

Sonoma County Emergency Evacuation Plans

Are We Ready for the Next Major Evacuation?

Sonoma County has endured four major wildfires and several severe floods in eight years. Each incident exposed the same weaknesses: narrow highways with inadequate capacity, sparse alternate routes, patchy communications capability, and limited shelter planning. The County still lacks detailed, scenario-based evacuation plans and has not met new state mandates that require them.

California's Emergency Services Act makes local governments responsible for disaster planning, evacuation planning, and emergency plan execution. Three recent statutes enhance the requirements: Assembly Bill AB 747 (2019) mandates evaluation of evacuation route capacity, safety, and viability; SB 99 (2019) requires counties to map every neighborhood with only one way in or out and propose remedies; and AB 1409 (2021) requires advance designation of evacuation shelters and refuge areas.

Sonoma County has not yet fully complied with these mandates. Updates to evacuation route definition, traffic capacity analysis and simulation, and shelter planning are not expected until 2030, far later than comparable jurisdictions. Other meaningful findings:

- Infrastructure is the biggest vulnerability. Many roads and bridges cannot carry simultaneous outbound traffic and inbound emergency vehicles; choke points repeat fire after fire.
- Planning is "ad hoc." Unlike the City of Santa Rosa, which pre-assigns traffic control resources and shelter sites, the County relies on on-the-fly decisions during an incident.
- Technology gaps hinder readiness: Sonoma County lacks modern evacuation modeling tools used by peer counties. Zone-specific evacuation planning isn't possible without better tools.
- Cell outages are common, especially during power failures, and alert systems SoCoAlert, WEA, and Nixle won't work in rural areas without cell service. Radio repeaters that would improve public communication during widespread emergencies haven't been completed. Community radio networks need stronger integration with the County's Emergency Operations Center.

The Sonoma County Civil Grand Jury makes the following suggestions to Sonoma County leadership: *accelerate compliance* with state mandates by completing evacuation route assessments and other safety plan updates *well before 2030*; *invest* in modern simulation and planning tools to inform real-time evacuation decisions; *upgrade key evacuation routes* to support contraflow strategies and emergency traffic signal control systems; *expand GMRS repeater coverage* and integrate neighborhood nets into the EOC to ensure alerts reach remote areas reliably; and *publish zone-specific plans* with route options, evacuation destinations, and communication protocols that residents can follow during a disaster.

Sonoma County has foundational emergency planning infrastructure and a motivated volunteer community, but the County could be better prepared for a fast-moving disaster. Without accelerated investment in planning, communications, and road improvements—and full compliance with California's legal standards—the risk of chaotic, life-threatening evacuations remains high.

METHODOLOGY

- Reviewed Sonoma County's existing emergency plans, hazard analyses, and organizational charts.
- Interviewed county emergency managers, police and fire chiefs, and public works officials about evacuation procedures and capabilities.
- Examined reports of past incidents affecting Sonoma County and nearby areas.
- Compared Sonoma County's plans and resources against state/federal emergency management guidelines (NIMS, FEMA best practices) and lessons learned from other communities.
- Consulted scholarly studies and after-action reviews on evacuation logistics, communication systems, and community preparedness.

GLOSSARY

- **Emergency Operations Plan (EOP):** A written plan that describes how local officials prepare for, respond to, and recover from emergencies.
- **Emergency Operations Center (EOC):** A central coordination hub activated during major incidents; it supports on-scene responders and manages multiagency efforts.
- **Incident Command System (ICS):** A standard framework for organizing on-scene response. It defines roles and a chain of command so police, fire, EMS, and other responders can work together smoothly.
- **National Incident Management System (NIMS):** A national framework that ensures all levels of government (local, state, federal) use common terminology and procedures during any incident.
- **Voluntary Organizations Active in Disaster (VOAD):** A coalition of nonprofits and faith-based groups (such as the Red Cross and CERT) that provide coordinated relief and recovery support alongside government agencies.

BACKGROUND

Tubbs, Kincade, LNU Lightning, and Glass—the wildfires that plagued Sonoma County during the past eight years—forced thousands of evacuations. When nature's fury is at your doorstep, getting away is the only safe option. Will you be able to?

Highway 12 was the only route away from the 2017 Tubbs Fire for many residents on the east side of the county. Two years after the Tubbs fire, the Kincade fire threatened Healdsburg and Windsor prompting evacuation of almost 190,000 people. A year later, the Glass Fire again threatened Sonoma, Rincon and Bennett Valleys. Highway 12, the primary evacuation route, once again proved inadequate to handle the surge in traffic. Many residents were stuck in traffic for hours as the fire approached. The Sonoma County Civil Grand Jury (Grand Jury) decided to explore this question: "How well are city and Sonoma County resources prepared for *future* emergency evacuations?"

Each of the county's four major wildfires has caused significant traffic jams, largely because many Sonoma County roads cannot simultaneously accommodate incoming emergency vehicles and outgoing evacuees. Sonoma County has also experienced an increase in the number and severity of "atmospheric rivers", which bring excessive rainfall, flooding, and debris flows to lowlands, creeks, and rivers. Some

motorists misjudge the depth of flooded roads and become stuck or submerged. Others have been caught by rapidly rising creeks. Many low-lying areas in the county are served by a single bridge or single-lane road, which presents significant evacuation challenges for both residents and emergency responders.¹

The county's geography means residents are spread out across mountains, valleys, and rural plains. Thousands of residents live in remote canyons or along single lane roads, where reaching an exit route during a natural disaster can take hours. There are only a few main evacuation routes which can become bottlenecks. The entire western half of Sonoma County was told to evacuate proactively during the 2019 Kincade Fire because emergency management leadership realized that wind direction and fire spread could lead to thousands of residents being trapped with few outbound routes.

Most of Sonoma County is lightly populated and mountainous. Cell phone and internet coverage are inconsistent and frequently unavailable outside the towns, so many residents will not receive emergency alerts transmitted via digital networks. Long travel distances, limited road access, and communication gaps in remote areas are well-known constraints that significantly hinder evacuation planning.

Sonoma County also has several major earthquake fault lines, which will eventually pose entirely different evacuation challenges, but local geography and recent experience indicate that fires and flooding are the most pressing threats. This report is principally concerned with the challenges of safely evacuating residents during wildfire and flood emergencies.

Legal Authority for Emergency Management and Local Responsibilities:

State Law Mandates for Disaster Management and Preparedness

California's persistent threat from wildfires and floods has prompted a robust framework of state laws governing disaster management and preparedness. These laws contain **state mandates for local authorities**, assigning cities and counties clear responsibilities for both **operational emergency response** and **advance planning** to mitigate disaster impacts.

The California Emergency Services Act (CESA), codified as California Gov. Code (§8550 et seq.)², is foundational and recent legislative updates to the CESA strengthen the role of local entities in wildfire and flood preparedness. Key areas contained in the CESA include the legal structure for emergency response coordination, requirements for evacuation route planning and mapping, and the integration of modern technologies (GIS mapping, alert systems, evacuation software, etc.) in disaster preparation.

CESA defines California's emergency management framework, establishing the hierarchy of disaster response and the duties of state and local governments. Under this framework, the Governor's Office of Emergency Services (Cal OES) coordinates statewide efforts, but local governments are on the front lines of both planning and response. State law makes the State Emergency Plan operative within every city and county; it requires local governing bodies to implement that plan's provisions. In practice, this means each county and city must maintain an emergency management organization and be ready to carry out the State Emergency Plan in disasters.

The CESA explicitly empowers "*the chief executives and governing bodies of political subdivisions*" (i.e. city leadership and county supervisors) with emergency authorities. Local ordinances designate officials (such as county sheriffs, city managers, fire chiefs, etc.) who are vested with powers to

¹ More lives would have been lost except for the bravery of first responders and neighbors in the chaos created by these rapidly moving fires, and water fatalities would be higher without the efforts of highly trained rescue teams, including the Santa Rosa Fire Department Swift Water Rescue Team, the Sonoma County Sheriff's Office Dive Team, and the Sonoma County Search and Rescue Team.

²https://leginfo.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=GOV&division=1.&title=2.&part=&chapter=7.&article=

proclaim local emergencies, deploy resources, and take extraordinary measures to protect life and property when disasters strike. By law, counties and cities may create *local disaster councils* via ordinance, which “shall develop plans for meeting any condition constituting a local [or state] emergency”.

Under the state’s *Standardized Emergency Management System (SEMS)*, which is required by Government Code §8607(a)³, local governments must use standardized incident command and coordination structures during multi-agency emergencies.

Role of Local Agencies in Disaster Response

Local authorities have primary responsibility for on-the-ground disaster response in their communities. Each city and county has an emergency organization led by a director of emergency services who is statutorily empowered to implement emergency plans and direct resources. Three cities in Sonoma County (i.e., Santa Rosa, Healdsburg, and Petaluma) have their own Emergency Managers who act as “conduits” to the County’s Department of Emergency Management. While most larger cities in the county are responsible for policing and traffic control during an emergency, advance planning for roads critical to mass evacuations rests with the County.

The process whereby local officials declare a “local emergency to activate extraordinary powers and mutual aid is defined in Gov. Code §8630; when a local emergency is declared, the governing body and its agencies have broad powers to control movement (including ordering evacuations), commandeer private property if needed for public use, and set curfew areas. Since Sonoma County is principally responsible for organizing and coordinating emergency evacuations, this Civil Grand Jury report is focused on evacuation planning and preparedness by County officials.

It’s worth noting that *all public employees in California are considered Disaster Service Workers by law* (Gov. Code §§3100–3102)⁴ and can be called upon to perform emergency duties. This underscores the expectation that local agencies (schools, public works, etc.) will contribute to disaster response *under local leadership*. In summary, the legal framework imposes a dual obligation on local authorities: they must plan and prepare for foreseeable emergencies (through emergency plans, training, resource arrangements) and also lead the initial response when disasters occur, coordinating closely with state agencies and neighboring jurisdictions.

Role of Local Agencies in Disaster Planning and Preparedness: General Plan Safety Element

Beyond real-time response, California statutes place heavy emphasis on **advance planning to reduce disaster risks**. This is primarily achieved through land use planning laws and hazard mitigation requirements that compel local governments to prepare for wildfires and floods *before* they happen. The centerpiece is the General Plan Safety Element that every city and county must adopt as part of its general plan (the local long-term blueprint for development). **State law requires this safety element to comprehensively address the community’s disaster risks and strategies to mitigate them.**

Under Government Code §65302(g)⁵, the safety element must establish a set of goals, policies, and objectives, as well as implementation measures designed to carry out such goals, policies and objectives, to protect the community from “*unreasonable risks*” of various hazards, specifically including flooding and wildland and urban fires. The statute mandates inclusion of up-to-date **hazard mapping** and policies for disaster prevention and response. For example, the law specifies that the safety element

³ https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV§ionNum=8607

⁴ https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=3100.&lawCode=GOV

⁵ https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV§ionNum=65302.

“shall include mapping of known seismic and other geologic hazards” and must “address evacuation routes ... peak load water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.”

California law ensures that local disaster planning is an ongoing process by requiring regular evacuation plan updates and by requiring that planning take state and federal data into account. Cities and counties must periodically revisit their safety elements to reflect new knowledge of wildfire behavior, floodplain changes, climate projections, and to incorporate lessons learned from recent disasters. Fundamentally, the law charges local officials with anticipating the worst—identifying where fires or floods are likely to occur, how evacuation and response will be handled, and what steps can lessen the danger—and embedding those considerations into their community’s long-term development policies.

Over the past 15 years, the Legislature has enacted further refinements to these planning requirements for both wildfire and flood hazards:

- **Wildfire Planning (SB 1241 and successors⁶):** In 2012, Senate Bill 1241 added new obligations for jurisdictions with State Responsibility Area (SRA) wildfire zones or locally designated Very High Fire Hazard Severity Zones (VHFHSZ). Cities and counties must update the safety element to address wildfire risks in these areas.
- **Flood Hazard Planning (AB 162 and related laws⁷):** After Hurricane Katrina (2005) and California’s own levee concerns, the Legislature passed AB 162 (2007) and a suite of flood safety bills (SB 5, AB 70, etc.). These require local plans to address flood hazards with greater rigor.

Local Hazard Mitigation Plans

In parallel with state planning laws, federal law encourages each community to adopt a Local Hazard Mitigation Plan (LHMP) assessing risks and identifying projects to reduce them. California has strongly incentivized integrating the LHMP into the general plan. While not a direct mandate, this policy nudges local governments to proactively plan mitigation projects for wildfires, floods, earthquakes, etc., and embed those plans in general plan policy. Sonoma County’s local Hazard Mitigation Plan can be found online here⁸.

Evacuation Route Planning Statutes and Standards

One critical aspect of disaster preparation is planning how to get people out of harm’s way when a wildfire or flood emergency strikes. Recent California legislation has zeroed in on evacuation route planning, after several disasters revealed deadly shortcomings. The 2017 wine country fires and 2018 Camp Fire in Paradise, CA showed that communities with insufficient evacuation route planning led to chaotic evacuations. State lawmakers responded with new requirements to ensure local jurisdictions map out and evaluate evacuation routes in advance.

Even before these new laws, Government Code §65302² mandated that every safety element must address “*evacuation routes related to identified fire and geologic hazards*”. Considering evacuation

⁶ https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB1241

⁷ http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_0151-0200/ab_162_bill_20071010_chaptered.pdf

⁸ <https://permitsonoma.org/hazard-mitigation>

⁹ <https://legiscan.com/CA/text/AB747/id/2056749#:~:text=certain%20mandatory%20elements%2C%20including%20a,identified%20fire%20and%20geologic%20hazards>

needs in wildfire (and earthquake) scenarios has long been a part of general plan safety elements. Subsequent statutes clarified the legal mandates as follows:

AB 747 (2019)–Evacuation Route Capacity, Safety, and Viability Analysis

Assembly Bill 747 ¹⁰(Levine, 2019) complements SB 99 by adding Government Code §65302.15, which focuses on qualitative analysis of evacuation routes. Under AB 747, the safety element *must be reviewed and updated “as necessary to identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios.”* In effect, this law requires a comprehensive evacuation analysis in local plans: *not just mapping the routes but evaluating whether those roads can actually handle an evacuation and identifying potential problems.*

Key facets of the AB 747 mandate: local governments should consider different emergency scenarios—for instance, a fast-moving wildfire on a windy day, or a major flood that cuts off certain roads—and *for each scenario assess if the evacuation routes are viable.* They must look at **capacity** (can the roads carry the volume of traffic needed to evacuate everyone? Might there be choke points?), **safety** (are the routes themselves safe from the hazard, e.g. will a wildfire likely overrun that road? are bridges seismically stable in a flood?), and **viability** (will the route remain usable, or could it be blocked by the hazard?).

Importantly, AB 747 allows that if a city or county already has done similar analysis in another document (like an Emergency Operations Plan or an LHMP), it can incorporate that by reference. Some communities in California ¹¹ have since conducted detailed evacuation modeling studies to comply with AB 747, using *traffic simulation* and GIS mapping to test different disaster scenarios.

SB 99 (2019)–Identifying At-Risk Developments with Single Access

Senate Bill 99 ¹²(Nielsen, 2019) was among the first bills to emerge from post-disaster scrutiny. Effective in 2020, SB 99 requires each city and county to update the safety element to identify any residential developments in hazard areas that lack *at least two evacuation routes.* In plain terms, local planners must make a map or inventory of neighborhoods or communities that have only one road in and out in fire hazard zones or other high-risk areas. These could be mountain communities, canyon neighborhoods, or subdivisions at the end of long cul-de-sacs.

The law’s intent is to highlight these vulnerable areas so that local governments can then seek mitigation—for example, planning a secondary egress road, widening an existing road, or, at minimum, formulating special evacuation procedures for those communities. *SB 99 requires jurisdictions to confront evacuation bottlenecks during the planning stage,* rather than during the emergency itself. Notably, SB 99 came with an understanding that many existing communities have legacy road networks that are hard to change—but **identifying them is a mandatory first step.**

¹⁰<https://legiscan.com/CA/text/AB747/id/2056749#:~:text=This%20bill%2C%20upon%20the%20next,that%20information%20in%20the%20safety>

¹¹<https://www.watsonville.gov/DocumentCenter/View/15452/Appendix-D-Emergency-Evacuation-Route-Analysis#:~:text=in%20accordance%20with%20AB%20747,D%20to%20the%20General%20Plan>

¹²<https://legiscan.com/CA/text/SB99/id/2051072>

AB 1409 (2021)–Identifying Evacuation Locations

Building on the above, Assembly Bill 1409¹³(Levine, 2021) added a further refinement: it requires that local governments must also identify **evacuation locations**. In other words, not only routes, but the destinations or sites where evacuees can go (evacuation centers, shelters, temporary refuge areas) should be considered in the plan. Having multiple evacuation centers or refuge areas is especially crucial for wildfire evacuations, where evacuees might need to be directed to a safe zone if they cannot all leave the area quickly. Identifying these locations in advance—fairgrounds, schools, community centers, large parking lots, etc.—and evaluating their capacity is now part of the planning mandate. AB 1409’s addition ensures that local plans address the *full spectrum* of evacuation: from leaving the home (routes) to reaching safety (locations). As with the other bills, this imposes new duties on local planning officials but is considered a state-mandated local program in the interest of public safety.

In sum, California law requires every locality to identify its evacuation vulnerabilities and develop a plan to address them. This exemplifies the shift toward *proactive disaster planning*: hard lessons from recent wildfires have been translated into statutory duties for cities and counties to map, evaluate, and improve evacuation logistics for the safety of their residents.

Through AB 747, SB 99, and AB 1409 (all in the last 5 years), California has significantly tightened the expectations on local jurisdictions for evacuation preparedness. These laws were directly responsive to wildfire tragedies but apply broadly to any hazard that might require evacuation (floods, tsunamis on the coast, even industrial accidents). By writing these requirements into general plan law, *the state ensures that evacuation planning isn’t just an operational afterthought but a core element of community development and public safety planning*.

Statutes also require local governments to maintain up-to-date **evacuation route maps** in their general plans and show that they have thought through contingencies. Many counties have adopted formal “*Evacuation Route Element*” documents or incorporated extensive evacuation chapters in their safety elements to comply. This also dovetails with emergency response planning: an evacuation plan on paper is implemented through **Evacuation Orders and Warnings** during an incident, so having pre-designated routes and centers makes emergency alerts more effective.

Sonoma County Emergency Management

Emergency management in Sonoma County is led by the County Department of Emergency Management (DEM). The County maintains an **Emergency Operations Plan**¹⁴ (EOP) that follows **NIMS/ICS** principles. This EOP enumerates roles to local agencies—the Sheriff’s Office, fire districts, EMS, public health, public works, etc.—for disasters. An **Emergency Operations Center**¹⁵ (EOC) is activated during major events. The EOC serves as the central coordination hub: while on-scene responders (police, firefighters) use ICS principles to fight the incident, the EOC collects information, requests resources, and helps manage the overall response. Regular first responders (firefighters,

¹³<https://legiscan.com/CA/text/AB1409/id/2435722#:~:text=a%20local%20hazard%20mitigation%20plan%2C,a%20range%20of%20emergency%20scenarios>

¹⁴<https://sonomacounty.ca.gov/Main%20County%20Site/Administrative%20Support%20%26%20Fiscal%20Services/Emergency%20Management/Documents/Plans/Sonoma-County-Emergency-Operations-Plan-English.pdf>

¹⁵ <https://sonomacounty.ca.gov/administrative-support-and-fiscal-services/emergency-management/organization/emergency-operations-center>

paramedics, police) use the standardized ICS structure for on-scene work and the EOC supports them with supplies, information, and logistics.

Sonoma County emergency management plans also involve **external partners**. Local chapters of the American Red Cross and other VOAD organizations prepare shelters and provide food, water and recovery assistance when needed. These groups have agreements to open emergency shelters along evacuation routes and to staff them with trained volunteers. Media coordination is in place: public warnings are issued through multiple channels. The County has an automated text-message alert system for cell phones. It also uses NOAA Weather Radio broadcasts and outdoor sirens in some areas. Social media (X (the entity formerly known as Twitter), Facebook) and a County emergency webpage provide updates. *Multiple alert channels* are important to reach different audiences.

DEM has some modern tools to support planning and response. Sonoma County has a capable GIS mapping department that has published an online evacuation zone map and *could* show the public evacuation routes and safe shelter locations once they are defined. Mobile apps help field units share real-time info with the EOC. Volunteer amateur radio teams stand by to assist if other communications fail. The County OES conducts training exercises to practice evacuations. However, constrained budgets and staffing mean large-scale drills are not frequent.

The Sonoma County Emergency Operations Plan (EOP) is the principal public-facing document that describes local preparedness for such emergencies; here's what the most recent version of the EOP says about its scope and substance:

"The EOP is intended to facilitate coordination between agencies and jurisdictions within Sonoma County while ensuring the protection of life, property, and the environment during disasters. In accordance with California's Standardized Emergency Management System (SEMS), this Plan provides the framework for a coordinated effort between partners and provides stability and coordination during a disaster.

This EOP outlines the specific actions that the OA will carry out when an emergency exceeds or has the potential to exceed the capacity of a single agency or jurisdiction to respond. It sets forth the organizational framework and addresses steps needed to safeguard the whole community—especially those who are most at-risk, experience the most vulnerabilities, and/or have been historically underserved."

In June of 2024, Permit Sonoma (the County agency charged with maintaining the County General Plan) conducted a Board of Supervisor workshop¹⁶ to initiate the update of the Public Safety component of Sonoma County's General Plan, including this reference to construction of the evacuation map mandated by state law. Here is the text of the proposed mapping process as described in the agenda materials:

"Evacuation-related assessments required by State law (Gov. Code §§ 65302(g)(1) and 65302.15) are still under development and expected to be available later this summer. These assessments will be high-level, data-oriented, and limited in scope. The assessments will be appended to the Safety Element as reference documents and may be used as informational tools for decision-making on evacuation related policy and program development at the Board's discretion.

¹⁶<https://sonoma-county.legistar.com/LegislationDetail.aspx?ID=6784258&GUID=EAF66AF5-6DAA-4017-BCAD-DB6654091313&Options&Search>

The assessments will provide limited information about areas of the County where evacuation conditions may be less efficient due to roadway conditions, such as the number of egress routes or roadway carrying capacity. *The results of the assessments should be viewed as sources of information and not a complete picture of evacuation considerations within the county. The assessments will not provide a comprehensive status of evacuation accessibility for individual parcels in the unincorporated area nor specify the time it will take to evacuate any given area in any given emergency scenario.*"

In April of 2025, Permit Sonoma (in conjunction with DEM and Sonoma Public Infrastructure) issued an update to the evacuations annex of the Emergency Operations Plan.¹⁷ This General Plan update¹⁸ included many points of interest regarding evacuations. Goal SE2 of the update is titled "Support safe and efficient emergency response and evacuation through accessible and effective alerts, improved safety or evacuation routes, and emergency response planning."

Item SE-2J is also particularly significant and relevant to this report:

"Conduct a study to identify vulnerable areas for traffic signal improvements and contingency plans for loss of power and communications grids. Investigate adaptive signal control (ASC) systems that can adjust traffic signal timing to account for high volumes that occur during hazard events."

Sonoma County Department of Emergency Management is the responsible party; and *this update isn't currently expected to be completed until 2030.*

Further, according to Goal SE2a of the update, DEM does not intend to fulfill the evacuation route mapping requirements established in AB747 until 2030.

Public Alert Systems for Community Awareness and Evacuation Coordination

Rapidly notifying the public of impending danger is crucial for both wildfires and floods. After the 2017 firestorms, California passed **SB 833 (2018)**¹⁹ to push all counties toward modern, coordinated alert systems. Today, every county has an emergency mass notification system capable of *pushing emergency messages to cell phones* (via SMS text and Wireless Emergency Alerts), as well as to landline phones, email, and broadcast media.

The state OES has issued standardized **Alert & Warning Guidelines** to ensure consistent best practices—for instance, how quickly to issue alerts, using templates with clear language, and reaching vulnerable populations (including in multiple languages). SB 833 mandates that counties may not rely solely on opt-in systems and must also have the capability for *opt-out* alerts that otherwise reach everyone in an area. This was a direct response to Sonoma County's experience²⁰ where many residents never got warnings because the system was opt-in. Now, wireless emergency alerts can be geo-targeted. For example, an evacuation order for a wildfire will trigger a loud notification on every compatible cell phone in the polygon of the evacuation zone, even if the user never signed up.

The County Sheriff is responsible for determining where and when evacuations will occur during declared emergencies. The county map has been divided into approximately 200 zones. During emergencies, the Sheriff announces which zone(s) are required to evacuate, with warnings to residents in

¹⁷<https://sonomacounty.maps.arcgis.com/apps/webappviewer/index.html?id=69a0e54e9e2b48c086d122027b21c961>

¹⁸<https://permitsonoma.org/Microsites/Permit%20Sonoma/Documents/Long%20Range%20Plans/General%20Plan/Environmental%20Justice/Sonoma-County-Safety-Element-Public-Review-Draft-April-2025.pdf>

¹⁹<https://legiscan.com/CA/text/SB833/id/1820764>

²⁰<https://www.govtech.com/public-safety/california-emergency-alert-standards-move-forward-in-legislature.html#:~:text=as%20radio%20and%20television>

nearby zones. The goal is to mitigate potential traffic congestion by prioritizing and phasing the addition of vehicles traveling on roads known to have limited capacity.

Communication tools are critical to the success of this approach to evacuation management: each household needs to know its designated evacuation zone and have access to at least one communication technology to receive status updates from the Sheriff.

The County uses a broad range of tools to (hopefully) ensure universal access to evacuation messages:

- **SocoAlert** is the County's preferred method for broadcasting zone status and other emergency information since it can push messages and alerts to cellphones and other devices within specific zones rather than broadcasting unnecessarily to a larger region. SocoAlert uses a system named CodeRed, which is owned and operated by Onsolve, which in turn is operated by a company named Crisis24 which is a subsidiary of a conglomerate named Gardaworld.

For directed messaging to work via *SocoAlerts* one needs to provide information that includes their home address, phone numbers and emails after which one must agree to terms and conditions set by the CodeRed End User License Agreement.²¹

- **Nixle** is owned and operated by Everbridge and informs residents about public safety messages, community events, and advisories. Like SocoAlert, Nixle broadcasts messages as SMS texts. *Nixle broadcasts to a zip code area so it is less specific to evacuation zones than SocoAlert.*
- **NOAA Weather Radio (NWR)** is a nationwide network of radio stations providing continuous broadcasts of weather information directly from the nearest National Weather Service office. NWR broadcasts official weather warnings, watches, forecasts, and other hazard information 24 hours a day, seven days a week. It also serves as an "all-hazards" radio network, making it an essential source for comprehensive emergency information, including natural and environmental disasters, public safety alerts, and more. One must purchase a NOAA radio or a scanner which typically cost around \$15-\$30 to receive NOAA radio broadcasts.
- **Wireless Emergency Alerts (WEA)** are emergency messages sent by authorized government alerting authorities through the local mobile carrier. They provide timely and critical information about a variety of imminent threats and emergencies, such as severe weather, public safety, and AMBER alerts. They typically appear as a text-like message on your mobile device, accompanied by a distinctive sound and vibration. One must have a cell phone to receive WEA messages.
- **Emergency Alert System (EAS)** is a national public warning system in the United States, designed to enable authorities to rapidly disseminate emergency information via multiple platforms including radio, television, and cable systems. Its primary purpose is to inform the public of urgent situations ranging from severe weather warnings to national security threats.
- **Hi-Lo Sirens:** Patrol cars and public safety vehicles in the sheriff's fleet are equipped with a specialized "Hi-Lo" siren which communicates an imminent emergency condition to all who hear it. Hi-Lo sirens are the last option to get the message out when all else fails, and do not require a device on the part of the resident. Per the Sonoma County Sheriff's office website, if you hear the Hi-Lo siren "you are in immediate danger and must evacuate immediately".

²¹ The Grand Jury reviewed the required terms and conditions and discovered that the user has to agree to allow the owners of the *CodeRed* system to use this information and share it as needed to provide the notification service. These conditions may discourage some households from choosing to register for potentially life-saving emergency alerts.

Other forms of emergency communications include:

- **AM radios** are the most ubiquitous method of receiving broadcast information. During the Tubbs fire AM radio became the only form of official information available to many of those directly impacted by the fire. KSRO, a Sonoma County radio station, played a crucial role in providing real-time emergency updates, evacuation notices, and critical information to residents. As the fire spread, KSRO became a lifeline for the community, offering continuous coverage, helping thousands stay informed and safe during the crisis.
- **WatchDuty** is a mobile application developed locally by Sonoma County resident John Mills. The WatchDuty app keeps users informed about real-time fire incidents, integrating data from authorized sources such as fire departments, emergency services, and citizen reporters to provide timely alerts and updates. Users receive notifications about fire locations, containment efforts, road closures, and evacuation orders. The platform is a vital enhancement to community preparedness, a tool for both residents living in wildfire-prone regions and those interested in staying informed about fire-related emergencies. WatchDuty can be used for free and also has a paid subscription service. One must have a smartphone to use it, and that phone needs internet access to get WatchDuty updates.

All of the above forms of communications (except Hi-Lo sirens) require access to a cell phone and/or computer with an internet connection. But what does a household do when power is out, cell towers are down, and the public has lost access to the internet? Local grass roots organizations have created radio communications networks in the northern areas of the County and residents in the eastern and western parts of Sonoma County are actively trying to expand these organized communications networks to the entire county.

Grassroots Organizations - Key to County Emergency Prep and Response

- **CERT (Community Emergency Response Team)** is a volunteer program that trains civilians in disaster preparedness, emergency response, and basic lifesaving skills. Sponsored by FEMA, CERT trains volunteers to assist their communities during natural disasters, fires, medical emergencies, and other crises when professional responders are overwhelmed. Members learn fire suppression, first aid, search and rescue, and disaster psychology, enabling them to provide crucial support before emergency services arrive.

There are two active CERT training hubs in Sonoma County, one organized by the Sonoma County Department of Emergency Management and the other instituted by Sonoma County fire and emergency services personnel. The Northern Sonoma County CERT organization has also been collaborating with the North Bay Communications Collective in training volunteers to use low-cost hand-held radio devices.

- **The North Bay Communications Collective (NBCC)** is a volunteer organization dedicated to providing reliable, community-based emergency communication throughout the North Bay region. Using ham radio, GMRS radios and other communication technologies, the Collective supports disaster response efforts by maintaining alternative communication networks when traditional systems fail, such as during wildfires or power outages. Their mission is to enhance disaster resilience by training volunteers and expanding emergency communication infrastructure.
- **General Mobile Radio Service (GMRS)** radio networks have been rapidly expanding in North and West Sonoma County. When power failures take down internet and cell phone service, this

communication network can still be available because of county-operated GMRS repeater towers with onsite backup power.

The North Bay Communication Coalition is a key contributor to the distribution of GMRS radios to neighborhood groups who operate together as a neighborhood "net". NBCC provides GMRS radio training and provides users scripts based on HAM radio operator protocols compliant with FCC regulations.

- **The Auxiliary Communications Service (ACS)** in Sonoma County is a volunteer-based emergency communications program that supports county emergency operations. ACS provides backup and supplemental radio communications for government agencies during disasters, ensuring reliable communication when conventional systems fail. The service plays a critical role in disaster preparedness and response by maintaining communication links between emergency responders, shelters, and other essential services.

The Civil Grand Jury has three observations related to county evacuation communications using GMRS and ACS:

1. ACS is not yet linked to all Neighborhood Nets and integrated in a formal and consistent manner into EOC operations.
2. GMRS radio network participants are not required or taught to use formal communication protocols (like the ones used by Ham radio operators). People can talk over each other or use the channel inappropriately without a structured approach to using these devices, potentially limiting channel usefulness.
3. Trained users of GMRS within a neighborhood net *could* provide traffic status through ACS to the EOC so that evacuation route information can be disseminated to the public. In all emergency evacuations, residents may find that the 911 system is overloaded. Trained GMRS radio users in a neighborhood net could also provide real time vital information regarding evacuation routes and rapidly changing fire/flood conditions, and direct emergency responders to residents in need of special assistance.

Technology to Support Wildfire and Flood Preparation & Coordination

California's laws don't prescribe specific disaster preparedness technologies, but in practice state and local authorities have widely adopted advanced tools to meet legal mandates and improve emergency outcomes. Here are some key categories of technology that support wildfire and flood preparation and response coordination:

- **Geographic Information Systems (GIS) and Hazard Mapping:** GIS is foundational for hazard planning and situational awareness. Local agencies use GIS to map fire hazard zones, floodplains, evacuation routes, and critical infrastructure. During emergencies, GIS specialists from various agencies create *real-time interactive maps* showing wildfire perimeters, evacuation zones, and other critical data. CAL FIRE and Sonoma County Department of Emergency Management use Esri's ArcGIS platform to maintain online "dashboard" maps²² of active incidents and evacuation orders, accessible to both responders and the public. In flood preparedness, GIS is used to model inundation areas and plan evacuation zones accordingly.

²² <https://socoemergency-sonomacounty.hub.arcgis.com/apps/69a0e54e9e2b48c086d122027b21c961>

Many counties have produced story maps that combine flood scenarios with evacuation route overlays to educate residents. Sonoma County's flood stage map can be found here²³.

Overall, GIS tools fulfill a critical requirement of state law: they provide the evidence-based foundation that underpins evacuation plans. Sonoma County's DEM maintains interactively-updated maps²⁴ for winter weather, road closures, flood stages, and a "Five Year Burn Scar" map, along with a map showing all of the County evacuation zones.

- **Evacuation Management Platforms:** Many California counties have turned to specialized evacuation management software to implement evacuation route planning mandates. One example is Zonehaven (now part of Genasys Protect), a platform that allows agencies to define precise evacuation zones *and run simulations of evacuation traffic*²⁵. Zonehaven provides a common operating picture for multi-agency coordination of evacuations. It offers access to *"real-time weather, traffic and fire information, and models traffic and fire spread scenarios to plan and execute evacuations successfully"*.

Using such tools, emergency managers can predict how quickly a wildfire might spread toward a community and how traffic would flow if everyone evacuated at once, enabling managers to designate phased evacuations or choose which areas to evacuate versus shelter in place. For example, Marin County implemented Zonehaven and highlighted that the tool can model potential traffic congestion²⁶ during a wildfire evacuation and identify problem areas. When a wildfire ignites, the County can activate pre-drawn zones on Zonehaven's map, and the public can see their zone status on a live map. Other tech solutions in this category include One Concern, which has offered AI-driven evacuation analytics (piloted by some California cities), and Google's Waze Crisis Response partnership that shares road closure and traffic data with emergency ops centers.

- **Monitoring Networks and Early Warning Sensors:** Cutting-edge monitoring technology is improving early detection of wildfires and floods. **ALERTCalifornia** is a flagship effort: this advanced network of more than 1,000 cameras helps emergency managers monitor wildfires, floods, and landslides in real time. The cameras providing 360-degree live views that firefighters and emergency personnel can control remotely. Camera feeds have also been used to watch river levels and burn scar areas during heavy storms.
- **Automated Weather Stations and Remote Sensors:** Wind, humidity, and fuel moisture sensors are used in many areas, feeding data to prediction models like **FIRIS** (Fire Integrated Real-Time Intelligence System) and **WIFIRE**. FIRIS is a state-funded program that pairs infrared-equipped aircraft with a data platform to map fires and run spread projections within minutes of ignition. WIFIRE uses supercomputers to model wildfire growth and was referenced in recent fires for rapid scenario planning. On the flood side, California has thousands of stream gauges and rain gauges that send real-time data to flood control agencies. These trigger alerts when river levels reach thresholds, enabling towns downstream to be warned or evacuated early.

²³ <https://sonomacounty.maps.arcgis.com/apps/webappviewer/index.html?id=b78edb375de6457f97869703bd368f35>

²⁴ <https://socoemergency.org/emergency/maps/>

²⁵ <https://genasys.com/press-releases/genasys-inc-announces-zonehaven-launch-in-alameda-county-ca/#:~:text=%E2%80%9COur%20Zonehaven%20SaaS%20solutions%20provide,%E2%80%9D>

²⁶ <https://www.marincounty.gov/news-releases/new-evacuation-mapping-tool-unveiled-marin-county#:~:text=%E2%80%9CThe%20Zonehaven%20mapping%20tool%20allows,model%20traffic%20and%20fire>

- **Data and Communication Platforms:** In emergency operations centers, technology like WebEOC (incident management software) is used to track resources and missions during a disaster. California has also developed SCOUT, a geospatial viewer that integrates data sources (fire perimeters, weather, traffic, shelter status, etc.) on one map for situational awareness.

DISCUSSION

The Civil Grand Jury identified several practical concerns regarding Sonoma County's evacuation capability and opportunities for improvement of county-wide evacuation planning and implementation.

Evacuation Planning Constraints & Potential Mitigations

Do you know where the next wildfire will be?

No, of course not; and that's why local emergency planners say they haven't developed detailed, zone-specific residential evacuation plans for wildfire or flood emergencies. Each of the major fires in Sonoma County has impacted different neighborhoods, and the people responsible for preparation in advance of the next emergency are quick to note that "maximum flexibility" in evacuation management is an absolute requirement.

But... there are some important things we know *will* impact the outcome of the next emergency:

- The roads we have today will be the roads available during the next evacuation until remedial action is taken.
- Many Sonoma County roads aren't wide enough to support simultaneous resident evacuation and emergency vehicle ingress.
- Traffic jams happen at the same points over and over: the intersection of Petaluma Hill Road and Adobe Road, Route 12 at Farmer's Lane, Westside Road at the Healdsburg circle, the entire Sebastopol downtown, and numerous other locations throughout the County. One common feature: all of these pinch points are along critical evacuation routes.
- The areas that flood next are likely to be areas that have flooded previously.
- Fires accelerate through canyons based on prevailing wind patterns, *and these wind patterns are well known to weather analysts.*
- Every residence in the County is already mapped in the County GIS system, and though the residential census at any moment in time is fluid, *it could be known in real time* if emergency planners had tools to query public status as the emergency unfolds.
- There are only a handful of places that are sizeable enough for, and prepared to be, evacuation destinations.

Sonoma County emergency planning agencies *should* recognize the benefit of advance planning: after all, this County probably has more experience with wildfire and flooding disasters than any other county in California. During Civil Grand Jury interviews, local officials repeatedly said, "We can't make an evacuation plan in advance because we don't know where the next emergency is going to be." However, while emergency planners cannot predict the exact location of the next evacuation, they can identify in advance the specific obstacles likely to arise within each evacuation zone.

State law says that emergency operations plans must include detailed zone evacuation maps that reflect specific evacuation routes and shelter destinations for each likely emergency. State law says, and our research concludes, that advance preparation is not only possible but preferred. The City of Santa Rosa

has actually already done this: its Emergency Operations Plan includes specific traffic management plans including remote traffic light controls, assignment of on-site traffic management personnel, and specific shelter destinations with permanent designation signage. In contrast, Sonoma County's EOP is essentially ad hoc: the plan and practice (according to the entities in charge of emergency management) is to figure it out on the fly, depending on what the emergency is and how it seems likely to progress.

There are only a handful of options for getting out of Sonoma Valley between Middle Rincon Road and the City of Sonoma. Significant portions of State Route 12, the main highway, are single lanes in each direction, and administration of this highway vests with the State of California. The canyons crossing Highway 12 principally run east and west, so the most dangerous fire storms in the eastern part of the County run perpendicular to this main evacuation route—leaving some room for safe zones between blazes. There are places along Highway 12 in the Sonoma Valley where temporary evacuation points *could* be used to mitigate the risk of an overcrowded road but, to date, none have been identified.

The western half of the County is not so fortunate: the main evacuation routes (West Side Road, Occidental Road, Highway 12 and Highway 116) all run roughly parallel to the predominant wind directions during fire season, and there are few places in the most dangerous areas where temporary evacuation points or traffic management buffers could be established.

Lessons from Recent Incidents

After-action reviews provide insight. The 2019 Kincadee fire prompted one of the largest mass evacuations in the history of California. One crucial lesson: *widespread power outages of the sort initiated by PG&E during this fire mean crucial communications infrastructure may not work*—so advance preparation of evacuation routes and alternate communications plans are an absolute necessity.

The 2020 Glass fire, which burned across both Napa and Sonoma counties, resulted in the loss of almost 1,500 structures. The Glass fire's rapid progression underscored the necessity of defensible space around properties and the use of fire-resistant building materials.

Sonoma County has faced significant flooding in each of the past three heavy rainfall seasons. These events have highlighted the importance of comprehensive flood risk management, including the development of detailed floodplain maps, investment in infrastructure improvements, and community education on evacuation procedures. The County has worked to align its flood response strategies with lessons learned from wildfire evacuations, emphasizing the need for clear communication and accessible evacuation routes.

Evacuations during the 2024 flooding near Lake Sonoma were substantially impacted by cell tower outages and many evacuees had no updated route guidance. This points to the need for alternative notification (such as emergency radio broadcasts or amateur radio volunteers to relay new info) *and advance distribution of evacuation route maps*.

Communication Channels and Infrastructure Limitations

Sonoma County uses a variety of alert systems (NOAA radio, WEA cell alerts, social media, local news, and sirens) and has greatly improved its communications capabilities since 2017. However, a persistent problem is that **some rural residents may be out of reach of certain channels**. Rural and forest area residents won't get alerts if the signal is weak. To compensate, Sonoma County uses outdoor sirens and roadway message signs as backups but these technologies have limited reach and effectiveness.

Messages sent via SocoAlert and Nixle use SMS texting which operates through cellular services and by internet connection via wifi. Both forms of messaging are limited to 160 characters. The Civil Grand Jury has found that the emergency messages can include additional access to more detailed information

by adding a URL at the end of the message. However, this assumes that the user will take the time to look, and it also assumes that an internet connection is available to the device the user is operating.

Radios are the only communication technology that has a reasonable chance of working for many people in the rural parts of the County when power lines are down, or internet connections aren't available. Going forward, Sonoma County could do more to support neighborhood safety networks: for example, appointing volunteer block captains or enhancing community organizations' capabilities to spread warnings door-to-door and by radio. In past evacuations, neighbors often warned each other, which shows the value of grassroots communication. Having more people connected to emergency messaging networks will improve the odds that messages get through even if cell phones or internet fail.

Inter-Agency Coordination is a Challenge

In theory, Sonoma County uses the Incident Command System, but resource limits can hamper response. The County's fire districts and EMS have far fewer personnel and trucks than a big-city department. In a fast-moving disaster, small volunteer crews might be stretched thin. The Civil Grand Jury found that **clarifying roles ahead of time** is important. The Sheriff's Office will take command of issuing evacuation orders during a large wildfire, but the Emergency Operations Center will remain in control of communications management among all of the various emergency responders.

Infrastructure Vulnerabilities

Sonoma County's main evacuation routes have been, and probably will continue to be, bottlenecks for future evacuations. Highway 12 and Highway 116 each have major intersections known to gridlock during heavy traffic. Even Highway 101 has been seen to shut down due to evacuation traffic exacerbated by wildfire adjacent to the highway. If flooding or landslides close a highway, evacuees could face life-threatening delays. Sonoma County plans note alternate routes, but these often involve longer, winding backroads. One strategy is **contraflow** (reversing lanes to double outbound flow) on key highways, but that takes pre-planning and traffic control. It also helps to have at least 3 lanes for major evacuation routes: that allows for outbound traffic to have two egress lanes, leaving one ingress lane for emergency responders.

Modeling Future Evacuations: Technology Exists to Improve Wildfire and Flood Preparation

Disaster preparedness agencies elsewhere in the state have adopted advanced tools to improve emergency outcomes. More comprehensive GIS mapping of hazards is supported by advanced simulation technology to enhance disaster preparation. The state often provides funding or frameworks for these technologies, but local agencies choose and operate the specific tools. The technologies are the means to an end: compliance with statutory requirements (like advance evacuation route planning) and the ultimate goal of **saving lives and property** when wildfires rage or floods rise.

Unfortunately, there has been little investment locally in the types of tools that *could* put an informed evacuation plan in place *before* the next emergency. The Sonoma County Department of Emergency Management has literally no advanced tools to conduct the specific evacuation route planning mandated by AB 747. Without simulation applications, it's an impossible task: calculating wildfire risk for the County's many canyons is a function of fuel, wind speed and direction, and every atmospheric river has the potential to unexpectedly deliver massive amounts of water to very specific flood zones, *but without tools that incorporate NOAA and CAL OES weather data to simulate likely problems, and traffic modeling tools that estimate congestion based on evacuation traffic volume, there is no way for Sonoma County's Department of Emergency Management to develop the detailed plans that would allow each neighborhood to know what its options are or when to initiate its best-case scenarios for public safety.*

The good news is that these tools exist. They aren't cheap, and implementation would require both funding and expertise; but other counties have adopted them, and local funding sources (like 2024 Measure H) can make these tools available to all city and county emergency planners *and the residents they protect*.

Questions from the Floor

Public interest in (and questions about) emergency management is heightened during and after every evacuation emergency. The same questions keep being asked—and not answered:

- Why are most of the major evacuation routes in Sonoma County two-lane roads with inadequate capacity for major traffic events? Is anyone actively working to fix this problem?
- Does Sonoma County have the most effective tools and technologies to assist emergency responders and residents during an evacuation-level emergency?

The Civil Grand Jury asked senior County leaders to answer these questions, and the responses were somewhat disappointing. In short:

- The roads are the roads; improving them is expensive, complicated, and, in most cases, requires support from the State of California, and
- We would love to have tools to create scenario-specific evacuation plans, but they're not in the budget.

It is disheartening to hear that there is no immediate effort to imagine comprehensive roadway solutions. How much money would it take? How long would our major evacuation routes take to fix if the money was at hand? Do we even know how many miles of highway enhancement construction are needed? If Highway 12 and 116, and major county routes like Westside Road and Dry Creek Road need significant public safety improvements, where do these enhancements fit in the long list of budget priorities?

According to the General Plan update published in April, they're far down the list: Goal SE5 (a study to identify County transportation infrastructure critical for provision of emergency services such as evacuation or provide access to critical facilities located within high-risk wildfire, landslide, or flood hazard areas) isn't scheduled to be *started* until 2030. In the meantime, should we all just hope there are no emergencies?

It is equally disappointing to learn that compliance with AB747 and other *state mandates* to develop and communicate zone-specific emergency evacuation plans are 2030 goals. Provision of critical services in highly impacted, systemically vulnerable communities during an emergency deserves a higher priority.

CONCLUSIONS

Sonoma County has the beginnings of a solid framework for evacuations: a written Emergency Operations Plan, an active Emergency Operations Center for coordination, multi-channel public alert systems, and a robust community of residents who recognize both the need for preparedness and the value of planning for emergencies. Collaboration with voluntary agencies provides organized shelter and aid during disasters. These foundations mean the County does not have to start from scratch during a crisis.

However, our analysis identifies areas needing attention. Communications stand out: evacuation orders and warnings must be localized, dynamic *and include immediate instructions for specific areas*. The research evidence is clear that plain, specific alerts (especially mandatory orders when needed) save lives. Sonoma County emergency communications networks should be both hardened and capable of

reaching everywhere in the county, whether through improvements in physical capacity or support for community organizations that can reach places with radio networks when cell service isn't available.

Infrastructure and logistics are another focus. Limitations of the existing road network means contingency planning *in advance* is key to public safety. Funding to reinforce key bridges, install more emergency power generators at critical communications sites (to prevent cell tower failures), or add redundancy (like more river gauges and weather sensors) would increase resilience. The most impactful and consequential fact impacting evacuations is the inadequacy of the roads required for emergency evacuations. Highway 12 in the Sonoma Valley, Westside Road between Healdsburg and the Russian River, and River Road along the Russian River are the most obvious examples of roads that are critical for emergency evacuation, yet they are single lane each way, with some area having minimal shoulders and turn-outs. Upgrading these roads will reduce the likelihood of significant traffic problems during the next emergency evacuation.

Inadequate response to legal mandates for preparedness: California's legal landscape for disaster and emergency management creates a comprehensive, multi-layered system with local authorities at its core. Statutes charge cities and counties with developing robust emergency plans, integrating wildfire and flood considerations into every facet of community planning, and continually updating those plans to reflect new risks and knowledge. The Legislature has reinforced these duties through targeted laws on evacuation planning, alerting standards, and climate resilience.

California's state-local partnership strives to ensure that whether it's a wildfire in the hills or a flood in the valleys, local authorities are prepared to lead a swift, organized, and life-saving response. California has learned from hard experience that **accountability for disaster readiness is clear**: the state sets standards and provides support, but the **operational responsibility lies with the local governments** who know their communities best.

While the framework in place provides a strong foundation to safeguard County residents from the perils of wildfires and floods, Sonoma County's approach to date is long on physical preparedness but short on anticipation. To date, Sonoma County has fallen short of state mandates for preparation of (and communication to residents about) advance preparation of evacuation routes and traffic management systems, identification of (and advance planning for) evacuation via roads that are challenges for emergency services access, and investment in technology that would enable the Department of Emergency Management to develop the detailed analysis needed to facilitate unified command and control during the next major evacuation.

Sonoma County local governments must not only respond to disasters but **prepare in advance** by mapping every flood zone and fire hazard and hardening infrastructure and development patterns against these threats. Readiness is not static. By sharpening communication protocols, shoring up critical infrastructure, fully utilizing analytic modeling technology and engaging citizens in preparedness, the County can move closer to being truly ready for the next major evacuation event. And one is coming.

FINDINGS

- F1. Sonoma County's Emergency Operations Plan, Hazard Mitigation Plan, and Department of Emergency Management are an excellent foundation for disaster preparation.
- F2. The County EOP is intended to be executed in an ad hoc manner without advance identification of specific evacuation routes or predesignated shelters.
- F3. Most of Sonoma County's major evacuation routes are incapable of accommodating predictable evacuation traffic in a timely manner.
- F4. Most roads critical to emergency evacuation in the unincorporated areas of Sonoma County have no remotely managed capability for controlling traffic flow, and existing traffic controls will not be operational during power failures.
- F5. The Sonoma County Sheriff's Office is primarily responsible for ensuring public safety during evacuations, but SCSO staffing may require temporary assignment of non-SCSO County employees for concurrent execution of household evacuation notices and evacuation route traffic management.
- F6. Organized community-based communications networks are a proven emergency resource yet remain only partly integrated into county and city emergency operations and communications infrastructures and require additional investment to provide county-wide coverage.

RECOMMENDATIONS

The Civil Grand Jury recommends:

- R1. By December 5, 2026 the Board of Supervisors shall direct Sonoma Public Infrastructure to estimate and report the necessary cost and location of radio repeaters needed to fully implement GMRS repeaters serving the entire County.
- R2. The Board of Supervisors shall direct the Department of Emergency Management to report on the resources required to accelerate Emergency Operations Plan Annex Goals SE2 and SE5 from 2030 to 2027 by February 2, 2026, and shall evaluate this resource requirement for inclusion in the 2027 County budget.
- R3. By July 1, 2026 the Board of Supervisors shall fund Department of Emergency Management acquisition of evacuation management modeling and simulation software which will facilitate advance identification of zone-specific evacuation routes and evacuation messaging.
- R4. The Board of Supervisors shall direct the Department of Emergency Management to report on the resources required to identify and include within County Evacuation Maps the location of all predesignated county-operated evacuation shelters by March 2, 2026.
- R5. By July 1, 2026 the Board of Supervisors and the Sonoma County Sheriff shall review Sonoma County evacuation plans to determine whether trained and certified Sonoma County employees (using the authority granted by California Government Code Gov. Code §§3100–3102) should become a resource for emergency traffic control operations.

REQUIRED RESPONSES:

Pursuant to Penal Code §§ 933 and 933.05, the civil grand jury requires responses as follows:

- Sonoma County Board of Supervisors F1-F6, R1 - R5
- Sonoma County Department of Emergency Management F1-4, F6; R2, R3, R4
- Sonoma County Public Infrastructure Department to respond to F1, F3, F4, F6; R1
- Sonoma County Sheriff to respond to F1-F6, R5

The governing bodies indicated above should be aware that their comments and responses must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

Responses must be submitted to the presiding judge of the Sonoma County Superior Court in accordance with the provisions of the California Penal Code sections 933 and 933.05. Responses must include the information required by California Penal Code section 933.05.

Reports issued by the Civil Grand Jury do not identify individuals interviewed. California Penal Code Section 929 requires that reports of the Civil Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury.