



## COUNTY RESPONSE

**REPORT TITLE:** 2025-2026 Monterey County Civil Grand Jury Report –  
Emergency Radio Coverage Gaps Impacting Monterey County Fire Agencies

**RESPONSE BY:** County of Monterey Board of Supervisors

**UPDATES TO:** FINDINGS: F1, F2 and F3 and RECOMMENDATIONS: R1, R2 and R3

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***Finding (F1):*** Approximately 42% of Monterey County’s geographic area lacks reliable digital radio coverage, and 18% lacks usable analog coverage, resulting in areas where first responders cannot reliably communicate during emergencies.

**Response to F1:**

The Board partially disagrees with the findings and provides the following clarifications regarding the scope, responsibilities, and coverage metrics of the NGEN radio system.

### **1. Clarification of NGEN System Coverage Scope and Responsibilities**

The cited countywide geographic area exceeds the scope of the NGEN agreement and the jurisdictional boundaries of participating member agencies and therefore does not accurately reflect the system’s coverage responsibilities. The NGEN system is designed to provide radio coverage for participating member agencies within their respective jurisdictions and operational service areas and is not intended to provide coverage for the entirety of Monterey County.

The NGEN agreement includes the following participating member agencies:

- Big Sur Volunteer Fire Brigade
- City of Carmel-by-the-Sea
- City of Del Rey Oaks
- City of Gonzales
- City of Greenfield
- City of King
- City of Marina
- City of Monterey
- City of Pacific Grove
- City of Salinas
- City of Sand City
- City of Seaside
- City of Soledad
- California State University Monterey Bay
- Mid-coast Volunteer Fire Brigade
- Monterey Peninsula Airport District
- Monterey County Regional Fire District
- North County Fire Protection District
- County of Monterey.

## **2. Clarification of NGEN Radio Coverage Percentages**

The NGEN digital project, initiated in 2009, includes only portions of participating member agency jurisdictions due to funding constraints. The project boundary is shown in Figure 1. The NGEN analog system is designed to provide supplemental coverage in areas where digital coverage is limited, particularly in rural and unincorporated areas of Monterey County. Overall system performance should be evaluated based on the combined radio coverage provided by both the digital and analog radio systems.

Based on the defined NGEN scope, the Monterey County Information Technology Department (ITD) conducted a radio frequency (RF) engineering analysis and determined the following:

- Sixteen of the nineteen participating agencies, including five of the seven unincorporated fire districts, exceed 95% mobile coverage for combined digital and analog radio coverage within their respective jurisdictions.
- Overall jurisdictional mobile radio coverage across participating agencies is approximately 83.69% combined digital and analog coverage, representing approximately 99.80% population coverage.
- Fifteen of the nineteen participating agencies, including three of the seven unincorporated fire districts, exceed 95% portable coverage for combined digital and analog radio coverage within their respective jurisdictions.
- Overall jurisdictional portable radio coverage across participating agencies is approximately 68.03% combined digital and analog coverage, representing approximately 98.24% population coverage.

Coverage deficiencies are primarily concentrated within the Big Sur fire districts and portions of the County's unincorporated areas, where terrain and infrastructure limitations significantly impact radio propagation.

See Table A-1, "NGEN Member Agency Mobile Radio Coverage", Table A-2, "NGEN Member Agency Portal Radio Coverage", Table B-1, "NGEN Unincorporated Fire Districts Mobile Radio Coverage", and Table B-2, "NGEN Unincorporated Fire Districts Portable Radio Coverage".

## **3. Clarification of Fire District Coverage, Radio and Dispatch Responsibility**

The report's discussion of Table 1, Appendix B, and the referenced LAFCO study may be interpreted as implying that the NGEN radio system and Emergency Communications Department (ECD) dispatch services support all fire districts serving unincorporated Monterey County. This interpretation is not accurate.

Appendix B identifies fourteen fire districts serving unincorporated Monterey County. Of those, seven operate on the NGEN radio system and receive dispatch services from ECD pursuant to the Agreement for 9-1-1 Emergency Communications Services and Governance, while the remaining seven operate on the CalFire radio system with CalFire dispatch services.

See Table C, "Fire Districts Covering Unincorporated Areas of Monterey County," which identifies fire districts served by the NGEN system versus those operating under CalFire.

## **4. Clarification of Emergency Communications Department Dispatch Services Scope**

The statement on page 6 that the County Consolidated Dispatch Center (9-1-1) serves as a single communications center for all cities and unincorporated areas is not accurate.

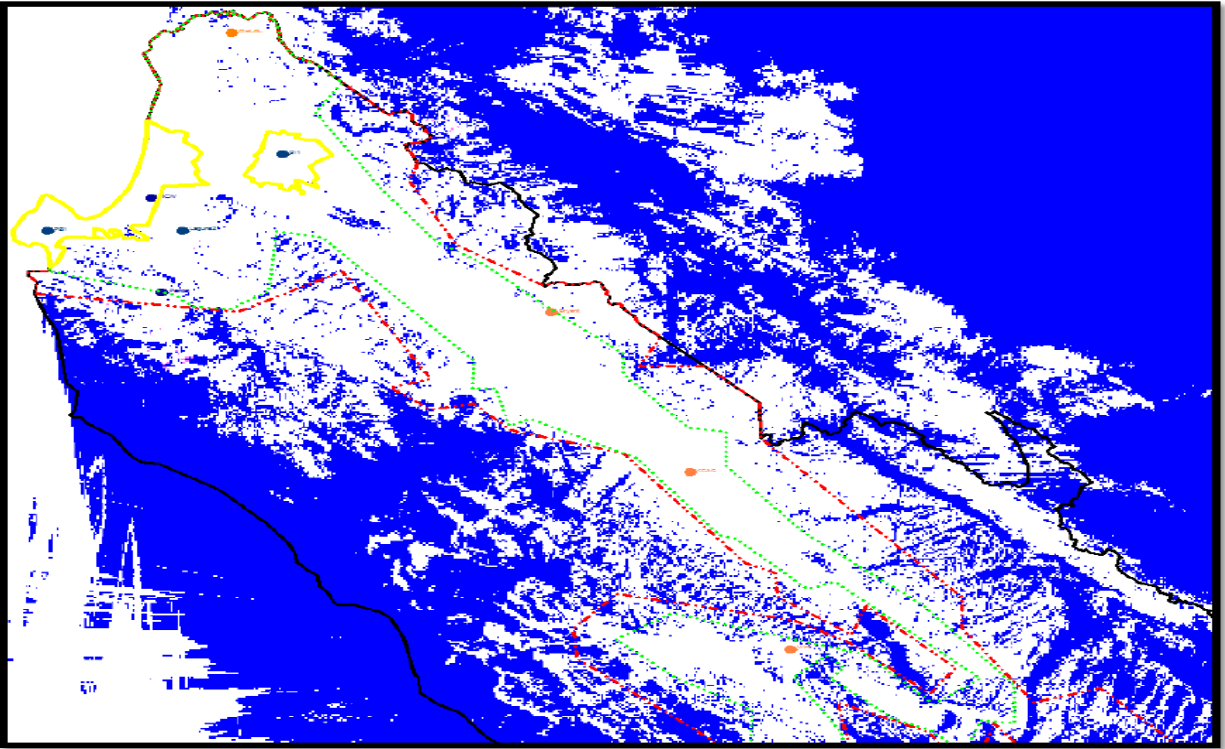
Emergency Communications Department dispatch services are provided pursuant to the Agreement for 9-1-1 Emergency Communications Services and Governance. ECD provides 9-1-1 call answering, dispatching, and related emergency communications services to agencies that are parties to that agreement. ECD does not serve as the dispatch center for all public safety agencies, cities, fire districts, or unincorporated areas within Monterey County.

## **5. Coverage Calculation Methodology**

The coverage calculation methodology used the Raptor RF propagation modeling platform, an industry-standard tool in public safety communications engineering. This allowed County staff and stakeholders to visualize and analyze where radio signals are expected to provide reliable coverage within the jurisdictional boundaries of NGEN member agencies using Geographic Information System (GIS) data. Accurate coverage modeling is critical to identifying potential communication gaps and supports informed decisions regarding future radio system improvements.

Percent coverage was calculated by dividing the modeled coverage acreage by jurisdiction acreage. Population coverage was estimated using Esri's Enrich tool, based on 2025 population estimates (436,491), and calculated as population within the modeled coverage area divided by jurisdiction population.

Figure 1. NGEN Digital Project Boundary



Legend

- Red – mobile
- Green - portable
- Yellow - inbuilding

**Table A-1. NGEN Member Agency Mobile Radio Coverage**

<b>Name</b>	<b>Digital Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Analog Fire Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Digital and Analog Fire Combined Radio Area Percent Coverage (&lt; -95dBm)</b>
City of Carmel-by-the-Sea	99.99%	98.86%	99.99%
City of Del Rey Oaks	99.44%	99.97%	100.00%
City of Gonzales	100.00%	100.00%	100.00%
City of Greenfield	100.00%	100.00%	100.00%
City of King	100.00%	100.00%	100.00%
City of Marina	98.71%	98.71%	98.71%
City of Monterey	98.82%	98.83%	98.86%
City of Pacific Grove	99.12%	99.12%	99.12%
City of Salinas	100.00%	100.00%	100.00%
City of Sand City	100.00%	100.00%	100.00%
City of Seaside	99.93%	99.93%	99.93%
City of Soledad	99.89%	97.53%	100.00%
Unincorporated County (Excluding Cities and Federal Property)	66.96%	84.28%	85.71%
Big Sur Volunteer Fire Brigade	3.71%	54.57%	55.04%
Mid-coast Volunteer Fire Brigade	20.76%	74.68%	76.18%
Monterey County Regional Fire Protection District	93.33%	96.93%	97.92%
North County Fire Protection District	97.39%	99.59%	99.71%
California State University Monterey Bay	100.00%	100.00%	100.00%
Monterey Peninsula Airport District	99.46%	99.11%	99.70%
<b>County of Monterey NGEN Operational Area</b>	63.70%	82.36%	83.69%

**Table A-2. NGEN Member Agency Portable Radio Coverage**

<b>Name</b>	<b>Digital Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Analog Fire Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Digital and Analog Fire Combined Radio Area Percent Coverage (&lt; -95dBm)</b>
City of Carmel-by-the-Sea	99.96%	79.85%	99.98%
City of Del Rey Oaks	75.16%	94.04%	98.08%
City of Gonzales	97.59%	78.11%	98.14%
City of Greenfield	98.28%	99.16%	99.96%
City of King	99.19%	99.01%	99.89%
City of Marina	99.14%	97.69%	99.72%
City of Monterey	98.43%	98.22%	99.85%
City of Pacific Grove	98.97%	90.62%	99.83%
City of Salinas	99.82%	98.38%	100.00%
City of Sand City	98.15%	94.12%	99.93%
City of Seaside	99.19%	93.89%	99.78%
City of Soledad	99.33%	74.44%	99.88%
Unincorporated County (Excluding Cities and Federal Property)	51.27%	66.66%	70.00%
Big Sur Volunteer Fire Brigade	2.59%	32.21%	32.79%
Mid-coast Volunteer Fire Brigade	6.16%	47.50%	48.06%
Monterey County Regional Fire Protection District	81.82%	88.01%	91.75%
North County Fire Protection District	86.48%	93.27%	96.12%
California State University Monterey Bay	100.00%	100.00%	100.00%
Monterey Peninsula Airport District	94.78%	91.47%	97.79%
<b>County of Monterey NGEN Operational Area</b>	<b>49.41%</b>	<b>64.81%</b>	<b>68.03%</b>

**Table B-1. NGEN Unincorporated Fire Districts Mobile Radio Coverage**

<b>Name</b>	<b>Digital Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Analog Fire Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Digital and Analog Fire Combined Radio Area Percent Coverage (&lt; -95dBm)</b>
Big Sur Volunteer Fire Brigade	3.71%	54.57%	55.04%
Gonzales Rural Fire Protection District	99.98%	99.98%	100.00%
Greenfield Fire Protection District	95.11%	97.71%	98.56%
Mid-coast Volunteer Fire Brigade	20.76%	74.68%	76.18%
Monterey County Regional Fire Protection District	93.33%	96.93%	97.92%
Monterey Peninsula Airport District	99.46%	99.11%	99.70%
North County Fire Protection District	97.39%	99.59%	99.71%
<b>Unincorporated NGEN Fire Districts</b>	<b>68.04%</b>	<b>85.53%</b>	<b>86.21%</b>

**Table B-2. NGEN Unincorporated Fire Districts Portable Radio Coverage**

<b>Name</b>	<b>Digital Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Analog Fire Radio Area Percent Coverage (&lt; -95dBm)</b>	<b>Digital and Analog Fire Combined Radio Area Percent Coverage (&lt; -95dBm)</b>
Big Sur Volunteer Fire Brigade	2.59%	32.21%	32.79%
Gonzales Rural Fire Protection District	92.40%	99.21%	99.95%
Greenfield Fire Protection District	83.47%	88.92%	91.66%
Mid-coast Volunteer Fire Brigade	6.16%	47.50%	48.06%
Monterey County Regional Fire Protection District	81.82%	88.01%	91.75%
Monterey Peninsula Airport District	94.78%	91.47%	97.79%
North County Fire Protection District	86.48%	93.27%	96.12%
<b>Unincorporated NGEN Fire Districts</b>	<b>59.79%</b>	<b>73.18%</b>	<b>75.77%</b>

**Table C. Fire Districts Covering Unincorporated Area of Monterey County**

<b>Fire Protection District Name</b>	<b>Emergency radio coverage served by NGEN and dispatched by ECD pursuant to the 9-1-1 Services Agreement</b>	<b>Emergency radio coverage served by CalFire and dispatched by CalFire</b>
Monterey Peninsula Airport District	x	
Aromas Tri-County Fire Protection District		x
Cachagua Fire Protection District		x
Carmel Highlands Fire Protection District		x
Cypress Fire Protection District		x
Gonzales Rural Fire Protection District	x	
Greenfield Fire Protection District	x	
Mission-Soledad Rural Fire Protection District		x
North County Fire Protection District	x	
Monterey County Regional Fire Protection District	x	
South Monterey County Fire Protection District		x
Big Sur Volunteer Fire Brigade	x	
Mid-coast Volunteer Fire Brigade	x	
Pebble Beach Community Service District		x

**Recommendation (R1):** The Monterey County Board of Supervisors (BOS) direct NGEN Executive Committee, in coordination with County ITD, to develop and submit a countywide implementation plan identifying the specific equipment upgrades, infrastructure needs, estimated costs, and timelines required to reduce or eliminate identified emergency communication dead zones by December 31, 2026.

**Response to R1:**

The Board agrees with the recommendation. The recommendation is currently being evaluated for implementation in accordance with operational needs and fiscal requirements. An implementation plan will be submitted to the NGEN boards for approval by December 31, 2026.

**1. Known NGEN Coverage Deficiencies**

**1.1 Countywide In-Building Coverage Deficiencies**

The primary in-building coverage concerns are associated with NGEN digital radio coverage. In-building coverage was not included in the original NGEN project scope or coverage guarantees, except for within the specific City of Salinas boundary and the specific Monterey Peninsula boundary. NGEN member agencies in coordination with ITD have been addressing identified in-building coverage issues using agency funding.

**1.2 Outdoor Coverage Deficiencies**

The following areas have been identified as having NGEN digital coverage deficiencies:

- Big Sur area
- Portions of County unincorporated areas
  - Bitterwater and Highway 25 Corridor
  - Bryson
  - Carmel Valley Village
  - Greenfield Green Bridge area
  - King City
  - Pajaro
  - Prunedale
  - San Ardo Oil Field
  - San Benancio
- North Salinas includes Bolsa Knolls.

**2. Ongoing Coverage Improvement Efforts**

Improving NGEN digital radio coverage remains a priority for the NGEN Boards and ITD. ITD continues to work collaboratively with participating public safety agencies and the NGEN Boards to improve radio coverage, reliability, and interoperability throughout the NGEN service area.

In 2020, the Monterey County Sheriff's Office, in coordination with ITD and with Board approval, began replacing legacy radios with Motorola APX NEXT radios to support future Long-Term Evolution (LTE) integration capabilities and improve operational flexibility. LTE is a wireless broadband communications standard that enables high-speed data transmission for mobile

devices and data terminals. The project represented an approximately \$2.5 million investment for 350 radios.

The Monterey County Sheriff's Office and ITD also evaluated implementation of Motorola SmartConnect technology, which integrates traditional land mobile radio (LMR) systems with LTE broadband networks. However, implementation was not pursued due to funding limitations.

Beginning in 2023, ITD initiated discussions with the NGEN Boards regarding implementation of Motorola SmartConnect technology. Preliminary analysis indicates the technology could significantly improve portable and in-building radio coverage in areas where traditional radio coverage is limited.

In February 2024, ITD worked collaboratively with the NGEN Boards, established a NGEN capital fee schedule and developed a five-year capital improvement plan to support long-term system sustainability and future coverage enhancement projects.

In June 2024, a new NGEN radio site at Glen Devon serving the Mid-coast Volunteer Fire Brigade was added to the NGEN analog system, utilizing Starlink for backhaul connectivity.

In November 2025, a new NGEN radio site at Carmel Lobos Ridge was added to both the NGEN digital and analog systems through a Homeland Security grant secured by the Carmel Police Department. The site improved radio coverage in the Carmel Highlands area.

The Greenfield NGEN site project, funded through a grant received by the City of Greenfield, is currently under development and is expected to improve radio coverage in the South County area upon completion in 2027.

### **3. Planned Coverage Improvement Actions**

ITD has completed a survey of all NGEN member agencies regarding identified coverage deficiency areas. ITD will develop and submit an implementation plan identifying equipment upgrades, infrastructure needs, estimated costs, and implementation timelines necessary to reduce or mitigate identified emergency communication dead zones.

ITD will present coverage improvement options to the NGEN Boards, including traditional land mobile radio (LMR) expansion approaches, such as construction of additional radio sites in underserved areas, as well as LTE-integrated solutions.

Upon completion of project analysis and cost estimates, recommendations will be presented to the NGEN Boards for consideration and approval. At that time, the NGEN Boards will determine funding appropriations and follow the appropriate budget and procurement processes necessary to implement approved projects.

ITD will continue coordinating with participating agencies to evaluate operational needs, radio lifecycle replacement planning, funding impacts, and long-term interoperability objectives as the County continues modernization of the NGEN system.

**Finding (F2):** Some fire districts reported limited financial capacity to purchase and maintain radios capable of operating across all communication modes supported by the County's emergency communication infrastructure, which compromises their ability to coordinate services with other agencies.

**Response to F2:**

The Board agrees with the findings.

**Recommendation (R2):** The BOS direct the ITD to develop a feasibility analysis identifying available funding options to support fire district radio equipment upgrades and emergency communication infrastructure in unincorporated areas by March 31, 2027.

**Response to R2:**

The Board partially disagrees with the recommendation. The recommendation requires further analysis regarding governance responsibilities, operational impacts, and funding considerations under the NGEN Agreement. The NGEN Executive Board, in coordination with County ITD, will evaluate the recommendation and may develop a feasibility analysis to identify potential funding options for fire district radio equipment upgrades and emergency communications infrastructure improvements within unincorporated areas. This analysis will be completed by March 31, 2027.

Under the NGEN Agreement, the NGEN Executive Board and Operations Board, in coordination with County ITD, are responsible for reviewing and recommending matters affecting the cost, scope, operational requirements, and capital improvements of the NGEN public safety radio system.

ITD operates, maintains, and manages the shared NGEN infrastructure system, including telecommunications sites, transmission systems, and related infrastructure supporting NGEN public safety communications services, and supports the NGEN Boards in developing operational procedures for participating agencies.

Radio equipment used by participating agencies, including portable radios, mobile radios, dispatch consoles, network management terminals, and encryption key management equipment ("subscriber equipment"), is the responsibility of each agency, including procurement, operation, maintenance, and lifecycle management under ITD system standards.

**Finding (F3):** Emergency responders in Monterey County must operate across multiple radio technologies and manually adjust communication modes depending on location, increasing operational complexity and the potential for communication delays during emergencies.

**Response to F3:** The Board partially agrees with the finding. The existing system requires manual switching between digital and analog modes in certain areas where digital coverage may be limited until the NGEN analog system is fully replaced by the NGEN digital system. Full transition to a radio device that can automatically switch is limited by currently available technology.

To support continuity of communication, each digital channel and its corresponding analog channel are linked and interoperable, allowing users on either system to communicate with one another.

NGEN users operating on the digital system roam automatically between digital radio sites. Users operating on the analog system may also automatically roam between analog sites and select the strongest available frequency when radios are equipped with vote-scan functionality. Otherwise, users manually select the frequency or repeater channel that provides the best operational coverage for the area.

**Recommendation (R3):** The BOS directs the ITD to develop a framework to assist fire districts with limited financial capacity to obtain radios compatible with the County's emergency communication system by March 31, 2027.

**Response to R3:** The Board partially disagrees with the recommendation. The recommendation requires further analysis regarding governance responsibilities, operational impacts, and funding considerations under the NGEN Agreement. This analysis will be completed by March 31, 2027.

Under the NGEN Agreement, the NGEN Executive Board and Operations Board, in coordination with County ITD, are responsible for reviewing and recommending matters affecting the cost, scope, operational requirements, and capital improvements associated with the NGEN public safety radio system.

ITD is responsible for operating, maintaining, and managing the shared NGEN infrastructure system, including telecommunications sites, transmission systems, and related infrastructure supporting NGEN public safety communications services. ITD coordinates, administers, and maintains systems defined by the NGEN Boards for the benefit of member agencies, including the development of standard operating procedures.

Equipment used exclusively by individual member agencies, including portable radios, mobile radios, dispatch consoles, terminals, broadband push-to-talk devices, and encryption key management equipment ("subscriber equipment"), remains the responsibility of each participating agency. Each agency is responsible for the procurement, operation, maintenance, and lifecycle replacement of its subscriber equipment in compliance with ITD system standards and specifications.

ITD has initiated a radio standardization effort and will continue working collaboratively with participating agencies, including fire districts, and the NGEN Boards to develop subscriber equipment standards compatible with the County's emergency communications system.