



RIVERSIDE COUNTY GRAND JURY

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April 15, 2024

Riverside County Board of Supervisors
4080 Lemon St, 1st Floor
Riverside, CA 92501

Subject: 2023-2024 Grand Jury Report: 911 CALL FAILED, NOW WHAT?

Dear; Kimberly Rector, Clerk of the Board

Please note that Penal Code Section 933 et seq. specifies that you file a response with the following agencies within ninety days.

Judith C. Clark, Presiding Judge
Superior Court of California, County of Riverside
4050 Main Street
Riverside, CA 92501

Riverside County Grand Jury
Post Office Box 829
Riverside, CA 92502

Riverside County Clerk-Recorder
2720 Gateway Drive
Riverside, CA 92507

Further, it specifies that this report be kept **confidential for a minimum of two working days** prior to public release. The contents of this report will be made public after the close of business **April 18, 2024**

Sincerely,

Don Smith, Foreperson
2023-2024 Riverside County Civil Grand Jury

911 CALL FAILED, NOW WHAT?



2023-2024 Riverside County Civil Grand Jury



911 CALL FAILED, NOW WHAT?

SUMMARY

Life-threatening emergencies may strike at any time. These events can include medical, mental, physical, natural, or man-made disasters. Mere seconds of interrupted communication can create delayed responses that may result in the loss of life, injury or damage to property.

The purpose of this report is to provide an awareness of how the 911 emergency communication system functions and to provide additional information on how to access emergency services when 911 does not work.

In August 2023, for example, storms struck communities in Riverside County. The media reported that cities within the region were affected by the storms, including interruptions to the 911 emergency communication system. Telephone access to 911 emergency responders was delayed by as much as 35 hours, placing residents' safety at risk.¹

The outages disrupted a part of the physical telephone infrastructure. There was a single source of disruption without redundancy. Sufficient backup to continue the service was unavailable.

Text-to-911 is not commonly known. Educating the public about Text-to-911 can benefit residents and businesses on how to contact emergency services by various means.

The State of California is responsible for the 911 system, including infrastructure, within the state, up to the point at which emergency calls are transferred to Public Safety Access Points (PSAPs), also known as 911 dispatch where 911 operators answer emergency calls.

Funding for 911/E911 (Enhanced 911) is provided by the State with a 30-cent 911 surcharge on telephone bills. Telephone customers pay this surcharge per line monthly. This totals approximately \$200 million annually.²

A webpage provided by Riverside County Sheriff's Office (RSO) provides Riverside County communities information about 911 access. However, only residents who can access the RSO website can obtain this information.

¹KESQ News, <https://kesq.com/news/2023/12/04/i-team-local-911-connection-failures-concern-local-emergency-operations-managers-now-working-to-prevent-future-outages/> access 03/26/2024

² NBC News, Bay Area <https://www.nbcbayarea.com/news/local/california-911-oversight-falls-behind/3312659/#:~:text=Failure%20to%20monitor%20911%20funds%20and%20centers&text=Since%202013%2C%20telephone%20taxes%20and,centers%20for%20equipment%20and%20training> access 03/26/2024

911 CALL FAILED, NOW WHAT?

BACKGROUND

A brief history and explanation of how the 911 emergency communication system is structured will provide a more comprehensive understanding of its complexities. The original concept for a single telephone number, enabling residents to access emergency responders, began in 1957 when the National Association of Fire Chiefs recommended use of a single number for reporting fires.³

The resulting 911 system includes a series of operations that include design, implementation, administration, budgeting and reporting, all of which is under the control of the State of California.

Riverside County is responsible for answering and responding to emergency calls received. Riverside County emergency services departments have experienced some successes in spite of dealing with agencies and providers who are not accountable to Riverside County.

History - Original 911

In 1968, 911 emergency service was established when all telephone calls were transmitted over landlines. During that same year in the City of Haleyville, Alabama, the first 911 telephone call took place. This emergency telephone service was implemented in California in 1973, and by the year 1979, 26% of the U.S. population had access to this 911 system.⁴ This allowed callers to reach emergency services with a simple easy-to-remember telephone number.

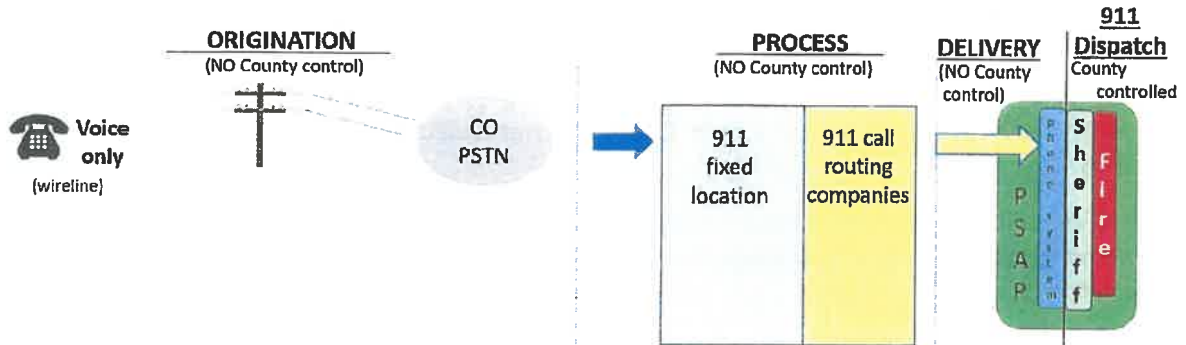
The routing of 911 calls at that time originated from a residence or business telephone landline from a fixed location. The initial contact from a landline was routed through the Public Switched Telephone Network (PSTN). The PSTN is the process by which local, long distance, and international calls are processed in the United States. The 911 call, utilizing PSTN, automatically included the fixed location of the caller.

³ NENA <https://www.nena.org/> access 03/27/2024

⁴ ABC7 News <https://abc7news.com/911-call-anniversary-celebrated-in-bay-area/3096036/> access 03/26/2024

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Original 911



Conceptual diagram #1

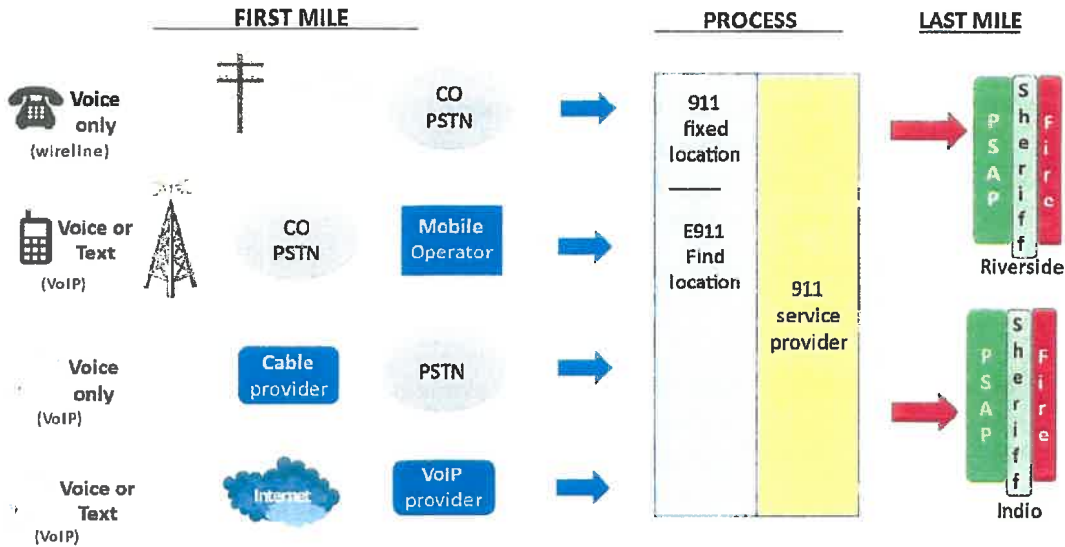
Enhanced 911 (E911)

The 911 emergency services system has evolved along with new communications technologies such as cellular telephone, mobile radio, and Voice over Internet Protocol (VoIP). Initially, cellular telephone calls did not include the originating location of the caller, which required the 911 Dispatchers to rely on the calling party for their location information (Refer to diagram 2). Currently, most cellular telephones can send location information, with further upgrades planned.

CO	Central Office Switch (CO), part of the PSTN, local calls are switched to destination phone numbers
PSTN	Public Switched Telephone Network whereby calls are switched between COs, local, and long distance
VoIP	Voice over Internet Protocol, calls converted to transit over IP network access
PSAP	A Public Safety Answering Point (PSAP), sometimes called a public-safety access point, is a type of call center where the public's telephone calls for first responders (such as police, fire department, or emergency medical services/ambulance) are received and handled. It takes calls from any landline, mobile phone line, or VoIP (Voice over Internet Protocol) line.

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Original 911 and E911



Conceptual diagram #2

Next Generation 911 (NexGen 911/N911)

Next Gen 911 will be the next step in the national evolving emergency communications systems. As of March 2024, the schedule for upgrades in Riverside County has not been determined. Riverside County is ready to receive upgrades pending scheduling from the State.

NextGen 911 (N911) is designed to overcome limitations within the 911/E911 systems. This will allow calls to be re-routed automatically to other agencies increasing resiliency, providing a common system for alerts and warnings statewide, and ensuring that calls are answered within three (3) seconds or less. It will also support Text-to-911 to Public Safety Answering Points (PSAPs)/911 Dispatch Centers, and will improve use of state-of-the-art mapping for enhanced wireless caller location information.⁵

⁵ 911 Government

<https://www.911.gov/issues/ng911/>

access 03/26/2024

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METHODOLOGY

Interviews

- Riverside County Sheriff's Office (RSO) - command staff
- Riverside County Fire Department - management
- Riverside County Emergency Management Department (EMD) - senior staff
- Riverside County Information Technology Department (RCIT) - management
- Riverside County Board of Supervisors - Supervisor

Tours

- Riverside County Information Technology Department - Data Center/office
- Riverside County Sheriff's Office - Dispatch and Air Operations
- Riverside County Fire Department /Cal-Fire 911 - Dispatch and Air Operations

Correspondence

Emails from cities:

- Cathedral City - city management
- Desert Hot Springs - city management
- Indio Police Department - command staff
- Palm Springs - city management

Internet Sources

- Riverside County Sheriff's Office – <https://www.riversidesheriff.org/>
- Cal Fire/Riverside County Fire Department – <https://www.rvcfire.org/>
- Riverside County Emergency Management Department – <https://rivcoready.org/>
- Articles and videos from news outlets including local newspapers and TV stations, see bibliography
- The National Emergency Number Association (NENA) – [https://www.nena.org/?](https://www.nena.org/)

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DISCUSSION

Accessing 911 to reach emergency services is not a perfect system. The system has a history of outages that affect the ability of the public to reach emergency services. For example, outages occurred in the Coachella Valley during the summer and fall of 2023. Residents and businesses were left without access to emergency services for up to 35 hours. The access to emergency services put residents in a vulnerable situation. Total population of Coachella Valley is reported to be over 190,000 residents.

California is responsible for the 911 system within the state. Emergency 911/E911 calls originate from landline, mobile and VoIP network providers. Emergency calls are then routed over the Public Switched Telephone Network (PSTN) to 911/E911 routing providers (Ref: diagram 2). At this point, the 911/E911 routing providers send emergency calls to the County/City PSAPs (911 Dispatch Centers).⁶

Riverside County, and the cities within it, are responsible for answering 911/E911 calls, assessing the situation, and dispatching first responders. This includes providing and maintaining facilities, utilities, workstations, and the personnel to answer calls and dispatch resources. The Riverside County Sheriff's Office and Riverside County Fire Department staff the PSAPs 24 hours a day, 365 days a year. Some incorporated cities have and maintain a PSAP separate from the County.

When 911 emergency calls fail, the general public may lack the knowledge or the means to reach emergency responders. Reacting to 911 outages, the County and affected cities made efforts to inform the public of alternate phone numbers to call. Residents and businesses needed to check websites, government social media, or local radio and television alerts to gain further information. Furthermore, the option of Text-to-911 is available in limited form in the County, but not well-publicized.

Text-to-911 allows residents and businesses to contact emergency services when telephone calls to 911 fail, for people who are hearing or voice impaired, and in situations where an individual is unable to speak safely.⁷

The 911 emergency communications system has advanced and evolved in a much needed and positive direction. It is important that every citizen is made aware of an alternate means to contact emergency services when dialing 911 results in no response.

⁶ 911 authority <https://www.911.gov/assets/State-and-Territory-911-Authority-Structures-Aug-2020.pdf> access 03/27/2024

⁷ *Ref: Riverside County Sheriff Department Dispatch Communications <https://www.riversidesheriff.org/772/911-Dispatch-Communications> acce 03/26/2024

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In light of the recent outages, many Riverside County residents were confronted with the dilemma of how to reach emergency services. Prior to these outages, Riverside County departments, including the Riverside County Sheriff's Office (RSO), provided alternate ways for residents to make emergency contact. This was through the RSO's website.

Other County departments and cities affected by outages made efforts to provide alternate means of emergency contact to its residents and businesses. This included the California Highway Patrol (CHP), alternate local emergency access telephone numbers, city and County websites, social media, and local radio and television alerts.

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FINDINGS

The Riverside County Civil Grand Jury finds:

- F1 In parts of Riverside County, 911 calls failed during and after Storm Hillary in August of 2023.
- F2 The State of California funds, and is responsible for the 911/E911 system administration, design and operations within the State.
- F3 The general population is unaware of an alternate means of access to emergency services when 911 calls fail, or when callers are unable to speak.
- F4 A disruption of the 911 infrastructure caused the failure of emergency calls to reach PSAPs.

RECOMMENDATIONS

The Riverside County Civil Grand Jury recommends:

- R1 The Riverside County Board of Supervisors promote 911/E911 education to the public, including Text-to-911 when telephone calls to 911 fail, including but not limited to, County websites, the media, print, electronic, live and recorded audio and video public awareness.
- Finding 1, Finding 3
- Financial impact: minimal to moderate
 - December 31, 2024
- R2 Riverside County Board of Supervisors proactively advocate to the State of California for upgrades and backups to the 911 emergency system infrastructure, to include identifying and assigning a County employee to represent the County's interest with regular progress reports to the Board of Supervisors.
- Finding 1, Finding 2, Finding 4
 - Financial impact: minimal to moderate
 - December 31, 2024

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RESPONSES

Required

Riverside County Board of Supervisors

- Findings 1, 2, 3, 4
- Recommendations 1 and 2

Invited

Riverside County Sheriff's Office

Riverside County Fire Department/Cal-Fire

Riverside County Emergency Management Department

Riverside County Information Technology Department

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Bibliography

"frontier responds to 911 system outage"

<https://www.desertsun.com/story/news/2016/07/01/frontier-responds-911-system-outage-four-days-later/86614634/>

"911 services restored in Coachella Valley",

<https://www.desertsun.com/story/news/local/2023/11/09/9-1-1-service-restored-in-coachella-valley/71523783007/>

"California 911 oversight falls behind", [https://www.nbcbayarea.com/news/local/california-911-oversight-falls-](https://www.nbcbayarea.com/news/local/california-911-oversight-falls-behind/3312659/#:~:text=Failure%20to%20monitor%20911%20funds%20and%20centers&text=Since%202013%2C%20telephone%20taxes%20and,centers%20for%20equipment%20and%20training.)

[behind/3312659/#:~:text=Failure%20to%20monitor%20911%20funds%20and%20centers&text=Since%202013%2C%20telephone%20taxes%20and,centers%20for%20equipment%20and%20training.](https://www.nbcbayarea.com/news/local/california-911-oversight-falls-behind/3312659/#:~:text=Failure%20to%20monitor%20911%20funds%20and%20centers&text=Since%202013%2C%20telephone%20taxes%20and,centers%20for%20equipment%20and%20training.)

"911 call anniversary", <https://abc7news.com/911-call-anniversary-celebrated-in-bay-area/3096036/>

"911 connection failures", <https://kesq.com/news/2023/12/04/i-team-local-911-connection-failures-concern-local-emergency-operations-managers-now-working-to-prevent-future-outages/>

"When to call 911", [When To Call 911 And When Not To Call 911 - Google Search](#)

"Wireless 911 call flow", <https://www.nena.org/>

"Guide to Calling 911", [Your Guide to Calling 911: Helpful Tips When Reporting an Emergency - CNET](#)

"FAQ About Calling 911", [FAQ About Calling 911 | 911.gov](#)

"What is E911", <https://getvoip.com/library/e911/>

"Next Generation 911 (refer to page 29)",

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[2018–2019 Alameda County Grand Jury Final Report \(acgov.org\)](#)

“Can you call 911 without service”, [can you call 911 without service - Google Search](#)

“911-stats-and-data”, <https://www.911.gov/issues/911-stats-and-data/>

“Riverside Sheriff 911-Dispatch-Communications”,
[911 Dispatch Communications | Riverside County Sheriff, CA \(riversidesheriff.org\)](#)

“Riverside Sheriff 911-Dispatcher”, <https://www.riversidesheriff.org/595/911-Dispatcher>

“Census data”,
https://data.census.gov/profile/Coachella_Valley_CCD,_Riverside_County,_California?q=060XX00US0606590520

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Report Due: 7/18/2024