace (gas and wood), gas stove, vacuuming (unless you own a high-performance HEPA vacuum cleaner), smoking, frying or broiling food.

4. *Wear a mask outdoors.* Even short exposure to high concentrations of smoke can affect your health. If you must go out wear a respirator labeled NIOSH N-95 or P-100 and make sure it fits tight around the face, no air gaps. Paper dust masks, surgical masks, cloth masks, scarfs and bandanas will not protect you against inhaling fine particles.

5. *Outdoors and in Vehicles.* Set your vehicle's air conditioner and vents to re-circulate to keep outside air from moving inside. If you smell smoke inside your vehicle after running your air conditioner, your cabin air filter may need changing. Stay hydrated by drinking water. Avoid strenuous activities (play, exercise or work). During exercise, people increase their air intake as much as 10 to 20 times, which can bring more pollution into the lungs. Avoid adding additional air pollution by not burning wood, mowing the lawn, blowing leaves, driving and barbecuing. Smoke will get on your hair, skin and clothes when you are exposed. If you have been outside in dense smoke, consider removing your clothes in the garage and taking a shower soon after entering your house.

Air Quality Guide for Particle Pollution

Harmful particle pollution is one of our nation's most common air pollutants. Use the chart below to help reduce your exposure and protect your health. For your local air quality forecast, visit www.airnow.gov

Air Quality Index	Who Needs to be Concerned?	What Should I Do?
Good (0-50)	It's a great day to be active outside.	
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	**Unusually sensitive people:** *Consider reducing* prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. **Everyone else:** It's a good day to be active outside.
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include **people with heart or lung disease, older adults, children and teenagers.**	**Sensitive groups:** *Reduce* prolonged or heavy exertion. It's OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath. **People with asthma** should follow their asthma action plans and keep quick relief medicine handy. **If you have heart disease:** Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your heath care provider.
Unhealthy (151-200)	**Everyone**	**Sensitive groups:** *Avoid* prolonged or heavy exertion. Consider moving activities indoors or rescheduling. **Everyone else:** *Reduce* prolonged or heavy exertion. Take more breaks during outdoor activities.
Very Unhealthy (201-300)	**Everyone**	**Sensitive groups:** *Avoid all* physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. **Everyone else:** *Avoid* prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.
Hazardous (301-500)	**Everyone**	**Everyone:** *Avoid all* physical activity outdoors. **Sensitive groups**: Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.

Appendix 10. Cleaning Up Wildfire Ash

Ash from wildfires can travel a long distance and form a layer on everything outside. Burned leaves and debris can also be transported in the wind. It is important to clean up ash in a way that is safe to you and the environment. Ash can be irritating to the skin, nose and throat and can cause coughing and/or nose bleeds. Ash that gets into storm drains can flow into creeks and rivers and impact the aquatic life that lives in the surface waters. In addition to the steps provided in the Santa Barbara County Air Pollution Control District's image, the following is suggested for proper cleanup of wildfire ash:

- Wear gloves, long-sleeved shirts and long pants to avoid skin contact and a N-95 or P-100 respirator. Goggles are also recommended. Contact with wet ash may cause chemical burns or irritation on skin. Change your shoes and clothing prior to getting in your car or house to avoid tracking ash into your car, home, etc.
- Be aware that ash will be everywhere outside; on the house, shed, roof, fences, plants, ground, trees, etc. You will likely not be able to clean it all up. Be careful to not breath ash the next time you trim plants, etc.
- Never use a leaf blower to clean up ash because the ash will become air born and migrate to another part of your property, to your neighbors' property and/or into your breathing space.
- If ash is on your window screens, consider washing off the screens prior to opening the windows so that the ash does not blow into the house.
- If there is a large amount of ash on your property, consider hiring a professional damage and debris removal/restoration service to clean it up.
- Do not allow children, pets or other animals to be in the area when ash is being cleaned up due to the potential health risks.
- Clean ash off of pets and other animals if they have been in contaminated areas. Thoroughly clean their water and food bowls, troughs, etc.