September 2024

NEXT GENERATION 911

Some Federal Agencies Have Begun Planning, but Few Have Upgraded Their Call Centers

NEXT GENERATION 911

Some Federal Agencies Have Begun Planning, but Few Have Upgraded Their Call Centers

Why GAO Did This Study

Each year, millions of Americans call 911 for help during emergencies. However, the nation's 911 systems rely on aging infrastructure that is not designed to accommodate modern communications technologies. Some states, localities, and federal agencies that operate 911 call centers are upgrading to NG911, which offers benefits such as the ability to process images, audio files, and video. While deploying NG911 is the responsibility of entities that operate call centers, some federal agencies also support implementation.

House Report 117-402 includes a provision for GAO to review federal agencies' progress implementing NG911 and federal efforts to assist entities with NG911 implementation. This report examines (1) efforts by federal agencies with 911 call centers to implement NG911 and challenges associated with implementation; and (2) how federal agencies have supported state, local, and federal NG911 implementation since 2022, and the views of federal officials and stakeholders on how the federal government could further support implementation.

GAO reviewed relevant laws; information from agencies that operate 911 call centers or support others in implementing NG911; and information from public safety associations involved in 911-related efforts. GAO also interviewed federal officials from the four agencies that provide support for NG911, the 11 agencies that operate 911 call centers (including managers of five federal 911 call centers), and stakeholders from five public safety associations.

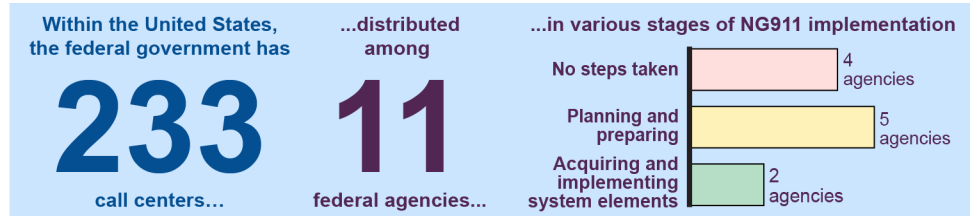View GAO-24-106783. For more information, contact Andrew Von Ah at (202) 512-2834 or vonaha@gao.gov.

What GAO Found

GAO identified 11 federal agencies that operate several hundred 911 call centers throughout the U.S. on military installations, in national parks, and in other federal facilities. According to officials, seven of the federal agencies with 911 call centers—all within the Department of Defense—have begun to plan for and implement Next Generation 911 (NG911). NG911 is an updated service intended to improve communications with callers and among call centers and first responders. With no federal requirement to implement NG911, officials from the four other agencies said they had not taken any steps to upgrade their systems. Officials from the 11 agencies cited challenges associated with implementing NG911, including funding priorities, maintaining interoperability with state and local call centers, cybersecurity risks, and increased data management responsibilities. For example, an official from one agency said the benefits of upgrading their systems may not justify the costs, and therefore NG911 was not a priority for the agency. These challenges are similar to those faced by state and local 911 call centers that GAO discussed in prior work (GAO-18-252).

General Status of Next Generation 911 (NG911) Implementation at Federal Agencies with 911 Call Centers, as of June 2024

Within the United States, the federal government has

233

call centers…

…distributed among

11

federal agencies…

…in various stages of NG911 implementation

No steps taken	4 agencies
Planning and preparing	5 agencies
Acquiring and implementing system elements	2 agencies

Source: GAO analysis of agency data and interviews with agency officials. | GAO-24-106783

Four federal agencies with roles in NG911 implementation have provided support for implementation efforts by state, local, and federal agencies and 911 call centers. Per their statutory roles, the Cybersecurity and Infrastructure Security Agency has supported NG911 implementation by conducting outreach on topics related to cybersecurity and the Federal Communications Commission has adopted rules to facilitate the transition to NG911 for various originating service providers. The National Highway Traffic Safety Administration and National Telecommunications and Information Administration have discontinued some activities related to NG911 implementation since the lapse in their authority over general 911 issues in 2022. However, both agencies have continued to provide some resources and coordination among federal and state stakeholders.

Federal officials and public safety stakeholders generally agreed that dedicated federal funding and prioritizing NG911 funding within agencies would help support NG911 implementation. Some federal officials said that incorporating NG911 planning into agency strategic planning and goals related to public safety communications could help ensure agencies take further steps toward implementation, like assessing feasibility and budgetary planning. However, federal officials and stakeholders had differing views on the usefulness and necessity of assigning an agency to lead coordination of federal efforts and to track nationwide progress in implementing NG911.

United States Government Accountability Office

Contents

Abbreviations

BIA	Bureau of Indian Affairs
Cal OES	California Office of Emergency Services
CISA	Cybersecurity and Infrastructure Security Agency
DHS	Department of Homeland Security
DLA	Defense Logistics Agency
DOD	Department of Defense
FCC	Federal Communications Commission
IP	Internet Protocol
NASA	National Aeronautics and Space Administration
NENA	National Emergency Number Association
NG911	Next Generation 911
NHTSA	National Highway Traffic Safety Administration
NIH	National Institutes of Health
NTIA	National Telecommunications and Information Administration
PFPA	Pentagon Force Protection Agency

GAO U.S. GOVERNMENT ACCOUNTABILITY OFFICE

441 G St. N.W.
Washington, DC 20548

September 19, 2024

The Honorable Brian Schatz
Chair
The Honorable Cindy Hyde-Smith
Ranking Member
Subcommittee on Transportation, Housing and Urban Development,
  and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Steve Womack
Chairman
The Honorable Mike Quigley
Ranking Member
Subcommittee on Transportation, Housing and Urban Development,
  and Related Agencies
Committee on Appropriations
House of Representatives

Each year, Americans make about 240 million calls to 911 for help during emergencies, according to the National Emergency Number Association.[1] States and localities are the primary providers of 911 services, through approximately 5,300 call centers nationwide.[2] Some federal agencies also operate 911 call centers at locations such as military installations and national parks. Traditionally, 911 call centers receive voice calls, and the nation's legacy 911 systems rely on aging infrastructure that is not designed to accommodate modern communications technologies. As a result, some states, localities, and federal agencies are working to upgrade their 911 systems to the next generation of services, commonly

---

[1]The National Emergency Number Association is a nonprofit organization focused on 911 policy, standards development, technology, operations, and education.

[2]In 2023, the National Highway Traffic Safety Administration (NHTSA) reported that the number of 911 call centers in the U.S. was about 5,300, according to data from 49 entities (46 states, two U.S. territories, and the District of Columbia). NHTSA compiled the data from its 2021 annual survey of states, the District of Columbia, and U.S. territories. In the report, four states (Mississippi, Nevada, New York, and West Virginia) and three territories (American Samoa, Northern Mariana Islands, and U.S. Virgin Islands) did not submit a response to the question about the number of call centers. See Department of Transportation, National Highway Traffic Safety Administration, *National 911 Annual Report: 2021 Data: Data from January 1- December 31, 2021* (February 2023).

known as Next Generation 911 (NG911).[3] However, there are no federal requirements to implement NG911.

NG911 systems provide benefits such as improved capabilities to communicate with callers, enhanced information-sharing among 911 call centers and first responders, and increased resiliency of 911 operations. Call centers using NG911 systems can receive voice calls and accept various forms of data of their choice, such as text messages, images, and video. Such information can facilitate the quick and accurate dispatch of emergency responders (such as police officers, firefighters, and ambulance crews) and help in situations when a 911 caller is unable to speak.[4] In the event of a disaster or technical issue at a call center using NG911, the center can forward calls to any working call center until it is operational again.

The transition to NG911 includes replacing the existing legacy 911 networks, which carry voice calls and limited data, with NG911 systems. The NG911 systems use Internet Protocol (IP)–based technology to send data from one computer to another on the internet. The migration to NG911 is occurring gradually and progress varies widely, as state, local, and federal authorities determine how to start or complete their own transition from legacy systems and make choices about capabilities to implement.

The Next Generation 911 Advancement Act of 2012 (2012 act) outlined federal agencies' roles and responsibilities related to assisting states and localities in the transition to NG911.[5] Principally, the 2012 act required the National Highway Traffic Safety Administration (NHTSA) within the Department of Transportation, and the National Telecommunications and Information Administration (NTIA) within the Department of Commerce, to

---

[3]In 2018, we reported on (1) state and local progress and challenges in implementing NG911, and (2) federal actions to address challenges and planned next steps. At that time, we noted that federal agencies may operate 911 call centers but did not include them in the scope of our review due, in part, to the limited information available about them. GAO, *Next Generation 911: National 911 Program Could Strengthen Efforts to Assist States,* GAO-18-252 (Washington, D.C.: Jan. 31, 2018).

[4]According to consumer groups, other benefits of NG911 are enhanced communications options and accessibility to emergency services for individuals in the deaf and hard-of-hearing community, who may use alternatives to traditional telephones for communication.

[5]The Next Generation 911 Advancement Act of 2012, Pub. L. No. 112-96, §§ 6503, 6508-6509, 126 Stat. 237, 237-41, 44-45 (2012).

create the Implementation Coordination Office.[6] According to the 2012 act, this office was to improve coordination and communication among federal, state, and local stakeholders on 911 services and provide grants for NG911 implementation, among other activities. In 2022, the authority of NHTSA and NTIA over general 911 issues as part of the Implementation Coordination Office lapsed, leaving NG911 without federal agencies tasked with coordination, grant-making, and other efforts.

The Cybersecurity and Infrastructure Security Agency (CISA) within the Department of Homeland Security (DHS), and the Federal Communications Commission (FCC), also facilitate NG911 implementation through their roles in cybersecurity and industry regulation. Although some of their activities have concluded, DHS and FCC continue to have roles in supporting NG911.[7]

The report accompanying the Departments of Transportation, and Housing and Urban Development, and Related Agencies 2023 Appropriations Bill includes a provision for us to review federal agencies' progress implementing NG911 and efforts to assist state, local, and federal entities with NG911 implementation.[8]

This report examines (1) efforts by federal agencies with 911 call centers to implement NG911 and challenges associated with implementation; and (2) how federal agencies have supported state, local, and federal NG911 implementation since 2022, and the views of federal officials and stakeholders on how the federal government could further support national NG911 implementation.

---

[6]The 2012 act required NHTSA and NTIA to establish a 911 Implementation Coordination Office with responsibilities for (1) taking actions to improve coordination and communication with respect to the implementation of 911 services; (2) developing, collecting, and disseminating information concerning practices, procedures, and technology used in the implementation of 911 services; and (3) providing grants to eligible entities for NG911 implementation. Pub. L. No. 112-96, § 6503, 126 Stat. 237, 237-41 (2012).

[7]The 2012 act required FCC to provide recommendations to Congress on the legal and statutory framework needed for the NG911 transition, in coordination with NHTSA, NTIA, and DHS. The 2012 act also required the Implementation Coordination Office to coordinate with DHS and FCC to prepare and submit a study to Congress of the cost to implement NG911. FCC submitted the report to Congress in February 2013, and the Implementation Coordination Office submitted the cost study in October 2018.

[8]H.R. Rep. No. 117-402, at 62 (2022).

To identify the federal agencies with 911 call centers, we reviewed NHTSA, DHS, and FCC reports, as well as documents from public safety associations, such as the National Association of State 911 Administrators, the National Emergency Number Association, and the Association of Public-Safety Communications Officials. We interviewed officials from NHTSA, NTIA, DHS, and FCC, as well as representatives of the public safety associations.

To examine the status of federal agencies' NG911 implementation and the related challenges, we reviewed available documents and interviewed officials from federal agencies that we identified as having call centers, and other relevant agencies such as CISA. We also interviewed call center managers and state 911 authorities from a non-generalizable sample of five call centers about efforts to implement NG911. We selected these call centers as illustrative examples to obtain a mix of call centers from different agencies and states, and at different stages of NG911 implementation.

To examine how federal agencies have supported national NG911 implementation and could provide additional support, we reviewed relevant statutes and FCC regulations to identify the NG911-related roles of federal government agencies. We reviewed documents and interviewed officials from NHTSA, NTIA, CISA, and FCC about their current efforts to support NG911 implementation, and about how their efforts have changed since the Implementation Coordination Office's lapse in authority over general 911 issues in 2022. We also interviewed these officials, federal officials from agencies that operate 911 call centers, and representatives of five public safety associations about their views on additional steps the federal government could take to support NG911 implementation. For further information on our objectives, scope, and methodology, see appendix I.

We conducted this performance audit from April 2023 to September 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Evolution and Communications Process of 911 Services

As we have previously reported, 911 services have evolved from basic 911, which provided Americans with a universally recognized emergency number, to Enhanced 911, which also routes calls to the appropriate call center and provides information about the caller's location and a call-back number.[9] NG911 represents the next step in the evolution of 911 services by using IP-based technology to deliver and process 911 traffic. Under NG911, call centers will continue to receive voice calls and location information but will also be able to accommodate emergency communications from the range of technologies in use today. In addition, NG911 systems enhance call centers' capabilities to route and transfer calls and data, which could better enable them to handle overflow calls and increase information-sharing with first responders.

Most 911 communications begin when a caller dials 911 using a landline, wireless device, or interconnected Voice over Internet Protocol system.[10] A communications entity, such as a service provider, then receives and routes the call to the appropriate call center, along with the caller's phone number and location (i.e., street address for a landline caller, approximate geographic location for a mobile wireless caller, or subscriber's registered address for an interconnected Voice over Internet Protocol caller).[11] The communications entity may route calls and data to 911 call centers using legacy methods (i.e., routing calls across traditional telephone networks) or NG911 methods (i.e., routing calls and other data through IP networks). Once the call reaches a call center, call takers and dispatchers determine the nature of the emergency and dispatch first responders,
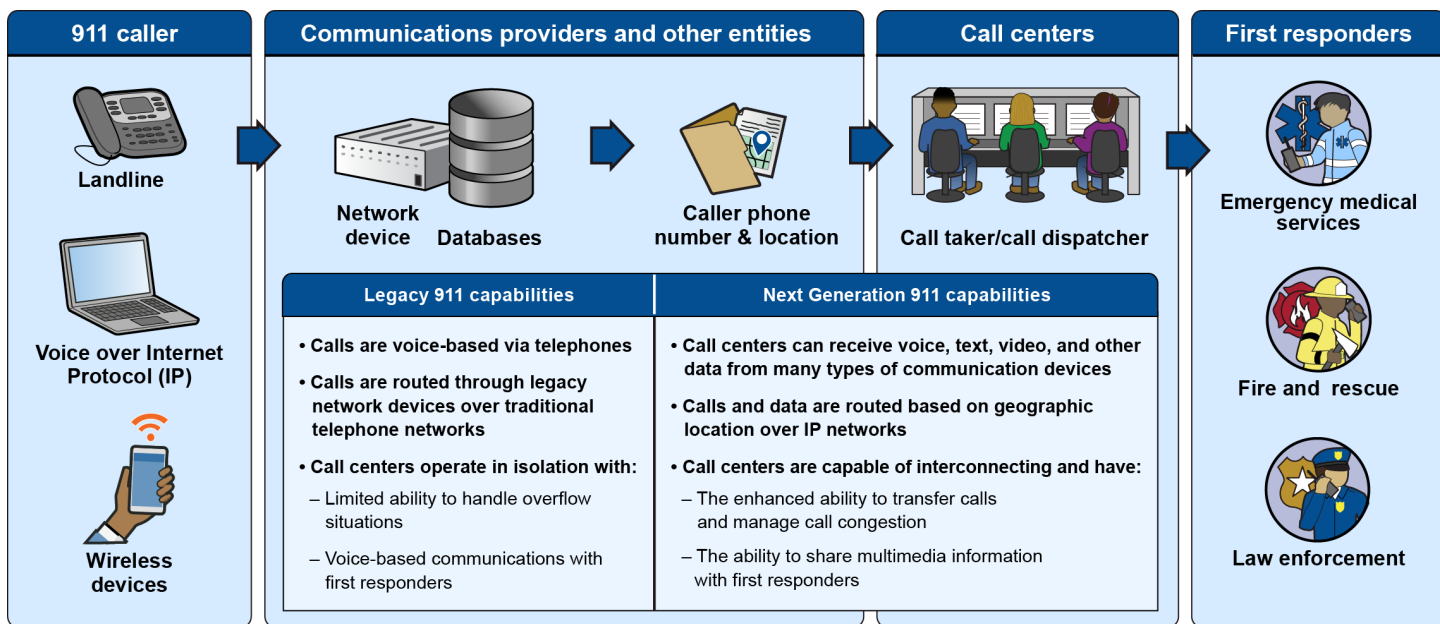
---

[9]See GAO-18-252 and GAO, *911 Services: Most States Used 911 Funds for Intended Purposes, but FCC Could Improve Its Reporting on States' Use of Funds*, GAO-13-376 (Washington, D.C.: Apr. 18, 2013).

[10]Voice over Internet Protocol is the routing of voice conversations over the internet or any other IP network. For example, the phone feature of Microsoft Teams uses Voice over Internet Protocol.

[11]According to FCC, the architecture of 911 networks, both legacy and NG911, can include multiple entities, each providing one or more links in a chain of connectivity. These entities include several distinct types of communications entities, including originating service providers; incumbent local exchange carriers; 911 system service providers; subcontractors and vendors that provide additional 911 technical capabilities; and 911 call centers and emergency authorities themselves, to the extent that they provide 911 network components. See 911 Governance and Accountability, Improving 911 Reliability, 80 Fed. Reg. 3191, 3201 (Jan. 22, 2015).

typically using a variety of equipment and systems, including call-handling systems, mapping programs, and computer-aided dispatch (fig. 1).

Figure 1: Overview of 911 Communications and Dispatch Process

911 caller	Communications providers and other entities		Call centers	First responders
Landline	Network device Databases	Caller phone number & location	Call taker/call dispatcher	Emergency medical services
Voice over Internet Protocol (IP)				Fire and rescue
Wireless devices				Law enforcement

Legacy 911 capabilities	Next Generation 911 capabilities
• Calls are voice-based via telephones	• Call centers can receive voice, text, video, and other data from many types of communication devices
• Calls are routed through legacy network devices over traditional telephone networks	• Calls and data are routed based on geographic location over IP networks
• Call centers operate in isolation with:	• Call centers are capable of interconnecting and have:
– Limited ability to handle overflow situations	– The enhanced ability to transfer calls and manage call congestion
– Voice-based communications with first responders	– The ability to share multimedia information with first responders

Source: GAO analysis of agency and public safety association documents; GAO (icons). | GAO-24-106783

State and Local Roles Related to NG911

In general, funding, operating, and maintaining state and local 911 systems are the responsibilities of state and local 911 authorities. However, the federal government has occasionally provided grant funding to support 911 upgrades.[12] As we have previously reported, all 50 states and the District of Columbia collect—or have allowed local entities to collect—funding for 911 from telephone service subscribers. The methods within each state for collecting funds vary.[13] For example, we reported that some states collect fees or charges for 911 and administer a

[12]In 2009, NTIA and NHTSA awarded approximately $40 million in grants to 30 recipients to help 911 call centers nationwide upgrade equipment and operations through the E-911 Grant Program authorized by the Ensuring Needed Help Arrives Near Callers Employing 911 Act, Pub. L. No. 108-494, § 104, 118 Stat. 3986, 3987-90 (2004). In 2019, NTIA and NHTSA awarded approximately $109 million to 36 recipients through the 911 Grant Program authorized by the Next Generation 911 Advancement Act of 2012, Pub. L. No. 112-96, § 6503, 126 Stat. 237, 237-41 (2012).

[13]GAO-18-252 and GAO-13-376. This information is based on our prior audit work, and GAO did not conduct a separate legal analysis.

GAO-24-106783 NG911 Implementation

statewide 911 program. Other states allow local entities to collect fees or charges for 911 and administer 911 programs at the local level. Still other states use a combination of these approaches.

According to information provided by the National Association of State 911 Administrators and NHTSA, state and local governance structures that oversee 911 operations also vary by location. For example, some state and territorial 911 authorities operate the 911 call centers themselves.[14] Other states fund and manage the 911 system network and assist in funding local entities that operate 911 call centers. Other states may have a more limited role, and local entities in those states may fund, administer, or operate 911 call centers themselves.

NG911 System Elements and Implementation

As illustrated in figure 1, NG911 systems use IP networks capable of carrying voice calls plus large amounts of data. These emergency-services networks are typically deployed at the state or regional level, with multiple call centers connecting to the network. However, the existence of an IP network alone does not constitute an NG911 system. As defined by standards developed by the emergency communications community, NG911 is an IP-based, open-standards system comprising hardware, software, data, and operational policies and procedures.[15] This system

- provides standardized interfaces from emergency call and message services to support emergency communications;

- processes all types of emergency communications, including calls, voice, text, data, and multimedia information;

- acquires and integrates additional emergency call data useful to call routing and handling;
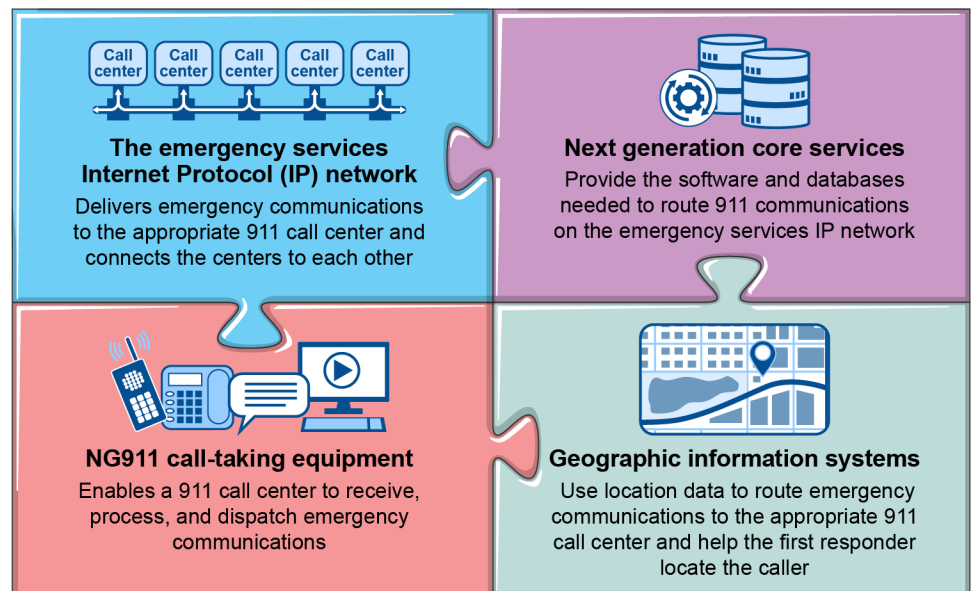
---

[14]National Association of State 911 Administrators and U.S. Department of Transportation, National Highway Traffic Safety Administration, Office of Emergency Medical Services, National 911 Program, *State and Territory 911 Authority Structures* (August 2020).

[15]Open standards are non-proprietary standards available for anyone to use. The National Emergency Number Association (NENA), with other public safety professionals, developed the i3 standard for NG911 systems. The i3 standard provides a baseline of the specifications for the set of software, databases, networks, and interfaces needed to process multi-media emergency calls and data for NG911. The standard's specifications are also designed to provide interoperability among systems. See, NENA 911 Core Services Committee, i3 Architecture Working Group, *NENA i3 Standard for Next Generation 9-1-1*, NENA-STA-010.3e-2021 (Alexandria, VA: Oct. 7, 2021).

- delivers the emergency calls, messages, and data to the appropriate 911 call center and other appropriate emergency entities based on the location of the caller;

- supports data, video, and other communications needs for coordinated incident response and management; and

- interoperates with other 911 systems, services, and networks used by first responders to facilitate emergency response.[16]

A complete NG911 system is built on four major building blocks (fig. 2).

Figure 2: Next Generation 911 (NG911) Building Blocks

The emergency services Internet Protocol (IP) network
Delivers emergency communications to the appropriate 911 call center and connects the centers to each other

Next generation core services
Provide the software and databases needed to route 911 communications on the emergency services IP network

NG911 call-taking equipment
Enables a 911 call center to receive, process, and dispatch emergency communications

Geographic information systems
Use location data to route emergency communications to the appropriate 911 call center and help the first responder locate the caller

Source: GAO analysis of 911.gov information; GAO (illustration and icons). | GAO-24-106783

NG911 systems must possess certain capabilities, such as interoperating with services and networks used by first responders. However, states,

---

[16]See NHTSA, *Next Generation 911 (NG911) Roadmap Progress Report* (Washington, D.C.: February 2022). FCC recently adopted the following definition of NG911: an IP-based system that (1) ensures interoperability; (2) is secure; (3) employs commonly accepted standards; (4) enables emergency communications centers to receive, process, and analyze all types of 911 requests for emergency assistance; (5) acquires and integrates additional information useful to handling 911 requests for emergency assistance; and (6) supports sharing information related to 911 requests for emergency assistance among emergency communications centers and emergency response providers. See FCC, *Facilitating Implementation of Next Generation 911 Services (NG911),* PS Docket Nos. 21-479 and 18-64, Report and Order, FCC 24-78 at 108 (July 19, 2024). https

localities, and federal agencies with 911 call centers may make decisions about which NG911 capabilities they intend to use to best meet their needs and when to add the capabilities. These various entities may make different decisions about which NG911 equipment, systems, and vendors to use as well. Thus, the capabilities, implementation timelines, and configurations of these NG911 systems may vary.

According to an FCC advisory body, NG911 implementation occurs in the following stages:[17]

- **Legacy stage.** The 911 call center agency has not conducted any activities to transition to NG911.

- **Foundational stage.** The 911 call center or state agency is planning and preparing for NG911 implementation, such as conducting feasibility studies. NG911 systems are not yet operational.

- **Transitional stage.** The 911 call center's services have migrated partially from the legacy environment and are enabled by an IP infrastructure. The call center or state agency is acquiring, testing, and implementing NG911 system elements. For example, a call center could be testing location-based call routing and processing multimedia.

- **Intermediate stage.** The 911 call center or state agency has installed all major building blocks for NG911, and the 911 system has met the technical standards to be NG911-ready. Additionally, new governance policies for NG911 have been put in place.

- **Jurisdictional end stage.** All 911 call centers within a jurisdiction are NG911-compliant and interoperable.[18]

- **National end stage.** All 911 agencies and call centers in the nation are fully NG911-compliant and interoperable.

The activities in some of these stages may take place concurrently. In addition, the implementation of NG911 generally involves using both the legacy system and the NG911 system simultaneously for a period of time,

---

[17]See FCC, Task Force on Optimal Public Safety Answering Point Architecture, *Working Group 2 Phase II Supplemental Report: NG9-1-1 Readiness Scorecard* (Dec. 2, 2016). The Task Force on Optimal Public Safety Answering Point Architecture is an FCC advisory body that was directed to study and report findings and recommendations on 911 call center improvements.

[18]A jurisdiction can refer to a local, regional, or statewide agency.

to ensure 911 services are not disrupted as new system elements are tested and implemented.

Some Federal Agencies Have Begun Planning for NG911 and Cited Implementation Challenges

Department of Defense (DOD), Interior, and Two Other Federal Agencies Have 911 Call Centers

We identified 11 federal agencies or components of agencies that operate 911 call centers in the continental United States, Hawaii, the District of Columbia, and U.S. territories (table 1).[19]

Table 1: Federal Agencies with 911 Call Centers, as of June 2024

Federal agency	Number of 911 call centers in the United States[a]
Department of Defense	**178**
Air Force[b]	110
Army	38
Defense Logistics Agency	4
Marine Corps	11
Navy	7
Pentagon Force Protection Agency	2
Space Force	6
Department of Health and Human Services	**1**
National Institutes of Health	1
Department of the Interior	**42**
Bureau of Indian Affairs	1

[19]Some federal agencies operate call centers at their overseas installations. For consistency with our previous reports about the NG911 efforts of state and local call centers, we chose not to include overseas call centers in our review. The Department of Defense uses the term "component" to refer to its military departments, services, and defense agencies, including the Air Force, the Army, the Defense Logistics Agency, the Marine Corps, the Navy, the Pentagon Force Protection Agency, and the Space Force. For the purposes of the remainder of this report, we generally use the term "agency" to refer to these and other executive branch department components.

| Federal agency	Number of 911 call centers in the United States[a]
National Park Service	41
National Aeronautics and Space Administration	**12**
Total number of federal 911 call centers	**233**

Source: GAO analysis of agency data. | GAO-24-106783

[a]These call centers are located in the continental United States, Hawaii, the District of Columbia, and U.S. territories.

[b]The Air Force's call centers include those located on Air National Guard and Air Force Reserve bases.

Collectively, these federal agencies operate 233 such call centers at various locations, such as military installations and national parks, across the country (fig. 3).

Figure 3: Location of Federal Agencies' 911 U.S. Call Centers, as of June 2024
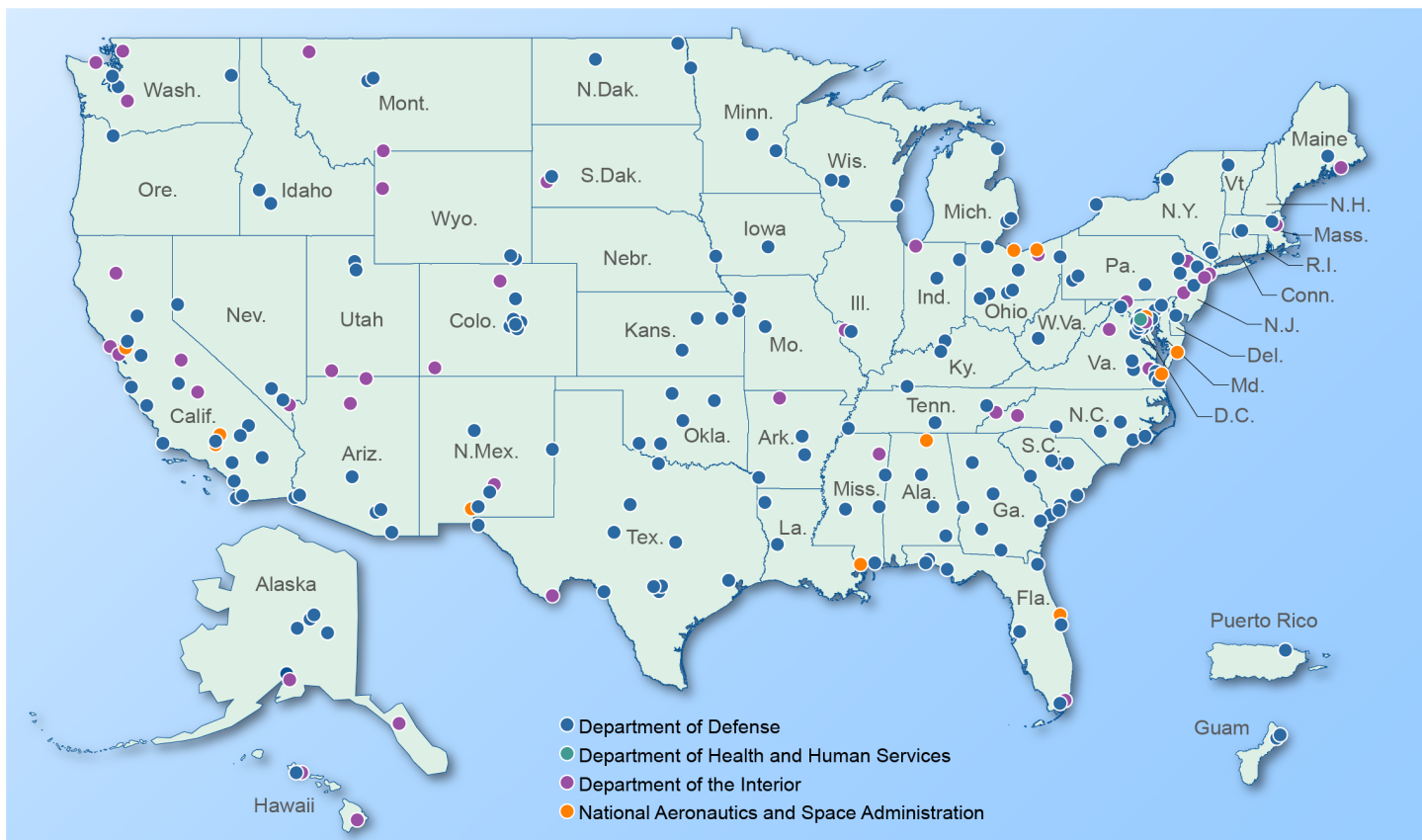
Source: GAO analysis of agency information; GAO (map). | GAO-24-106783

The federal call centers we identified receive 911 calls directly from people located on federal property, by transfer from neighboring call centers, or both.[20] Some federal call centers are not equipped to receive mobile wireless (cellular) 911 calls; in these situations, 911 calls are transferred to the federal call center by a neighboring state or local call center. Like at state and local call centers, the staff who take calls at federal call centers answer the 911 call, process the information, and dispatch appropriate first responders depending on the situation.

Federal 911 call centers vary in size and in the number of calls they handle. According to officials from 10 of the 11 agencies that operate call centers, about two-thirds of the call centers are staffed by one to three call takers, and about one-third are staffed by four to 20 call takers. Some of the agencies do not track the number of 911 calls they receive annually. The seven agencies that provided us with data reported a range in the number of 911 calls they typically receive in a 12-month period— from 325 (National Institutes of Health) to 272,000 (Navy).

DOD Agencies with 911 Call Centers Have Begun Planning for NG911, but Other Federal Agencies Have Not Done So

Of the 11 federal agencies with 911 call centers, none had fully implemented NG911 at the time of our review, as shown in figure 4. Officials from four of the agencies told us their call centers are at the legacy stage, indicating that they have not taken steps toward NG911 implementation for reasons discussed below.[21] Officials from seven agencies—all of which are components within DOD—said their call centers have taken steps toward NG911 implementation.

---

[20]To best reflect conditions associated with state and local 911 call centers implementing NG911, we counted agencies that operated call centers that either received 911 calls directly or by transfer from state and local call centers. Some federal agencies also operate call centers that perform other functions (e.g., dispatch emergency responders), but do not receive 911 calls. We did not include these agencies and call centers in our scope.

[21]Agency officials provided call center data and told us the stage of their NG911 implementation. In some cases, officials noted that some of their call centers were in different stages of implementation. For example, officials from three agencies (the Marine Corps, the National Park Service, and the National Aeronautics and Space Administration (NASA)) said a few of their call centers were equipped with more advanced 911 equipment than the others, even though their overall assessment of progress was foundational or legacy. None of the call centers were fully NG911 operational.

Figure 4: Number of Call Centers and Status of Next Generation 911 (NG911) Implementation at Federal Agencies with 911 Call Centers, as of June 2024
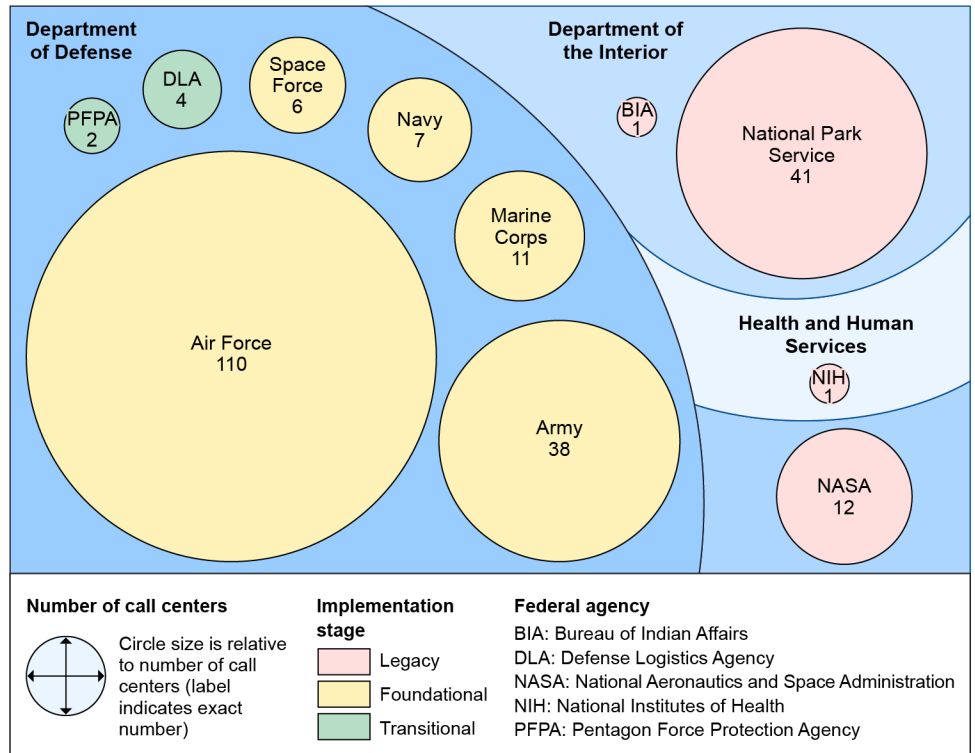
Source: GAO analysis of agency data and interviews with agency officials. | GAO-24-106783

Note: Legacy, foundational, and transitional are three early stages of NG911 implementation. In the legacy stage, 911 call centers have not taken steps toward NG911. In the foundational stage, 911 call centers are beginning to plan and prepare for NG911. In the transitional stage, 911 call centers are acquiring, testing, and implementing NG911 systems.

According to agency officials, five of the seven DOD agencies that have taken steps toward NG911 implementation—the Air Force, the Army, the Marine Corps, the Navy, and the Space Force—are in the foundational stage (i.e., planning and preparing) of the transition process. Army and Marine Corps officials said their agencies have assigned oversight responsibilities to governing bodies, developed implementation plans and time frames, and identified costs and funding sources. For example, Army officials said they incorporated NG911 into a comprehensive plan to

    GAO-24-106783 NG911 Implementation

update base emergency communications systems.[22] The officials said their goal was to implement NG911 infrastructure and modernize their 38 call centers from fiscal years 2025 through 2030, although the specific end date depends on whether the project is allocated funding. Air Force officials said they have developed an NG911 program proposal and equipped some call centers with NG911-ready equipment. Navy officials said they are using an analysis of alternatives to prepare for implementation and plan to install recently purchased call-handling software.

The other two DOD agencies—the Defense Logistics Agency and the Pentagon Force Protection Agency—are in the transitional stage (i.e., acquiring, testing, and implementing systems) of NG911 implementation.[23] Officials said these agencies have begun acquiring NG911-ready equipment, but that more actions are needed—such as upgrading infrastructure and testing network connections—before the call centers are NG911 operational.

Among call centers within federal agencies, progress toward NG911 implementation varies. According to officials, the reasons for variable progress include:

- **The initiative of local managers.** Officials from four agencies said their local call center managers were responsible for making decisions about whether and when to implement NG911, rather than officials higher in the organizational structure. Some local managers may decide to replace old 911 systems with ones that are "NG911 ready" as part of their equipment modernization program. For example, Air Force officials said that despite not having a plan to implement NG911, some base managers have chosen to replace 911 systems with NG911 equipment when funding was available. While the equipment's NG911 features may be turned off, the goal of these managers is to be ready for NG911 implementation should full funding become available in the future.

---

[22]From 2021 through 2023, the Army developed and received approval for its base emergency communications system plan. This plan identifies improvements to five capabilities, including NG911, that the Army determined will provide critical communications to first responders and emergency management personnel.

[23]The Defense Logistics Agency manages the global defense supply chain for five military services. The Pentagon Force Protection Agency provides law enforcement and security for the Pentagon and DOD facilities in the National Capital Region.

- **Support from state 911 authorities.** In some cases, states may support federal call centers in deploying NG911 infrastructure. For example, we found that state 911 authorities in Alabama and California were facilitating NG911 implementation at some federal call centers within their states. (See text box.) According to a state official, Alabama helped fund NG911 implementation at three call centers operated by the Air Force, the Army, and the National Aeronautics and Space Administration (NASA). California helped support installation of NG911 equipment at 14 call centers—four operated by the Air Force, three by the Army, four by the Marine Corps, and three by the National Park Service. Alabama and California officials said updating the federal call centers to NG911 was necessary to ensure they could continue to operate with state and local call centers. State officials said their goal was for federal call centers to have the same range of technology and capabilities as at state and local call centers.

Example of State and Federal Partnership to Implement Next Generation 911 (NG911): Yosemite National Park Call Center

Yosemite National Park's 911 call center, located outside the park's western gate in Mariposa County, California, operates 24/7 year-round and receives about 4,000 calls annually, according to officials. Most 911 calls relate to medical emergencies, although officials said they respond to a full array of emergencies, including search and rescue, law enforcement, and fire. The call center serves the park's approximately 1,800 permanent residents and 3.9 million annual visitors.

Yosemite National Park's call center operates in conjunction with a local call center in Mariposa County and was using legacy equipment at the time of our review. Over the past few years, however, California Office of Emergency Services (Cal OES) has installed NG911-ready equipment at the call center; officials expect this equipment to become operational once Cal OES completes system testing. Cal OES officials said Yosemite National Park is one of 14 federal call centers for which Cal OES is funding NG911, primarily to maintain interoperability with local call centers.

Source: GAO analysis of agency data and interviews with officials; travelview/stock.adobe.com (image). | GAO-24-106783

Officials Identified Funding Priorities, Cybersecurity Risks, and Other Challenges to Implementing NG911

Officials at the 11 federal agencies that operate 911 call centers cited a range of challenges associated with implementing NG911, including (1) funding priorities, (2) maintaining interoperability, (3) cybersecurity risks, and (4) increased data management responsibilities. These challenges are similar to those faced by state and local 911 call centers that we identified in our prior work on the basis of interviews with federal, state, local, and industry stakeholders. The challenges that those stakeholders identified included limited funding, interoperability risks when transitioning to new technology, and governance and coordination issues.[24]

Funding priorities. Officials from six agencies said their agencies were prioritizing funding to upgrade to NG911 systems to varying degrees, and officials from four agencies said they were not planning to prioritize NG911 implementation at all. Within DOD, officials from the Air Force, the Navy, and the Space Force said obtaining funding for installing NG911 was generally a low priority. Air Force officials said their leadership did not approve a fiscal year 2024 proposal to fund an office for overseeing NG911 planning. The officials said that without an office to lead planning, the managers at installations generally decide whether to purchase NG911-ready equipment.

Officials from the Army, the Defense Logistics Agency, and the Marine Corps said their agencies would begin prioritizing funding for NG911 implementation in fiscal year 2025.[25] Army and Marine Corps officials said they had done some initial planning for NG911 implementation but had not received funding to implement their plans as of fiscal year 2024. According to Army officials, NG911 became a higher priority in July 2024 following an internal briefing and decision to allocate funding to the effort. DOD's Defense Information Systems Agency estimated in 2022 that it

---

[24]GAO-18-252.

[25]Specifically, Marine Corps officials said they planned to allocate $15 million for NG911 improvements in fiscal year 2025. Army officials said they planned to allocate $11 million for NG911 improvements in fiscal year 2025, and $20 million annually for fiscal year 2026 through fiscal year 2030. Defense Logistics Agency officials projected they would fund NG911 improvements for fiscal year 2025 through fiscal year 2028 but did not specify the amount of funding.

would cost $259 million to purchase NG911 systems for the Army's 38 call centers within the United States.[26]

Officials from the Bureau of Indian Affairs, NASA, the National Institutes of Health, and the National Park Service told us that their agencies did not plan to implement NG911, and therefore had no immediate plans to request funding to upgrade their systems. NASA officials said their procedures and 911 services were effective, and the benefits of upgrading their 911 call systems to NG911 systems may not justify the cost. The officials said if upgrades were required without associated funding, NASA may need to rely on local call centers to provide 911 services.

As discussed above, DHS's Cybersecurity and Infrastructure Security Agency (CISA) conducts outreach to support NG911 implementation at the state, local, and federal levels. According to CISA officials, the decentralized nature in which funding for emergency communications upgrades is allocated to individual facilities has contributed to varied prioritization of NG911 upgrades across agencies. Specifically, CISA officials said funding for emergency communications upgrades are typically included in an individual facility's operations budget. Without an agency directive from leadership for managers to use funds for NG911 improvements, the officials said managers may decide to use the funds on upgrades to existing systems rather than purchase NG911 equipment, due to varying priorities and missions across facilities within an agency.

Maintaining interoperability. As different agencies implement NG911 systems, officials from eight agencies said they could face challenges related to maintaining interoperability with state and local call centers.

- **State and local 911 authorities outpacing federal agencies in NG911 implementation.** Army and Marine Corps officials said state and local authorities are implementing NG911 at a faster pace than the federal government. Marine Corps officials said they were about 2 years behind state and local agencies in planning for NG911. Army officials said maintaining the interoperability of their

---

[26]In 2022, DOD directed its Defense Information Systems Agency to develop a plan to upgrade all DOD facilities to NG911 systems. The Defense Information Systems Agency estimated that it would cost approximately $442 million to purchase NG911 systems, and $465 million to maintain and operate the systems across all DOD call centers located within the United States over a 7-year period. In addition, Navy officials told us that there may be substantial additional costs to modernize legacy call center infrastructure before NG911 systems can be installed and operated.

911 systems with neighboring call centers would be a challenge, because each state has a different timeline for NG911 implementation. According to Army officials, the longer it takes the Army to implement NG911, the more difficult it will be to maintain interoperability. Army officials said one state agreed to allow the Army to continue to use the state's traditional 911 telephone network.

Two other DOD agencies, the Defense Logistics Agency and the Pentagon Force Protection Agency, have installed NG911-ready software. However, officials from these agencies said they could not confirm whether the software is interoperable with each state's network. Specifically, Defense Logistics Agency officials said they had installed NG911-compatible software at the agency's four call centers but were awaiting approval from DOD to connect to each state's network. Defense Logistics Agency officials said they were coordinating with state and local governments on protocols for connecting, testing, and securing the systems once they received technical guidance from DOD and approval to connect.

- **Limited number of vendors offering products that meet interoperability standards.** Army, Marine Corps, and NASA officials said a limited number of vendors offer products that meet DOD requirements and NG911 interoperability standards. Army officials said less competition in the market and fewer options for the federal government would result in more costly products and services to implement the equipment. Additionally, Marine Corps officials said it was unclear if vendors would commit to offering products that meet interoperability standards.

Cybersecurity risks. Officials from seven agencies said their agencies would face a range of cybersecurity risks when implementing and using NG911 networks. Air Force and Army officials said that cybersecurity was generally a concern for networks on military installations, and that their 911 call centers would need to plan for the different types of threats associated with interconnected NG911 call systems. Army officials cited protecting personally identifiable information and the additional cybersecurity requirements associated with transitioning to an all IP-based network environment as challenges.

According to a 2019 CISA report, NG911 systems present more cybersecurity risks than legacy 911 systems, which operate on standard voice-based telephone networks that use closed or internal networks, with

limited connection to external networks and systems.[27] These traditional networks face some cybersecurity risks but generally have fewer vulnerabilities. Call centers using NG911 systems connect to states' IP networks, enhancing their capacity to quickly share data such as images, video, and location with other call centers on the network but also presenting new types of cybersecurity risks.

These risks included malicious software on devices connected to the 911 call system network that could allow someone to steal data or eavesdrop on calls, as well as various forms of cyberattacks that can overwhelm a call center's network infrastructure or result in erroneous dispatch of emergency response teams.[28] The report also highlighted confidentiality risks to sensitive, incident-related data. The report recommended that agencies plan for ways to mitigate a range of cybersecurity risks.[29]

Increased data management responsibilities. Officials from three DOD agencies said determining how to manage evolving data responsibilities would be a challenge. A benefit of NG911 is the ability to obtain various types of data from the public, such as text messages, images, and videos. However, officials said agencies will need to consider whether their call centers have adequate policies and training in place to effectively manage the new capabilities. Army officials said the large amount of incident data received on NG911 systems would be difficult for staff to manage and would require the Army to develop policies and training. Similarly, Marine Corps officials said the sensitive nature of the data and the increased amount of data transmitted on the network could overwhelm call center staff and affect their ability to dispatch. The officials stated that the Marine Corps has general policies for how to manage and retain data but would need to draft new policies and training to manage the different types of data.

---

[27]Department of Homeland Security, Cybersecurity and Infrastructure Security Agency, SAFECOM/NCSWIC, *Cyber Risks to Next Generation 9-1-1* (November 2019).

[28]Some forms of cyberattacks may also occur on 911 networks that have not implemented NG911 systems.

[29]The report recommended various strategies for public safety officials to address the risks to call systems. These strategies included establishing a cybersecurity risk framework to assist with managing risks, working with partners such as service providers and neighboring jurisdictions to understand the systems' physical and network vulnerabilities, and establishing an incident response team to analyze and respond to issues. See Department of Homeland Security, *Cyber Risks to Next Generation 9-1-1*.

Federal Agencies Have Provided Some Support for NG911 Implementation, and Officials and Stakeholders Had Differing Views on Additional Steps

Federal Support for State, Local, and Federal NG911 Implementation Has Included Guidance and Outreach

The four federal agencies with roles in NG911 implementation—CISA, FCC, NHTSA, and NTIA—have provided varying levels of support for implementation efforts by state, local, and federal agencies and 911 call centers. This support has included guidance, outreach, resources, strategic planning, coordination, and reporting.

CISA. CISA has supported the efforts of state and local agencies and 911 call centers to implement NG911 through its statutory role to conduct cybersecurity-related outreach and assistance activities.[30] These activities include:

- **Developing cybersecurity tools and resources for NG911.** CISA developed a web page on which it publishes resources and tools to help state and local 911 call centers plan for, prevent, and respond to cybersecurity incidents.[31] For example, CISA published a case study of a local 911 call center experiencing a cybersecurity incident that included lessons learned. CISA also provides resources, such as a self-assessment tool that state 911 agencies can use to measure the progress of individual 911 call centers in implementing NG911.

- **Strategic planning.** CISA is required by statute to develop and periodically update the National Emergency Communications Plan, which outlines strategic goals and objectives for the nation's emergency communications agencies, including objectives related

---

[30]*See* 6 U.S.C. § 652(c)(10).

[31]Department of Homeland Security, Cybersecurity and Infrastructure Security Agency, *911 Cybersecurity Resource Hub*, accessed April 12, 2024.

to NG911 implementation nationwide.[32] CISA administers the Emergency Communications Preparedness Center, which is an interagency working group that coordinates the roles and activities of federal agencies to improve emergency response communications. This center is required to annually report to Congress on the progress of federal coordination efforts toward achieving the National Emergency Communications Plan's strategic goals.[33] In its 2023 report, the center reported that DHS's Science and Technology Directorate is conducting research to assess the cybersecurity of NG911 systems and 911 call centers.[34]

- **Educating stakeholders about cybersecurity.** Through its SAFECOM advisory group, CISA regularly meets with officials from state and local emergency response agencies and representatives of public safety associations.[35] These meetings cover topics related to cybersecurity and NG911 interoperability. CISA also has held a series of regional conferences, called the Cyber Resilient 911 Symposia, for state and local emergency communications staff.[36] At these symposia, experts discuss current cybersecurity challenges facing state and local 911 call centers and share best practices. In addition, CISA's regional offices provide a range of technical assistance and trainings to 911 call centers and state emergency response agencies.

[32]*See* 6 U.S.C. §§ 571, 572. The National Emergency Communications Plan was first published in 2008. The Office of Emergency Communications released an update to the plan in 2014, and CISA released an update to the plan in 2019. For the 2019 update, see Department of Homeland Security, Cybersecurity and Infrastructure Security Agency, *National Emergency Communications Plan* (September 2019).

[33]*See* 6 U.S.C. § 576. CISA collects data for the report by interviewing other federal agencies.

[34]See Department of Homeland Security, Cybersecurity and Infrastructure Security Agency, *Emergency Communications Preparedness Center Annual Strategic Assessment, Calendar Year 2022 Report to Congress* (Oct. 24, 2023).

[35]SAFECOM is a CISA advisory group created to improve emergency response providers' security and ability to communicate across different jurisdictions. SAFECOM works with federal, state, and local emergency communications authorities to improve the interoperability capabilities and cybersecurity defenses of emergency communications centers.

[36]CISA received a $20 million appropriation to design and implement initiatives to enhance the resilience of 911 services. Joint Explanatory Statement accompanying the Consolidated Appropriations Act, 2022, Pub, L. No. 117-103, 136 Stat. 49 (2022). CISA officials said they used the appropriations to create the Cyber Resilient 911 initiative.

- **Collaborating with other federal agencies.** The Emergency Communications Preparedness Center established the Federal 911 Working Group, which comprises 14 agencies and is co-chaired by CISA and NHTSA, to enhance coordination across federal 911 initiatives.[37] According to CISA officials, the working group meets regularly to discuss current challenges and to share best practices and recommendations. For example, at the time of our review, the Federal 911 Working Group was preparing a fact sheet for the leaders of federal agencies to raise awareness of NG911 and why implementing NG911 should be a priority.

FCC. FCC has supported NG911 implementation by establishing regulations for 911 service providers on topics relevant to NG911, such as 911 reliability and location accuracy, and by publishing annual reports. FCC's activities include:

- **Developing new regulations for telecommunications providers.** FCC has recently issued new regulations for telecommunications companies to support NG911 implementation. In March 2024, FCC issued a final rule requiring mobile service providers to use the caller's location, rather than the nearest cell tower's location, when routing 911 calls to a 911 call center, when certain conditions are met.[38] These requirements phase in between 2024 and 2026. In July 2024, FCC issued a final rule that requires telecommunications providers to deliver 911 calls, including associated location information, in an IP-based format to one or more designated NG911 delivery points when certain conditions are met.[39] The final rule also makes telecommunications providers presumptively financially responsible for the costs of translating 911 traffic in the required IP-based format and transmitting 911 traffic to the designated NG911 delivery points.[40]

---

[37]The 14 agencies are: Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, Justice, Labor, State, Transportation, and the Treasury; FCC; and the General Services Administration.

[38]Location-Based Routing for Wireless 911 Calls, 89 Fed. Reg. 18488, 18488-89 (Mar. 13, 2024).

[39]See FCC, *Facilitating Implementation of Next Generation 911 Services (NG911)*, PS Docket Nos. 21-479 and 18-64, Report and Order, FCC-24-78 at 3, para. 3 (July 19, 2024).

[40]*Id.* at 4, para. 6.

- **Reporting annually on state collection and use of 911 fees.** FCC is required by statute to survey states annually on their collection and use of 911 fees and report to Congress on how the states use the fees, including whether states have used fees for non-911 purposes.[41] In its 15th annual report, published in December 2023, FCC found that for calendar year 2022, states and other jurisdictions collected approximately $3.9 billion in 911 fees. States and other jurisdictions used most of this fee revenue for administrative, equipment, and personnel costs for operating 911 call centers, and about $512 million for NG911-related expenditures. According to the report, most states and other jurisdictions reported that they had insufficient 911 fee revenue to fully fund 911 operations, including upgrading 911 communication systems.[42] In addition, seven states reported that the underfunding of 911 operations limited their ability to implement and transition to NG911.

NHTSA. As previously discussed, NHTSA's authority over certain 911 issues, including NG911, lapsed in 2022. According to NHTSA officials, the agency has pivoted its 911 efforts to focus on highway safety, consistent with its primary mission. Consequently, the agency has continued to conduct some activities to support NG911 implementation but has discontinued others. NHTSA's current activities related to NG911 implementation include:

- **Providing NG911 resources.** NHTSA has continued to maintain the resources for NG911 implementation it compiled and published on the website 911.gov. NHTSA and other agencies (e.g., CISA, FCC, and state 911 agencies) developed these resources to inform state and local officials about NG911-related issues and provide guidance on implementation. For example, the site includes NHTSA's NG911 Interstate Playbook, which provides technical guidance and case studies covering a range of NG911 implementation tasks. Covered topics include connecting emergency service IP networks between two different states and creating memorandums of understanding between 911 agencies in different states.

---

[41]*See* New and Emerging Technologies 911 Improvement Act, Pub. L. No. 110-283, § 6, 122 Stat. 2620, 2622 (2008) (codified as amended at 47 U.S.C. § 615a-1(f)(2)).

[42]One state did not respond to FCC's request for data. See Federal Communications Commission, *Fifteenth Annual Report to Congress on State Collection and Distribution of 911 and Enhanced 911 Fees and Charges for the Period January 1, 2022 to December 31, 2022.* (Washington, D.C.: Dec. 29, 2023).

- **Coordinating with federal and state stakeholders.** NHTSA has continued to work with federal agencies to coordinate emergency communications support, including for NG911 implementation. NHTSA is the co-chair of the Emergency Communications Preparedness Center's Federal 911 Working Group, discussed above. Additionally, NHTSA officials have attended CISA's SAFECOM meetings and regional symposia.

NHTSA has discontinued the following activities related to NG911 implementation:

- **Educating stakeholders about NG911 Issues.** Prior to NHTSA's lapse in general authority, its periodic 911 webinars included NG911-related topics. However, recent webinars have not explicitly covered NG911 topics. Additionally, its presentations at recent emergency responder conferences have focused on 911 issues related to highway safety.

- **Tracking states' NG911 progress.** Prior to its lapse in general authority, NHTSA annually surveyed state emergency response agencies about their actions to implement NG911 and compiled the data in the National 911 Annual Report. NHTSA last published the annual report in February 2023, and NHTSA officials said the agency will no longer publish the report.[43]

- **Reporting on the status of national-level NG911 tasks.** NHTSA officials said the agency would no longer publish updates to its NG911 Roadmap Report or track progress toward the roadmap's goals.[44] In 2019, NHTSA published the NG911 Roadmap, which identified national-level goals and tasks that NHTSA and a team of 911 experts and officials determined would be helpful in achieving a fully integrated NG911 system. NHTSA subsequently completed a progress report of the roadmap in June 2020 and issued two updates to the progress report in 2021 and 2022. The most recent update reported on progress toward the goals in the roadmap and the ways in which federal agencies and 911 stakeholders had participated in these efforts. In February 2024, NHTSA published the NG911 Roadmap Outreach Report, which NHTSA officials said was the final assessment of progress toward the roadmap's

---

[43]See Department of Transportation, *National 911 Annual Report: 2021 Data: Data from January 1 – December 31, 2021*.

[44]Department of Transportation, National Highway Traffic Safety Administration, *NG911 Roadmap: Pathways Toward Nationwide Interconnection of 911 Services* (2019).

goals.[45] The report also described the extent to which selected federal agencies and 911 stakeholders had agreed to continue to work on tasks in the roadmap.

- **Administering the 911 grant program.** At the end of September 2022, NHTSA, in coordination with NTIA, completed its responsibilities for administering the 911 grant program, which provided funding for state, local, and tribal 911 authorities for the adoption and operation of NG911. NHTSA and NTIA, which co-administered the grant program, awarded approximately $109 million to 36 recipients in 2019.[46] According to NHTSA and NTIA, recipients used the grant funding to acquire NG911-capable equipment and software, implement NG911 training, and conduct cybersecurity assessments, among other activities.

NTIA. As previously discussed, NTIA's authority over certain 911 issues lapsed in 2022, including NG911. The agency has continued to conduct some activities to support NG911 implementation, such as educating stakeholders about a variety of NG911 issues. For example, NTIA officials said they have presented on NG911 issues at 911-related conferences and published a fact sheet describing NG911's capabilities and advantages over legacy 911 systems.[47] NTIA officials told us that they hired a subject matter expert for 911-related work, and that the expert has been developing additional NG911-related presentations and fact sheets. However, as previously discussed, NTIA has discontinued administering the 911 grant program, a role it performed in coordination with NHTSA.

---

[45]In our 2018 report, we recommended that NHTSA determine the roles and responsibilities of the federal agencies participating in the National NG911 Roadmap initiative. In response, NHTSA released the February 2024 NG911 Roadmap Outreach Report. See GAO-18-252 and Department of Transportation, National Highway Traffic Safety Administration, *Next Generation (NG911) Roadmap Outreach Report* (Feb. 6, 2024). Our report also recommended that NHTSA develop program goals and performance measures, as well as an implementation plan to support completion of the roadmap's tasks; we confirmed that NHTSA implemented these recommendations in 2021 and 2022, respectively.

[46]In 2016, approximately $115 million from spectrum auction proceeds were deposited into the Public Safety Trust Fund and made available for the grant program. 911 Grant Program, 83 Fed. Reg. 38051, 38052 (Aug. 3, 2018). In 2017, NHTSA and NTIA published a notice of proposed rulemaking seeking public comment on proposed regulations for the 911 Grant Program. In 2018, NHTSA and NTIA issued a final rule establishing regulations for the 911 grant program and published the notice of funding opportunity.

[47]For example, NTIA presented at a cybersecurity symposium in January 2024.

Federal Officials and Stakeholders Generally Agreed Dedicated NG911 Funding Would Help but Differed on the Need for Federal Leadership

Officials from 15 federal agencies, as well as representatives of five public safety associations (stakeholders), identified several ways the federal government could further support state, local, and federal NG911 implementation, including providing dedicated funding, making NG911 an agency priority, and providing more leadership on the issue. While federal officials and stakeholders generally agreed that dedicated funding would be helpful, they had differing views on the other potential actions, especially on providing more federal leadership.[48] Were Congress to decide to enhance federal leadership on NG911 implementation, our prior work could provide a framework for assigning roles to federal agencies.[49]

Provide dedicated funding for NG911 implementation. Officials from eight of the federal agencies and five stakeholders highlighted a lack of federal funding dedicated for NG911. For example, federal agency officials told us that their agencies have either not requested or not received sufficient funding in their budgets for NG911 upgrades. One official said that dedicated funding would help federal agencies plan for NG911 implementation at all their call centers at the same time, thereby preventing uneven progress toward implementation.

Make NG911 an agency priority and incorporate NG911 into budget planning. Officials from two federal agencies said that incorporating NG911 planning into agency strategic planning and goals related to public safety communications could help ensure agencies take further steps toward implementation, like assessing feasibility and budgetary planning. For example, Army officials said they had identified the need for NG911 as part of a broader emergency communications program, and that this initial strategic planning work was critical in ensuring approval of the program by Army leadership.[50] As discussed above, the officials said they

---

[48]We spoke with federal officials and stakeholders from 20 agencies and associations. Federal agencies included 11 agencies operating 911 call centers (including five of their 911 call centers), and four agencies providing support for NG911 implementation (CISA, FCC, NHTSA, and NTIA). We also spoke with representatives of five public safety associations. See appendix 1 for additional information.

[49]GAO, *Federal Protective Service: DHS Should Take Additional Steps to Evaluate Organization Placement*, GAO-19-122 (Washington, D.C.: Jan. 8, 2019); and *Government Reorganization: Key Questions to Assess Agency Reform Efforts,* GAO-18-427 *(Washington, D.C.: June 13, 2018).*

[50]Army officials said they expected the budgetary resources to support a program called the base emergency communications system. The program consists of Army emergency communications equipment and infrastructure upgrades in the following areas: computer-aided dispatch, land mobile radio, Enterprise Mass Warning and Notification, Next Generation 911, and First Responder Broadband Network.

planned to use budgetary resources for their plans beginning in fiscal year 2025. Officials from Alabama and California attributed their states' progress to creating statewide deployment goals and policies that prioritized funding for NG911 deployment.

Determine the need for a federal leader on NG911 issues and define other federal roles. Federal officials and public safety stakeholders had differing views on the usefulness and necessity of designating a lead federal agency for NG911 implementation. As discussed previously, there are no federal requirements to implement NG911. Officials from nine of the federal agencies and one stakeholder either did not mention the need for a federal agency to assume a lead role on these issues, or said that they viewed federal leadership on the issue as unnecessary. Officials from six federal agencies and five stakeholders said they already had avenues for coordinating with agencies on NG911 efforts, such as the Emergency Communications Preparedness Center's Federal 911 Working Group.

Other federal officials and stakeholders said that assigning a lead agency to coordinate on NG911 issues would be helpful. Officials from one federal agency and one stakeholder said it would be beneficial for a lead federal agency to assume responsibility for tracking progress toward NG911 implementation and identifying states' needs. As discussed above, before its lapse in general 911 authority as part of the Implementation Coordination Office, NHTSA published annual reports that tracked states' progress toward NG911 implementation. Currently, no federal agency does so. Officials from two federal agencies and one stakeholder thought a federal effort to track progress would be helpful because it would fill what they viewed as an information gap. Officials from one federal agency said NHTSA's reports were a useful reference and informed the agency's rulemaking. However, two stakeholders said they had their own resources for tracking progress.

Officials from one federal agency and three stakeholders also said that the federal role was not well defined, and that the federal role should be determined and clearly defined. For example, one stakeholder said that better defined roles could help federal agencies coordinate efforts. NHTSA's recent NG911 Roadmap Outreach Report described various roles—such as leading, supporting, informing, and monitoring—that

support NG911 goals and tasks.[51] The report described the entities that have performed these roles since 2019, including federal agencies and a federal working group (CISA, FCC, and the Emergency Communications Preparedness Center). NHTSA officials said they do not have the authority to assign roles, and that participation in the roadmap is voluntary. In addition to federal roles, NHTSA's Roadmap Outreach Report identified roles for nonfederal stakeholders, including the National Association of State 911 Administrators, National Emergency Number Association, and Association of Public Safety Communications Officials.

Four recent legislative proposals assign primary responsibility for administering a federal NG911 program to NTIA.[52] According to these proposals, NTIA would administer a multi-billion-dollar grant program (between $2 billion and $15 billion, depending on the proposal) and establish a cybersecurity center and an NG911 advisory board, among other activities. Three bills would require NTIA to consult with NHTSA on the NG911 grant program and other activities. As of September 2024, none of these bills had been enacted.

As discussed above, federal agency officials and public safety stakeholders had differing views on the need for the federal government to assume a role in NG911 implementation. However, were Congress to reauthorize the NG911 program, it would have to consider what the federal role would be and which agency (or agencies) should oversee the program. Our prior work could provide a framework for assessing whether to task an agency with a role in NG911 implementation, and which agency (or agencies) would be appropriate for the role.[53] This work identified criteria for assessing options for placing an office or agency within an organization.

On the basis of these criteria, agencies assigned roles in furthering NG911 implementation should have goals and objectives that align with these roles, as well as the ability to share information. Three agencies—CISA, NHTSA, and NTIA—may meet these criteria, given their prior and ongoing roles in supporting NG911. As discussed above, these agencies

---

[51]According to NHTSA, the report contained information it had gathered from federal agencies and external stakeholders about federal agencies' roles and authorities related to NG911 goals and tasks.

[52]H.R. 1784, 118th Cong. (2023); H.R. 3565, 118th Cong. (2023); S. 2712, 118th Cong. (2023); S. 4207, 118th Cong. (2024).

[53]GAO-19-122 and GAO-18-427.

have goals, objectives, and activities that align to some extent with NG911 implementation, and they regularly share information about these efforts.

Given the agencies' different missions, their stakeholder networks vary and may lend themselves to different types of roles in NG911 implementation. For example, in its role as the spectrum manager for federal users, NTIA has relationships with many federal agencies that we identified as operating 911 call centers.[54] NTIA is also the principal advisor to the President on telecommunication issues, which could enable the agency to raise the profile of NG911. NHTSA's role in public safety may provide it with stronger connections to the emergency responder community. And CISA's role in the cybersecurity of emergency communications may provide stronger connections to state and local 911 agencies.

Agency Comments

We provided a draft of this report to the Departments of Commerce, Defense, Health and Human Services, Homeland Security, the Interior, and Transportation, FCC, and NASA for review and comment. The Departments of Defense, Homeland Security, the Interior, and Transportation, and FCC, provided technical comments, which we incorporated as appropriate. The Department of Commerce, Department of Health and Human Services, and NASA did not have any comments on the report.

We are sending copies of this report to the appropriate congressional committees; the Secretaries of Commerce, Defense, Health and Human Services, Homeland Security, the Interior, and Transportation; the Chairwoman of FCC; the Administrator of NASA; and other interested parties. In addition, the report is available at no charge on the GAO website at https://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-2834 or vonaha@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found in the last

---

[54]FCC manages the spectrum for non-federal users.

page of this report. GAO staff who made key contributions to this report are listed in appendix II.

Andrew Von Ah
Director, Physical Infrastructure

Appendix I: Objectives, Scope, and Methodology

This report examines (1) efforts by federal agencies with 911 call centers to implement Next Generation 911 (NG911) and challenges associated with implementation; and (2) how federal agencies have supported state, local, and federal NG911 implementation since 2022, and the views of federal officials and stakeholders on how the federal government could further support national NG911 implementation.[1]

To examine efforts by federal agencies with 911 call centers to implement NG911, we first identified the federal agencies that operated 911 call centers.[2] To do so, we reviewed Department of Homeland Security (DHS), Federal Communications Commission (FCC), and National Highway Traffic Safety Administration (NHTSA) reports, as well as 911 association documents. We also spoke with officials from DHS, FCC, NHTSA, and the National Telecommunications and Information Administration (NTIA), as well as representatives of public safety associations such as the National Association of State 911 Administrators, National Emergency Number Association, and Association of Public-Safety Communications Officials.

Based on this information, we compiled a list of 21 federal agencies and contacted them to confirm whether they operated primary and secondary 911 call centers.[3] We focused on federal agencies with primary call centers (i.e., call centers that receive 911 calls directly) and secondary call centers (i.e., call centers that receive 911 calls transferred from

---

[1]The Next Generation 911 Advancement Act of 2012 outlined federal agencies' roles and responsibilities related to assisting states and localities in the transition to NG911. Principally, the act required the National Highway Traffic Safety Administration (NHTSA) and National Telecommunications and Information Administration (NTIA) to create the Implementation Coordination Office to improve coordination and communication among federal, state, and local stakeholders. In 2022, the authority of NHTSA and NTIA over general 911 issues as part of the Implementation Coordination Office lapsed. The Next Generation 911 Advancement Act of 2012, Pub. L. No. 112-96, §§ 6503, 6508-6509, 126 Stat. 237, 237-41, 44-45 (2012).

[2]The 911 industry uses multiple terms to refer to a 911 call center, including public safety answering point and emergency communications center. For the purposes of this report, we chose to use the term call center.

[3]In addition to the agencies listed in table 2, we also contacted the Departments of Agriculture (Forest Service), Energy, Homeland Security (U.S. Coast Guard, Federal Law Enforcement Training Centers, Customs and Border Patrol, Federal Emergency Management Agency, and Federal Protective Service), the Interior (Bureau of Land Management), and Veterans Affairs (Veterans Health Administration), as well as the Federal Reserve. Based on the information the officials provided, we determined that these agencies did not operate primary or secondary 911 call centers. Despite our best efforts, it is possible that agencies other than the ones included in our review operate 911 call centers.

primary call centers) for consistency with our previous reports about local and state call centers' NG911 efforts.[4] We did not include in our scope agencies that exclusively operate call centers that do not receive 911 calls, such as agencies whose call centers only dispatch enforcement officers. We also did not include agencies, such as the U.S. Coast Guard, that receive emergency calls but whose call centers lack call-taking and dispatch equipment that state and local 911 call centers use.

We identified 11 federal agencies or components of agencies that operated primary or secondary call centers in the United States (table 2).[5] Agency officials provided us with the number of call centers and the stage of their NG911 implementation.[6] In tallying the agencies' call centers, we included only primary and secondary call centers operating in the continental United States, Hawaii, the District of Columbia, and U.S. territories. Some Department of Defense components (which we refer to as agencies) operate call centers at their overseas installations, which we did not include in our review.

Table 2: Federal Agencies with 911 Call Centers in the United States, as of June 2024

Federal agency	Number of 911 call centers in the United States[a]
Department of Defense	**178**
Air Force[b]	110
Army	38
Defense Logistics Agency	4

[4]For previous related reports, see GAO, *Next Generation 911: National 911 Program Could Strengthen Efforts to Assist States*, GAO-18-252 (Washington, D.C.: Jan. 31, 2018); and *911 Services: Most States Used 911 Funds for Intended Purposes, but FCC Could Improve Its Reporting on States' Use of Funds*, GAO-13-376 (Washington, D.C.: Apr. 18, 2013).

[5]The Department of Defense uses the term "component" to refer to its military departments, services, and defense agencies, including the Air Force, the Army, the Defense Logistics Agency, the Marine Corps, the Navy, the Pentagon Force Protection Agency, and the Space Force. For the purposes of this report, we generally use the term "agency" to refer to these and other executive branch department components.

[6]In some cases, officials noted that some of their call centers were in different stages of 911 implementation. For example, officials from three agencies (the Marine Corps, the National Park Service, and the National Aeronautics and Space Administration) said a few of their call centers were equipped with more advanced 911 equipment than the others. The officials took this into consideration when determining their overall stage of implementation.

Federal agency	Number of 911 call centers in the United States[a]
Marine Corps	11
Navy	7
Pentagon Force Protection Agency	2
Space Force	6
Department of Health and Human Services	**1**
National Institutes of Health	1
Department of the Interior	**42**
Bureau of Indian Affairs	1
National Park Service	41
National Aeronautics and Space Administration	**12**
Total federal call centers	**233**

Source: GAO analysis of agency data. | GAO-24-106783

[a]These call centers are located in the continental United States, Hawaii, the District of Columbia, and U.S. territories.

[b]The Air Force's call centers include those located on Air National Guard and Air Force Reserve bases.

To examine efforts by federal agencies with 911 call centers to implement NG911, and to obtain their views on the associated challenges, we interviewed or obtained a written response from officials from the 11 federal agencies we identified and other relevant agencies, such as the Cybersecurity and Infrastructure Security Agency (CISA). We interviewed the officials using a semi-structured discussion guide to obtain their views on the benefits and costs of NG911, the status of NG911 implementation, preparations for NG911 deployment, and challenges of NG911 implementation.[7]

To further illustrate the status of NG911 implementation and associated challenges, we selected a non-generalizable sample of five call centers from four diverse federal departments (table 3). We selected three call centers to obtain diversity in the call centers' size (number of call takers), stage of NG911 implementation, and geographic location. We selected these call centers from states that had mature NG911 programs, and to

---

[7]Air Force officials said that the Air Force oversees 911 deployment for both Air Force and Space Force call centers. During our interview, Air Force officials spoke on behalf of both agencies.

capture examples of state and federal collaboration.[8] In addition, in our
contact with officials from the National Institutes of Health and Bureau of
Indian Affairs, the agencies included officials from two call centers. The
call center officials shared their experiences with NG911 implementation,
and we included their views in our review.

Table 3: Federal 911 Call Centers Interviewed

Federal agency	Call center (location)
Department of Defense	
Army	Fort Liberty (Fayetteville, NC)
Department of Health and Human Services	
National Institutes of Health	Main Campus (Bethesda, MD)
Department of the Interior	
Bureau of Indian Affairs	Southwest Region Mescalero Agency (Mescalero, NM)
National Park Service	Yosemite National Park (Yosemite, CA)
National Aeronautics and Space Administration	
Marshall Space Flight Center	Redstone Arsenal (Huntsville, AL)

Source: GAO. | GAO-24-106783

We interviewed officials from the call centers using a semi-structured
discussion guide to obtain their views on the benefits and costs of
NG911, the status of NG911 implementation, preparations for NG911
deployment, and challenges of NG911 implementation. Officials from
Marshall Space Flight Center and Yosemite National Park said that the
states of Alabama and California, respectively, helped fund NG911
implementation at their call centers. As a result, we also interviewed state
911 agency officials from Alabama and California about their efforts to
support NG911 implementation at federal call centers within their states.
We obtained and reviewed state agency documents describing their
NG911 plans and activities when available. While not generalizable to all
federal call centers, the information obtained from these interviews
provided examples of broader issues faced by federal call centers in
managing the NG911 transition.

---

[8]NHTSA's *National 911 Annual Report 2021 Data* identified 20 states in which 90 to 100
percent of the geographic area is served by NG911 services. The states included
Alabama, California, Massachusetts, and North Carolina. See Department of
Transportation, National Highway Traffic Safety Administration, *National 911 Annual
Report: 2021 Data: Data from January 1 – December 31, 2021* (February 2023).

To examine how federal agencies have supported NG911 implementation, we reviewed relevant statutes, regulations, and documentation of federal agency actions and plans, and our prior reports. We interviewed officials from federal agencies, including NHTSA, NTIA, FCC, and CISA, about their current efforts to support NG911 implementation, and how their efforts have changed since the Implementation Coordination Office's lapse in authority over general 911 issues in 2022.

To obtain views on how the federal government could further support NG911 implementation, we interviewed federal officials and representatives of public safety associations. We interviewed federal officials from 11 agencies with call centers and four agencies that provide support for NG911, as well as representatives of five public safety associations (table 4); and managers from five federal call centers (table 3). Although the views of these selected officials and representatives are not generalizable to all public safety stakeholders, they provide insights into the federal government's roles and responsibilities for NG911 deployment. We also reviewed our prior work that could provide a framework for assessing whether to task an agency with a role, and which agency would be appropriate for the role.[9]

Table 4: Federal Agencies and Associations Interviewed

Federal agencies
Air Force
Army
Bureau of Indian Affairs
Cybersecurity and Infrastructure Security Agency
Defense Logistics Agency
Federal Communications Commission
Marine Corps
National Aeronautics and Space Administration
National Highway Traffic Safety Administration
National Institutes of Health
National Park Service

[9]GAO, *Federal Protective Service: DHS Should Take Additional Steps to Evaluate Organization Placement*, GAO-19-122 (Washington, D.C.: Jan. 8, 2019); and *Governmental Reorganization: Key Questions to Assess Agency Reform Efforts,* GAO-18-427 (Washington D.C.: June 13, 2018).

Federal agencies
National Telecommunications and Information Administration
Navy
Pentagon Force Protection Agency
Space Force
Public safety associations
Association of Public-Safety Communications Officials
International Association of Chiefs of Police
International Association of Fire Chiefs
National Association of State 911 Administrators
National Emergency Number Association

Source: GAO. | GAO-24-106783

We conducted this performance audit from April 2023 to September 2024
in accordance with generally accepted government auditing standards.
Those standards require that we plan and perform the audit to obtain
sufficient, appropriate evidence to provide a reasonable basis for our
findings and conclusions based on our audit objectives. We believe that
the evidence obtained provides a reasonable basis for our findings and
conclusions based on our audit objectives.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact	Andrew Von Ah, (202) 512-2834 or vonaha@gao.gov
Staff Acknowledgments	In addition to the contact named above, Andrew Huddleston (Assistant Director), Gail Marnik (Analyst in Charge), Elizabeth Dretsch, Jacob Harwas, Rebecca Morrow, Shannon Murphy, Andrew Nguyen, Josh Ormond, Michael Sweet, and Laurel Voloder made key contributions to this report.