Kensington Fire Protection District
Emergency Preparedness Committee
July 25, 2024 Meeting

This item is to bring to our attention a recent Contra Costa County Grand Jury report released May 31, 2024, "The Contra Costa County Community Warning System: Will Everyone Get a Warning in Time?"

The report discusses Community Warning Service (CWS) protocols for different types of emergencies, and how activation of the CWS relies on a police/fire dispatcher contacting a person in the CWS unit:

"At all times, and regardless of where they happen to be, one of the three employees in the CWS unit is the designated on-call duty officer who responds to requests for activation of the system. Once the CWS duty officer is contacted by the Sheriff's dispatch center the CWS duty officer has up to 10 minutes to call the incident commander and connect into the CWS secure network. In the event the CWS duty officer is not reached, the dispatch center attempts to contact a backup person to the duty officer. That additional time required to contact the backup personnel, have them get to a computer and establish a secure connection into the CWS, is time that people in an impacted area should be using to take action to remove themselves from danger."

The report also places CWS in context to the 2018 Camp and 2020 Wine County Fires and discusses Berkeley's installation of LRADs (Long Range Acoustic Devices).

The link to the full 16-page report can be found here: https://www.cc-courts.org/civil/docs/grandjury/2023-2024/2402/2402-CommunityWarningSystem.pdf

A Report of
The 2023 – 2024 Contra Costa County Civil Grand Jury

Report 2402

May 31, 2024

The Contra Costa County Community Warning System

Will Everyone Get a Warning in Time?

Civil Grand Jury reports are posted at: https://www.cc-courts.org/civil/grand-Jury-reports.aspx

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Will Everyone Get a Warning in Time?

APPROVED BY THE GRAND JURY

Joanne Sarmento

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6/3/24
Date

APPROVED FOR FILING

Terri Mockler

Hon. TERRI MOCKLER
JUDGE OF THE SUPERIOR COURT

6/3/24
Date

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SUMMARY

In major disasters Americans expect their government to quickly notify them of imminent danger and actions they need to take to prevent injury or loss of life. The primary form of alerts and notifications today is through phone calls, texts, email, social media, radio and television. Alerts may advise people to evacuate, to shelter in place, and/or to keep themselves informed by monitoring further public safety warnings. However, events over the past several years in California and elsewhere in the United States have shown that community warning systems can fail to provide adequate notifications. This report addresses the possibility that Contra Costa County's Community Warning System (CWS) could also fail to deliver timely and accurate notifications to people in danger.

Failures in community warning systems in California have contributed to injuries and loss of life, notably the 2018 Camp Fire that devastated the town of Paradise and took 85 lives, and the 2017 Wine Country fires, a series of 250 fires that broke out in Napa, Lake, Sonoma, Mendocino, Butte, and Solano Counties that took 44 lives. Warnings also came too late for residents to flee their homes in the 2017 San Jose floods and hundreds had to be rescued.

These failures occurred for various reasons, including inadequate preparation for disasters, destruction of power and telecom infrastructure, inadequate staff to operate the warning system, inadequate training of warning system operators, inadequate procedures and training in how to word warning messages, failure to use all alerting tools, malfunctions within the warning system, and the public's lack of engagement in preparing for disasters.

Since the CWS became operational in 2001 Contra Costa County (County) has not experienced floods or wildfires of the magnitudes seen in the Camp fire, the Wine Country fires, or the 2017 San Jose flood. As a result the CWS has not been tested under extreme conditions that such major disasters would present.

This investigation concerns the extent to which CWS could experience failures similar to other counties. The Jury found there are risks that may prevent the CWS from providing timely and accurate notices to all people in an area impacted by an emergency. These risks can be reduced by making several changes to the CWS.

First, to reach more residents by phone or email all residents and businesses in the County should be automatically enrolled into the CWS unless they choose to opt out of enrollment. Second, to mitigate the risk that phones are not working or heard, long-range acoustic devices that can broadcast audible messages up to a mile away should be deployed where feasible. Third, to reduce the possibility of delays due to the time required to engage a trained operator of the CWS there should be at least one dispatcher trained to operate the CWS in the Sheriff's dispatch center at all times. Fourth, to address the potential that alerts can be delayed due to inadequate training, the Sheriff's Office should implement a process to ensure that first responders in County agencies who take the CWS training certify that they have reviewed and understood the training materials. Fifth, to bring a greater diversity of ideas and experience to the design and operation of the CWS the County's Chief Administrative Officer should create a CWS advisory body comprised of warning system and County emergency response experts. Last, the County should

commission a third-party expert to conduct a comprehensive risk analysis of the CWS, its processes, procedures, hardware, and software.

METHODOLOGY

The Grand Jury used the following investigative methods:

- Interviews with personnel in various County agencies and industry experts
- Reviews of policies and procedures related to the operation of the CWS
- Reviews of published reports
- Research of community warning systems.

BACKGROUND

The CWS is intended to provide notifications to residents and businesses of potential life-safety hazards, including chemical releases, fires, earthquakes, floods, and law enforcement activities. It is the only warning system in the County that has access to the nation's mass notification tools and databases, giving the CWS the potential to reach all people within the county — residents, businesses, and visitors. When a potentially life- or health-threatening hazard requires the public to take action, the CWS can alert people using phone calls, text messages, emails, the sounding of sirens, the CWS website, social media, radio, and television (TV).

The CWS is designed, maintained, and operated by the County's Office of the Sheriff, Emergency Services Division. The CWS unit has three employees who plan, organize, maintain, and operate the CWS. At all times one of these three is the designated on-call CWS duty officer, who, regardless of where they might be, is responsible for responding to requests to operate the CWS. An additional 3–5 employees within the Sheriff's Office can also operate the CWS.

Operation of the CWS

The CWS has two "modes" of operation. In one mode, the county designates and enables certain large refineries and chemical plants to decide what type of alert to send, and trains personnel in those facilities to initiate alerts from their own CWS computer terminals. When doing so, they must follow procedures established under the County's Health Services Hazardous Materials Programs (HMP) and use pre-determined alert messages for notifications related to their chemical releases. There are three levels of alerts the plants can send:

- A Level One release is not expected to have off-site health consequences, and no alert is sent.
- A Level Two release is expected to go off-site and may have adverse health consequences for sensitive individuals including those with lung or heart disease, the elderly, and the very young. Text messages and emails are sent to all CWS-registered users in the affected area.

- A Level Three release is expected to go off-site and may have adverse health consequences for the general public. Level 3 is the highest danger level and activates all the alerting tools, including sirens that signal people within range to shelter in place and wait for further alerts, information, and notices on their phones, TVs, and radios.

Subsequent to the initial alert sent by one of the refineries or chemical plants, the impacted plant works with HMP and CWS to provide ongoing information about the nature of the release, and in the event of a Level 3 alert, the estimated time when sheltering will no longer be necessary.

In the second mode, applicable in all other emergencies, including chemical releases from other industrial plants that do not have their own CWS terminals, railroad cars, or tanker trucks, the fire and police responders set up a command post with a designated incident commander. The incident commander, in concert with other first responders, assesses the situation and decides if activation of the CWS is warranted. Once the decision is made to send an alert, the incident commander initiates the sequence of steps shown in Table 1. When the incident commander receives a call back from the CWS duty officer (Step 5), they work together to define the impacted area and draft the alert message.

Table 1
CWS Activation Process

Step	Description	
1	Incident commander calls County Sheriff's dispatch on the County radio system and leaves their cell phone callback number	
2	Sheriff's dispatch contacts CWS duty officer and relays the message to call the incident commander	
3	If Sheriff's dispatch cannot reach the CWS duty officer, then Sheriff's dispatch contacts a backup to the CWS duty officer	
4	CWS duty officer or backup connects into the CWS secure network after contact with the incident commander	
5	CWS duty officer works with incident commander to craft message and define the impacted area	
6	CWS duty officer enters information into CWS alert computer	
7	CWS duty officer sends alerts	
8	CWS duty officer informs incident commander that alerts have been sent	

Having identified the impacted area and the alert message, the CWS operator chooses the appropriate alerting tools depending on the situation and any drawbacks of specific tools, as described below, and sends the alert:

1. *Wireless Emergency Alerts*: The CWS can send alerts using the federal Wireless Emergency Alert (WEA) system, known for sending AMBER alerts. Under the Federal Communication Commission's regulations for use of the WEA, this system can only be activated by the CWS operator when there is threat of injury or loss of life to those in the impacted area. This system sends alert messages to all WEA-compatible cell phones (residents, businesses, visitors, travelers) within the area designated by the CWS operator, and it does not require cell phones to be registered in the CWS. The alert is not a call or text: unless the phone is off or on airplane mode, it may vibrate, make a loud sound and display a message on the screen. This tool is designed to cover a larger area than just the specific, targeted area impacted by the emergency. There is an "overshoot" of 0.3 to 10 miles depending on the age and model of cell phone, which can result in alerts being received by people not in the designated area. Because of the overshoot beyond the designated area, there are circumstances when a WEA alert to evacuate an impacted area could result in clogged evacuation routes, and a WEA alert may not be issued as occurred during the Camp fire. Cell phone owners can opt out of WEA alerts by changing their phone settings to not receive them.
2. *Landlines*: The CWS operator can choose to send a recorded message to all landlines (phones connected by wires to the telephone company's wires) located in the impacted area. Landlines need not be registered in the CWS to receive calls. The message will be played to whomever answers the phone, including an answering machine, and there will be repeat calls if there is no answer or a busy signal. There are two issues that render landlines largely ineffective as an alerting tool. First, the increasing use of cell phones and phones that use Voice over Internet Protocol (VoIP) has resulted in only 6.5% of California households having landlines today. And second, it can take a lot of time for the CWS to call all the landlines. In an impacted area with tens of thousands of landlines, it can be hours, or even days, to make all the calls. For example, Sonoma county's warning system is able to initiate approximately 2,500 calls per minute.
3. *Email, Cell, and Voice over Internet Protocol (VoIP) phones*: CWS can: 1) call cell phones and VoIP phones in an impacted area and play a recorded message; 2) send texts to cell phones; and 3) send emails to internet-connected computers. All three of these tools require County residents and businesses to create an account in the CWS and register their VoIP telephones, cell phone numbers, and email address(es) to get alerts using these tools.
4. *Radios and TV*s: The CWS operator can choose to send alerts over the federal Emergency Alert System that broadcasts a message on participating local AM radios and television channels, as well as weather radios. People must have access to a radio and/or television and tune into the specific stations that carry alert messages.
5. *Social Media*: The CWS operator can post alerts to Facebook, X, WhatsApp, LinkedIn, other social media, and the CWS web site.

Generally, in any major disaster, including Level 3 chemical releases, all these tools will be used. However, if the local power grid is damaged or shut off then devices that rely on grid power won't operate. If cell towers are out, cellular devices may not receive alerts. The CWS operator may also choose to limit sending alerts through the WEA, radios, or TVs due to concerns about

causing congestion on evacuation routes or reaching too many people in areas not impacted by the disaster.

DISCUSSION

The Jury determined that the success of any particular warning system is highly dependent on the redundancies built into the system in order to ensure alerts reach as many people as possible. Redundancies for emergency response include having backup radios and radio systems, backup computers, backup personnel, and as many methods, or tools, as feasible by which to send alerts. The CWS and first responders in Contra Costa County have substantial backup for their computer and telecom hardware to initiate and send alerts. However, the Jury found several instances where redundancies in CWS processes can be increased, thereby reducing the risk that CWS alerts may not be timely and/or may not reach all the people in the impacted area.

Reliance on Voluntary Registration in the CWS Creates the Risk That Several Alerting Tools Will Not Work for Up to 70% of County Residents

The CWS can send alerts to all cell phones in an impacted area through the WEA, and/or it can send recorded messages to all landlines within that area, although as discussed, only 6.5% of phones are landlines, and the typical landline phone connects to a base station that does not work if the power is out. Neither of these alerting tools requires people to register their cell phones or landlines in the CWS.

The CWS can also call and text cell phones, call VoIP phones, and send emails to the 30% of County residents and businesses who have registered their contact data in the CWS. However, these additional alerting tools may not work for the 70% of County residents and businesses who have not registered their contact data in the CWS.

The current process to register phones and email addresses in the CWS relies on residents and businesses to proactively create a CWS account and register their physical address, phone, and email data. This process creates the risk that people who are not aware of the CWS, do not know they need to register, do not know how to register, find the registration process too complex or burdensome, or incorrectly think that somehow the government will contact them, will not have their contact data in the CWS. About 30% of County residents have created an account, resulting in a risk that the 70% of residents who have not registered with CWS may not receive any alerts in the event the alerting tools that do not require registration – WEA, landlines, radios, TVs – are not activated. In both the 2018 Camp Fire and the 2017 Wine Country fires, the failure of residents to register their phones and emails with those counties' warning systems contributed to the loss of life:

- At the time of the Camp Fire, less than 40% of the residents in the fire-affected area had registered their phones to receive emergency alerts. Of the 52,000 people who evacuated, 7,000 residents received an emergency alert through Butte County's system.
- In the Wine Country fires, according to an October 2020 CalMatters report, 20% of residents in Sonoma County were signed up for that county's emergency alerts.

The risk that people may not receive phone or email alerts because they have not entered their contact data into CWS can be mitigated by changing the current process by which the CWS incorporates the necessary contact data into its database. Instead of the current "opt-in" process in which County residents and businesses have the option to enter their data into the CWS by creating an account, the process would be changed to automatically bring the data into the CWS and create an account unless the person or business chooses to opt out of automatic registration. Non-residents of the County would still have to register their data in CWS to receive alerts. The necessary data already exists, can be obtained from the various utility, telecom and internet providers, and can be stored in the secure data centers provided by the national companies that provide these services to cities, counties, and states across the nation. Changing from an opt-in to an opt-out process helps to ensure that critical alert information can reach more people relative to the current process.

Changing the CWS to an opt-out system removes the requirement for any County resident or business to create an account in order to receive calls or texts on their cell phones, calls on their VoIP line, or email. Those who don't want their contact data registered in the CWS would have to request their data not be included. Such residents or businesses could still receive alerts via other mechanisms such as the WEA, radio, TVs, social media, and non-VoIP landlines if those tools are activated.

The annual cost to the County to periodically obtain the contact data of its residents and businesses from the various telecom companies is estimated to be on the order of $100,000. A one-time cost to educate the public about the change to the system and to provide them information on how and when to opt out would also be incurred by the County and is estimated to be on the order of $500,000. For the purpose of cost-benefit analyses of government programs the United States FEMA (Federal Emergency Management Agency) estimated the value of a life at $7.5 million in 2020. The benefit of an opt-out process, in terms of potential value of loss of life, outweighs the estimated cost.

Funding to change the process for collecting people's contact data could come from Measure X. Measure X is a countywide, 20-year, ½ cent sales tax approved by County voters on November 3, 2020. The ballot measure language stated that the intent of Measure X is "to keep Contra Costa's regional hospital open and staffed; fund community health centers, emergency response; support crucial safety-net services; invest in early childhood services; protect vulnerable populations; and for other essential county services." Modification to the CWS fits in the category of emergency response and would be an appropriate use of Measure X funds. For example, Measure X funds are being used to fund a program for residents to use a mobile application from a private vendor that displays evacuation zones on their mobile devices, and allows them to obtain information about emergencies in any zone in the state.

There is a Risk That Telephones and Internet-Connected Devices Will Not Work or Be Heard

Not everyone hears or responds to phone calls, emails, texts, or WEA alerts for any number of reasons, including out of service telecom and power grid infrastructure. Of the 52,000 people who evacuated during the Camp fire, 14% received an emergency alert through Butte County's warning system.

Another type of warning device, outdoor warning systems that are not dependent on telecom or power grid infrastructure, could increase the redundancy of alerting tools. Outdoor warning systems supplement other warning tools by providing acoustic (voice or siren sounds) to people who are outdoors. These systems use powerful loudspeakers (known as "long-range acoustic devices," or LRADs) that can broadcast a verbal message or tones up to a mile away. They can operate from batteries that are charged from the grid or solar panels and can also receive signals from either cell towers or satellites. LRADs can broadcast audible instructions to people outdoors when cell phones and other alert receiving devices may not be working or heard. There is some evidence that under certain circumstances, LRADs can be heard indoors.

The City of Berkeley is currently installing 15 LRADs at a cost of $2 million. Berkeley's rationale for installing LRADs was the recognition that their existing alerting tools, similar to CWS, would reach some but not all people within the city.

Southern Marin Fire District (SMFD) has installed LRADs in five locations throughout Mill Valley. SMFD's goal in the installation of the LRAD system was to improve the resiliency and redundancy of their warning system. SMFD plans to install five additional LRADs in other parts of its district, including Sausalito and Tiburon.

For the same reasons SMFD is installing LRADs, the Novato Fire District has taken steps to develop a comprehensive LRAD emergency warning network within its territory. Novato has conducted an acoustical study to determine which areas may be suitable for LRADs, has identified potential sites where LRADs might be located, and is planning to install one test unit. The LRAD system would facilitate disaster notification and evacuation efforts.

Contra Costa County has a diverse topography, with flatlands, hills, valleys, and canyons, that all affect how sound is reflected and absorbed as it travels. There may be areas where LRADs would be an effective alerting tool. However, an acoustical study (called a "sound study") of the various areas in the County must first be conducted to determine where, if at all, LRADs might be effective. Potential LRAD sites must also be identified for any areas in which LRADs are found to be effective. The Jury could not estimate a cost for a sound study. As discussed in the previous section, Measure X is an appropriate funding source for emergency response activities, such as a sound study.

Reliance Upon An On-Call CWS Operator Creates a Risk of Delay in Sending Alerts

The Jury's research into disasters in California and elsewhere showed that timely assessment of the situation and sending alerts as soon as possible can make the difference between life or death for people in the impacted area. According to emergency response experts interviewed by the Jury, in the event of disasters such as fast-moving wildfires, alerts must be drafted and sent to the public within 20 minutes of when the incident commander initiates the process. For example, in a 2018 evacuation drill Sonoma County targeted a 10-minute time frame to send a WEA alert.

At all times, and regardless of where they happen to be, one of the three employees in the CWS unit is the designated on-call duty officer who responds to requests for activation of the system. Once the CWS duty officer is contacted by the Sheriff's dispatch center the CWS duty officer has up to 10 minutes to call the incident commander and connect into the CWS secure network. In the event the CWS duty officer is not reached, the dispatch center attempts to contact a backup

person to the duty officer. That additional time required to contact the backup personnel, have them get to a computer and establish a secure connection into the CWS, is time that people in an impacted area should be using to take action to remove themselves from danger.

The dependence on a single, on-call duty officer introduces a risk of delay in the CWS activation process. There are innumerable ways that an on-call CWS duty officer could be incapacitated, such as an accident or a sudden illness, requiring additional calls until a CWS operator can be found to return the call to the incident commander. But each additional call delays getting the alert out, and in the event of a disaster, such as a fast-moving wildfire, a few minutes additional time to send out alerts can make a difference to people in an impacted area who need to act quickly to get out of danger. In the Camp Fire, of the five staff members trained to operate Butte County's warning system only one was available.

This risk can be mitigated by enabling and training existing employees in the Sheriff's dispatch center to operate the CWS. Doing so creates redundancy in the number of on-duty personnel who can operate the CWS. Such a redundancy is critical if the CWS duty officer cannot be reached, and the incident commander requires an alert to be sent immediately. At least one of the CWS-trained employees would always be on duty in the dispatch center. Additional alerts can be crafted by the CWS on-call duty officer once they are contacted and engaged.

A 2018 survey of Bay Area emergency warning programs by Sonoma County's Fire and Emergency Services Department showed that of the eight Bay Area counties included in the survey (Napa was not included), as well as Monterey County, Contra Costa is the only county to rely exclusively on an on-call duty officer to operate the warning system. With the exception of Sonoma County, each of the other Bay Area counties and Monterey County trains their dispatchers to operate their warning systems so there is always someone in the dispatch center who can operate the warning system. Sonoma County has specially trained operators similar to the CWS on-call duty officers, but also trains officers in its 24/7 dispatch center to use pre-determined templates in the event of an immediate need to send an alert before the warning system duty officer can be engaged. The Jury determined that Napa County also trains their dispatchers to operate their warning system.

Effectiveness of Training Incident Commanders On the Use of the CWS

On November 2, 2023, firefighters from the Moraga-Orinda Fire District (MOFD) responded to a fire in the unincorporated area of Canyon. Once the incident commander determined that an evacuation warning should be sent to the impacted area, it took about 40 minutes for the warning to go out. Residents in the impacted area received the alert after the fire was under control, creating confusion among the residents. The alert was not sent within the 20-minute time frame determined by the Jury as appropriate for sending alerts such as this one. The additional time needed to draft and send the alert was due, in part, to uncertainty around which emergency response agency had authority to issue evacuation warnings or orders. Under California law only law enforcement officers can issue evacuation warnings or orders.

According to the after-action reports for the Wine Country fires and the Camp Fire a cause of delays getting alerts out was inadequate preparation and training of emergency responders in the use of their local warning systems. The US Department of Homeland Security has identified training as one of the ten best practices used to improve warning system operations, saying that

conducting trainings, exercises, and tests of warning systems with stakeholders and partners on a regular basis is needed to maintain proficiencies. Lessons observed from these activities can be evaluated, documented, and incorporated into future operations.

Current training on use of the CWS consists of a 14-minute video with 11 slides that describe the CWS, the alerting tools, and what an incident commander must do to send an alert. CWS staff sends the video annually to the fire and police agencies in the County. CWS staff does not solicit or receive confirmation from the intended recipients of the training that they have reviewed the training materials. Nor do the training materials contain any type of exam to determine how much of the information in the video has been retained or understood. As a result, there is a risk that an incident commander with an inadequate understanding of the process to initiate a CWS alert may require more time to initiate an alert relative to an incident commander with a complete understanding.

Although the CWS participates in evacuation drills organized by fire districts/departments in the County, the CWS does not otherwise conduct drills to test or practice just the CWS initiation process by first responders who may be in the position of incident commander during an emergency. Such drills or practice would be one mechanism to inform CWS staff on the effectiveness of its training on the use of the CWS by first responders.

The Sheriff's Office and CWS staff should implement a process to ensure that first responders in County agencies who take the CWS training certify that they have reviewed and understood the training materials. Such certification could include a brief, e.g., 5 minutes, questionnaire to test their understanding of the CWS alert initiation process.

Why People Do Not Receive Intended Alerts

The after-action reports from the Camp Fire and Wine Country fires describe instances of warnings being sent but not received or received far too late for the intended recipients to take the actions directed by the notifications. Two evacuation drills in the city of Richmond in 2022 and 2023 resulted in half of the drill participants claiming they should have received a drill alert but did not, or received the alert hours later after the drill was completed. No study was conducted to verify or understand these claims.

The CWS has not conducted any tests of its system to determine the extent to which alerts are actually received or received too late for people to take action. As a result, the CWS does not know what corrective actions may be needed to ensure that alerts and notifications are capable of reaching all the intended recipients in time to take action.

Risk Analysis of the CWS

The CWS staff continually evaluates its systems and processes for operational risks. The County has not conducted a comprehensive risk analysis of the CWS by an independent third party since the County took control of the CWS in 2001.

Subsequent to the Camp Fire and the Wine Country fires both Sonoma and Butte counties engaged external parties to evaluate their emergency response processes during those fires. Butte county engaged a firm, Constant Associates, to prepare an after-action report on the Camp

Fire. Sonoma county requested the California State Office of Emergency Services tconduct an independent review of that county's emergency notification process and response to the October 2017 fires in Sonoma County. The reports for both counties described problems with the warning systems in those counties and made recommendations to remediate those problems.

Contra Costa County should not wait for risks to be identified whenever some part of its warning system fails in an actual emergency. A third party with broad, national and/or international experience in public warning systems and risk analysis should be commissioned to conduct a comprehensive risk analysis of the CWS, its hardware, software, procedures, and processes. Such a risk analysis would also identify potential mitigation measures for the identified risks. Funding for such a risk analysis could be provided under Measure X.

Oversight of the CWS

The current process for improving the design and operation of the CWS for alerts not related to releases of hazardous chemicals resides within the Sheriff's Office, Emergency Services Division (ESD). ESD interacts with the other emergency response agencies in the County that have an interest in the functioning of the CWS. However, the Jury determined the current process lacks a formal CWS advisory body that could routinely engage emergency response experts from the various fire and police districts/departments in the County who could provide insights and advice to improve the design and operation of the CWS.

The issues discussed about the CWS in this report are the types of issues appropriate for identification and resolution by a CWS advisory body.

A logical place for such an advisory body is within the County's Emergency Services Policy Board (ESPB). The ESPB is an advisory board to the County's Chief Administrative Officer that provides assistance and advice on emergency preparedness planning efforts, and the coordination of those planning efforts, throughout the County. The ESPB reviews and makes recommendations on emergency and mutual aid plans and agreements, and on any ordinances, resolutions and regulations that are necessary to implement those plans and agreements. The County Administrator serves as the chair, and the Sheriff serves as the vice-chair of the ESPB. Other members include the following: County Counsel; Director, Public Works; Director, Health Services; Fire Chief, Contra Costa County Fire Protection District; Risk Manager; Director, Department of Conservation and Development, Director, Employment and Human Services; County Superintendent of Schools or designee; Director, Information Technology; and a Representative from the Public Managers' Association.

The ESPB has met once annually from 2015 through 2023 with the exception that no meetings were held in 2020 and 2021 due to the pandemic. A review of the meeting agenda packets shows the CWS was not an agenda item in any of those years.

The ESPB itself is not an appropriate vehicle or process to explore and identify improvements to the CWS. The Jury determined that the telecom technologies, software, and processes used by the CWS change rapidly. A more appropriate vehicle and process is an ad-hoc subcommittee of the ESPB that meets at least quarterly, and that would bring together emergency response experts from around the County to advise on improvements to the CWS.

FINDINGS

F1. The CWS is used in response to emergencies in the County.

F2. About 30% of County residents have created a CWS account and entered their contact data.

F3. The approximately 70% of residents who haven't registered with CWS may not receive any alerts in the event that other alerting tools not reliant on registration in the CWS – WEA, radios, and TVs – are not activated.

F4. Additional redundancies in the processes and operation of the CWS can increase the potential for more people to receive timely alerts.

F5. To enable the redundancy of other alerting tools – sending recorded voice messages to cell and VoIP phones, text messages, and emails – the contact data for these devices must be registered in the CWS.

F6. Phone numbers and associated physical addresses can be loaded into the CWS for all businesses and residents in the County from the various telecom providers that serve the County.

F7. In an opt-out warning system, County residents and businesses that do not want their phone and/or email data in the CWS can request to have their data removed.

F8. The reliance of the CWS on voluntary registration creates a risk that too few residents will register their phones and email in CWS.

F9. An opt-out system would incur annual costs for data subscriptions on the order of $100,000.

F10. An opt-out system would incur an initial cost to educate residents and businesses of the CWS system change on the order of $500,000.

F11. Outdoor warning systems supplement other warning tools by providing acoustic (voice or siren sounds) to people who are outdoors.

F12. Long Range Acoustic Devices (LRADs) can broadcast audible instructions to people outdoors when cell phones and other alert-receiving devices may not be working or heard.

F13. A sound study is needed to evaluate where, if at all, LRADs might be effective in Contra Costa County.

F14. Sites where LRADs could be located would need to be identified for any areas in which LRADs are found to be effective.

F15. The County would incur a cost for a sound study on the feasibility to deploy LRADs within the County.

F16. There is no estimate of the cost for an independent, third party to conduct a feasibility study for the use of LRADs within the County.

F17. LRADs would be part of the County's emergency response warning tools.

F18. Costs related to emergency response can be funded from Measure X revenue.

F19. At all times, one of the three CWS employees is the designated on-call duty officer who responds to requests for activation of the CWS.

F20. In the event of disasters such as fast-moving wildfires, a reasonable time for alerts to be sent to the public is within 20 minutes of when the incident commander contacts the CWS duty officer.

F21. Once the CWS duty officer is contacted by the Sheriff's dispatch center the CWS duty officer has up to 10 minutes to call the incident commander.

F22. In the event the CWS duty officer is not reached after two attempts to contact them, the dispatch center attempts to contact a backup person to the duty officer.

F23. Additional time is required to contact CWS backup personnel and have them get to a computer and establish a secure connection into the CWS.

F24. In the event the CWS duty officer is not reached after two attempts by the dispatch center to contact them, the time required to contact backup personnel to the on-call CWS duty officer is uncertain.

F25. Reliance on a single person to operate the CWS, the on-call CWS duty officer, creates a risk that alerts and notifications could be delayed.

F26. Two evacuation drills in the city of Richmond in 2022 and 2023 resulted in half of the drill participants claiming they should have received a drill alert but did not, or received the alert hours later after the drill was completed.

F27. The CWS did not conduct any studies to verify or understand the claims Richmond evacuation drill participants made that they should have received a drill alert but did not, or received the alert hours later after the drill was completed.

F28. The CWS is not tested to determine the extent to which people actually notice, read, or hear alerts sent by the CWS.

F29. The CWS staff evaluates its systems and processes for risks.

F30. The County has not engaged a firm with expertise in risk analysis of community warning systems to conduct a comprehensive risk analysis of the CWS since the County took control of the system in 2001.

F31. The current process for improving the design and operation of the CWS for alerts not related to releases of hazardous chemicals resides within the Sheriff's Office.

F32. There is no formal body or process that brings together emergency response experts from emergency response agencies in the County to focus and advise solely on the design and operation of the CWS.

F33. The functioning and effectiveness of the CWS can be improved, and operational risks reduced, with the implementation of a CWS advisory body.

F34. The Emergency Services Policy Board (ESPB) can create subcommittees, such as a CWS advisory committee.

F35. The CWS staff provides training materials to the fire districts/departments, police departments, and dispatch centers in the County on the use of CWS, its tools, types of warnings, activation, and information needed by the CWS duty officer.

F36. The CWS staff does not have a process to determine if the recipients of the training it provides to the first responders of the fire districts/departments, police departments, and dispatch centers who receive the training materials on CWS have read and understood the training materials.

RECOMMENDATIONS

R1. By March 31, 2025, the Board of Supervisors should develop a plan to modify the CWS so that it automatically registers all available contact data for all County residents and businesses into its system and provides a mechanism for residents and businesses to opt out of the automatic registration process.

R2. By December 31, 2025, the Board of Supervisors should complete the implementation of the plan to modify the CWS so that it automatically registers all available contact data for all County residents and businesses into its system and provides a mechanism for residents and businesses to opt out of the automatic registration process.

R3. By December 31, 2024, the Board of Supervisors should commission a sound study by an independent, third party to determine the feasibility of deploying LRADs in any areas of the County.

R4. By June 30, 2025, the Office of the Sheriff should train employees in the Sheriff's dispatch center to operate the CWS.

R5. By March 31, 2025, the Office of the Sheriff should implement a plan to conduct testing of the CWS to determine the causes of the failure of CWS alerts to reach all the intended recipients of test alerts within 10 – 20 minutes of the time the alert is sent.

R6. By June 30, 2025, the Board of Supervisors should execute a contract with a third-party consulting firm to conduct a comprehensive risk analysis of the CWS, including its processes, procedures, contracts, hardware, and software.

R7. By March 31, 2025, the Board of Supervisors should direct the County's Chief Administrative Officer to establish a CWS advisory subcommittee of the Emergency Services Policy Board.

R8. By June 30, 2025, the Office of the Sheriff should implement a process to ensure that first responders in County agencies who take the CWS training certify they have reviewed and understood the training materials.

REQUEST FOR RESPONSES

Pursuant to California Penal Code § 933(b) et seq. and California Penal Code § 933.05, the 2023-2024 Contra Costa County Civil Grand Jury requests responses from the following governing bodies:

Responding Agency	Findings	Recommendations
Board of Supervisors	F1 – F18, F29 - F33	R1 – R3, R6, R7
Office of the Sheriff	F19 – F28, F34 – F36	R4, R5, R8

These responses must be provided in the format and by the date set forth in the cover letter that accompanies this report. An electronic copy of these responses in the form of a Word document should be sent by e-mail to ctadmin@contracosta.courts.ca.gov and a hard (paper) copy should be sent to:

Civil Grand Jury – Foreperson
725 Court Street
P.O. Box 431
Martinez, CA 94553-0091