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Report to the Chairman, Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, U.S. Senate

August 2009

EMERGENCY COMMUNICATIONS

National Communications System Provides Programs for Priority Calling, but Planning for New Initiatives and Performance Measurement Could Be Strengthened

GAO-09-822

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Highlights

Highlights of GAO-09-822, a report to the Chairman, Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

Government functions and effective disaster response and management rely on the ability of national security and emergency preparedness (NS/EP) personnel to communicate. The Department of Homeland Security's (DHS) National Communications System (NCS), is responsible for ensuring continuity of NS/EP communications when network congestion or damage occurs. As requested, GAO assessed the (1) priority communication programs NCS provides, how it enlists subscribers, and to what extent NCS controls access to these programs; (2) challenges that can affect delivery of these programs; and (3) extent to which NCS plans for and evaluates its services. GAO reviewed NCS program documents, such as annual reports and access control procedures and data on program subscribers. GAO also interviewed officials from NCS and select state and local government entities. GAO compared NCS performance measures to federal best practices.

What GAO Recommends

Among other things, GAO recommends the Manager of NCS (1) define program capabilities, costs, and mitigation plans as part of NCS's acquisition planning for enhanced NS/EP communications services; (2) incorporate strategic planning best practices as NCS finalizes its strategic plan; and (3) strengthen NCS's performance measurement. DHS agreed with our recommendations. DHS's detailed comments and GAO's response are included in the report.

View GAO-09-822 or key components.
For more information, contact William O. Jenkins at (202) 512-8777 or jenkinswo@gao.gov.

What GAO Found

NCS has two programs to provide NS/EP personnel with priority calling service when telephone networks are congested or damaged—the Government Emergency Telecommunications Service (GETS) and the Wireless Priority Service (WPS). NCS has undertaken several efforts, such as outreach at industry conferences, to increase participation in and control access to these programs. According to NCS, though outreach efforts have helped to increase overall enrollment, it is working to further address possible cost barriers to participation in WPS, such as discussing options with wireless carriers to help defray costs. In addition, NCS has implemented policies and procedures to ensure that access to its priority programs are limited to authorized users. GAO's review of select GETS and WPS subscriber data revealed that, of the 85 records we examined, NCS generally followed its policies and procedures to limit GETS and WPS access to authorized subscribers.

NCS is taking steps to address inherent challenges in the communications environment—such as network congestion. For example, NCS initiated a satellite pilot program to allow NS/EP officials to circumvent severely damaged or congested traditional telephone networks. However, methods for implementation and evaluation of the pilot were unclear and NCS subsequently terminated the pilot. NCS is also working to provide priority voice and data NS/EP communications as part of the evolving telecommunications networks, but it has not finalized an acquisition approach based on available technologies, costs, or plans to mitigate technological and other challenges to deliver such capabilities. The lack of this information has led to congressional restrictions on NCS's funding. As NCS attempts to ensure that GETS and WPS services can operate in these evolving networks, an acquisition approach that includes this information will provide NCS officials and Congress with essential information to most effectively allocate resources and guide decision making.

Although DHS agreed with GAO's June 2008 recommendation to complete the NCS strategic plan, NCS has not finalized its strategic plan which has been under development since 2007. Furthermore, existing performance measures do not cover all of its core responsibilities, as suggested by best practices, and certain performance measures could be strengthened. For example, NCS does not have a measure to gauge its performance in two of its key federal roles—critical infrastructure protection for communications under DHS's National Infrastructure Protection Plan as well as coordinating communications issues under the National Response Framework. Furthermore, NCS does not use prior years' enrollment levels to help determine increases, if any, to be made to future year's goals for user enrollment. Fully and accurately measuring performance is critical to ensuring the agency and key stakeholders—such as Congress—base program and resource decisions on actual performance.

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Abbreviations

EOP	Executive Office of the President
ESF-2	emergency support function no. 2
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
GETS	Government Emergency Telecommunications Service
HSC	Homeland Security Council
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
IXC	interexchange carrier
NCC	National Coordinating Center for Telecommunications
NCS	National Communications System
NEMA	National Emergency Management Association
NGN	next generation network
NIPP	National Infrastructure Protection Plan
NS/EP	national security and emergency preparedness
NS/EP NGN	national security and emergency preparedness next generation network
NSC	National Security Council
NSTAC	National Security Telecommunications Advisory Committee
OMB	Office of Management and Budget
OMNCS	Office of the Manager, National Communications System
OSTP	Office of Science and Technology Policy
POC	point-of-contact
PSTN	public switch telephone network
VoIP	Voice over Internet Protocol
WPS	Wireless Priority Service

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United States Government Accountability Office
Washington, DC 20548

August 28, 2009

The Honorable Daniel K. Akaka
Chairman
Subcommittee on Oversight of Government Management,
the Federal Workforce, and the District of Columbia
Committee on Homeland Security and Governmental Affairs
United States Senate

Dear Mr. Chairman:

The global community relies on telecommunications services and infrastructure to conduct business, government, and daily life.[1] Emergency events such as the September 11, 2001, terrorist attacks and Hurricane Katrina in 2005, during which communications capabilities were substantially disrupted, remind us of the fragility of the complex telecommunications infrastructure and the need to ensure availability of communications capabilities for leaders responsible for functions critical to the management of and response to national security and emergency situations. Telecommunications infrastructure is susceptible not only to flooding, fire, and power outages, but also to increased demand—all of which can limit the availability of telecommunications services or render services inoperable. In the United States, more than 2 billion calls are made every day via wireline and wireless networks, and, in 2008, more than 1 trillion text messages were transmitted. Additionally, since the mid-1990s, U.S. wireless telephone subscriptions have grown from about 28 million to more than 270 million as of December 2008, resulting in a significant surge in the number of daily voice and data transmissions. This surge can create increased competition for critical telecommunications resources that may be limited during disasters and emergencies.[2] Heightened network use, in combination with the effects of disasters and emergencies, can produce cascading effects far beyond the physical location of the disaster area.

[1]Telecommunications is defined as the electronic transmission of information, including voice and data, over a long distance for the purpose of communicating.

[2]Data obtained from the Cellular Telecommunications and Internet Association, an industry trade association.

In 1963, President Kennedy established the National Communications System (NCS),[3] which now falls under the Department of Homeland Security (DHS), to facilitate continuity of government by maintaining communications between the President and officials with national security and emergency preparedness (NS/EP) functions.[4] Given the critical nature of their roles, it is essential that these individuals have access to vital communications capabilities needed to carry out their NS/EP functions—particularly during disasters or emergencies. To that end, the NCS provides a number of programs and services designed to enable communications and facilitate continuity of government during emergencies.

You requested that we review the communications capabilities and access to the priority communications programs that NCS provides. In response to your request, we prepared this report to answer the following questions:

(1) What priority communications programs does NCS provide, how does NCS enlist subscribers, and to what extent does NCS control access to these programs?

(2) What challenges, if any, can affect NCS's delivery of priority communications programs?

(3) To what extent does NCS plan and evaluate its services?

To analyze what priority communications programs NCS provides, we reviewed relevant legislation, available NCS program plans, as well as budget requests and annual reports. We also interviewed relevant NCS and Federal Communications Commission (FCC) officials who have varying

[3]The NCS is both a national communications system that brings together the telecommunications assets owned or leased by the federal government that can meet the federal government's communications needs to support its national security and emergency preparedness activities as well as a management structure intended to ensure that a national telecommunications infrastructure is developed that is responsive to these needs. The management structure includes (1) an office within DHS that consists of the Office of the Manager, NCS, which includes the National Coordinating Center for Telecommunications, and (2) an interagency body of NCS member agencies, which is a consortium of 24 federal departments and agencies.

[4]NS/EP personnel include officials from across all levels of government including members of Congress, personnel in federal departments and agencies with continuity of government responsibilities, state governors, mayors, fire and police chiefs, and state and local government emergency managers.

responsibilities for priority communications. In addition, we interviewed cognizant representatives from AT&T, Qwest Communications, and Verizon. We selected these carriers because they provide NS/EP communications services and were amenable to meeting with us.[5] Although their views cannot be generalized to all telecommunications companies that provide NS/EP communications, the information we obtained helped to enhance our understanding of their role in providing emergency communications. We also interviewed NS/EP officials from a nonprobability sample of 15 states and 13 localities, which we selected based on a variety of factors including geographical location, terrain and climate conditions, and types and frequency of natural disasters.[6] While the results of these interviews cannot be generalized to reflect the views of NS/EP emergency management officials in all states and localities, the information obtained provided us with useful information on the perspectives of various NS/EP personnel about NCS and its priority communications programs. To determine how NCS enlists subscribers and controls access to its priority programs, we collected and reviewed subscriber eligibility criteria, and interviewed NCS officials on these criteria, NCS's outreach efforts to enlist new subscribers, and its internal controls for controlling access to these programs. We also obtained NCS standard operating procedures and compared them with criteria in Standards for Internal Control in the Federal Government.[7]

To determine whether NCS adhered to its procedures for terminating access for subscribers who no longer meet the programs' eligibility criteria, we reviewed subscriber records for select former federal and state government officials. Specifically, we reviewed a nonprobability sample of records for former members of the U.S. Senate as well as members and delegates of the U.S. House of Representatives; immediate past heads of federal departments and agencies as of August 2008; and

[5]NS/EP communications are telecommunications services used to maintain a constant state of readiness—24 hours a day, 7 days a week, 365 days a year—or to respond to and manage any event or crisis that can (1) create injury or harm to the population and (2) threaten the NS/EP posture of the nation, among other things.

[6]Nonprobability sampling is a method of sampling when nonstatistical judgment is used to select members of the sample, usually specific characteristics of the population as criteria. Results from nonprobability samples cannot be used to make inferences about a population, because in a nonprobability sample some elements of the population being studied have no chance or an unknown chance of being selected as part of the sample.

[7]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

immediate past governors of U.S. states and territories as of August 2008, which is when we obtained the subscriber data. We selected these groups because they served in public positions that would allow NCS to easily determine that their positions ended, and in turn, work with the subscriber organization's to update account status, as appropriate. Although the results of our work cannot be generalized to evaluate the effectiveness of controls used for all NCS program subscribers, the information obtained provided us with useful information about the extent to which subscriber records were terminated for groups we reviewed following a change in the subscriber's eligibility status. Because the subscriber database, in its entirety, is classified, we have limited our reporting of the results of our analysis to only nonclassified information; however, this does not affect our findings. To assess the reliability of these data, we reviewed the data for obvious problems with completeness or accuracy, interviewed knowledgeable agency officials and contract support staff about the data quality control processes, and reviewed relevant documentation such as the database dictionary that describes various data fields in the subscriber database. We performed electronic testing on the data and found the data to be sufficiently reliable for the purposes of this report.

To determine what challenges can affect NCS's delivery of its priority communication programs, we interviewed relevant NCS officials who have responsibilities for the implementation of these programs. We also obtained information and reviewed documentation such as briefing slides from the agency regarding its efforts to implement a pilot program to explore utilizing satellite technology, the Satellite Priority Service pilot program, as well as its efforts to leverage next generation network (NGN) technology in its priority communication programs. We compared this information with our previous work on pilot program planning and technology acquisition to determine the extent to which it was consistent with these criteria.[8]

To assess NCS's overall planning and evaluation efforts, we reviewed related program and planning documentation including Program Assessment Rating Tool (PART) reports submitted to the Office of

[8]GAO, *Tax Administration: IRS Needs to Strengthen Its Approach for Evaluating the SRFMI Data-Sharing Pilot Program*, GAO-09-45 (Washington, D.C.: November 7, 2008); and *Information Technology: DHS Needs to Fully Define and Implement Policies and Procedures for Effectively Managing Investments*, GAO-07-424 (Washington, D.C.: April 27, 2007).

Management and Budget (OMB).[9] We also interviewed NCS officials about their strategic planning efforts and the mechanisms NCS uses to evaluate its services. We compared these efforts with criteria in guidance from the Office of Management and Budget (OMB), related legislation such as the Government Performance and Results Acts of 1993, as well as federal best practices contained in our past reports.[10] Our work primarily focused on the office that is charged with executing the day-to-day functions necessary to meet federal national security and emergency preparedness telecommunications needs, which is the Office of the Manager, NCS (OMNCS). Throughout this report, unless otherwise noted, we refer to the OMNCS as the NCS, though organizationally, the NCS includes the OMNCS, as well as a 24-member interagency body, among other entities. For more details on the overall NCS organization structure, see appendix I.

We conducted this performance audit from June 2007 through August 2009 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 provides a reasonable basis for our findings and conclusions based on our audit objectives. Appendix II contains more details on our scope and methodology.

Background

Telecommunications Infrastructure

The telephone remains an essential communication tool for business, government, and the general public. The public switched telephone network (PSTN), an interconnected network of telephone exchanges over

[9]PART consists of a standard series of questions intended to determine the strengths and weaknesses of federal programs. The PART questions cover four broad topics—(1) program purpose and design, (2) strategic planning, (3) program management, and (4) program results/accountability.

[10]Government Performance and Results Act of 1993, Pub. L. No. 103-62, 107 Stat. 285 (1993); and OMB, *OMB Circular A-11, Part 6, Preparation, Submission, of Strategic Plans, Annual Performance Plans, and Annual Program Performance Reports* (Washington, D.C.: Executive Office of the President, June 2008). For our past work, see, for example, GAO, *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures*, GAO-03-143 (Washington, D.C.: November 22, 2002); and *Executive Guide: Effectively Implementing the Government Performance and Results Act*, GAO/GGD-96-118 (Washington, D.C.: June 1996).

which telephone calls travel from person to person, is the backbone of the communications architecture that enables the transmission of voice and data communications. In general terms, the PSTN is the public communications system that includes the networks of local and long distance telephone carriers, as well as cellular networks and satellite systems. To connect one wireline (also known as landline) telephone to another, the telephone call is routed through various switches at telephone exchanges that are operated by local and long-distance telephone carriers.[11] As a caller dials another party's number, the transmission from one caller to the other is made through a telephone company's facility, known as the central office, over copper wires or fiber-optic cables to the called party's telephone. Over time, the PSTN has evolved from an analog system to one that is almost entirely digital and able to support voice and data transmissions made from wireline and wireless devices.

Wireless networks, which include cellular and satellite-based systems, among other systems, are an important and growing element of the communications infrastructure. Cellular and satellite-based systems and networks provide an alternative to wireline networks because they are potentially accessible from any point on the globe without the cost of installing a wire or cable. Rather than relying on wired connections, wireless devices (such as cellular telephones) are essentially sophisticated radio devices that send and receive radio signals. These devices connect to a wireless network—which may also interact with the PSTN, depending on the type of connection—that enables the wireless telephone to connect to another wireless or wireline telephone. Wireless networks operate on a grid that divides large geographical areas (such as cities) into smaller cells that can range from a few city blocks to several miles. Each cell contains or is adjacent to a base station equipped with one or more antennas to receive and send radio signals to wireless devices within its coverage area, which can range from less than a mile to 20 miles from the base station. When a caller turns on a wireless device, the device searches for a signal on an available channel from a nearby base station to confirm that service is available. At that time, the base station assigns a radio frequency (also known as radio channels) to the wireless device from among the group of frequencies that the base station controls. Each base station is wirelessly linked to a mobile switching office, as well as a local wireline telephone

[11]A switch is a piece of equipment in a telephone carrier's central office facility that routes telephone signals between users and terminates connections when there is no longer a session to support.

network. The mobile phone switching office directs calls to the desired locations, whether to another wireless device or a traditional wireline telephone.

If a wireless caller is connecting with another wireless telephone, the call may go through the wireline network to the recipient's wireless carrier, or it may be routed wholly within the wireless network to the base station that is nearest the called party. On the other hand, when the wireless caller is connecting to a wireline phone, the call travels to the nearest base station and is switched by the caller's wireless carriers to a wireline telephone network. The call then becomes like any other phone call and is directed over the PSTN to the destination number.

NS/EP Communications in the Next-Generation Networks

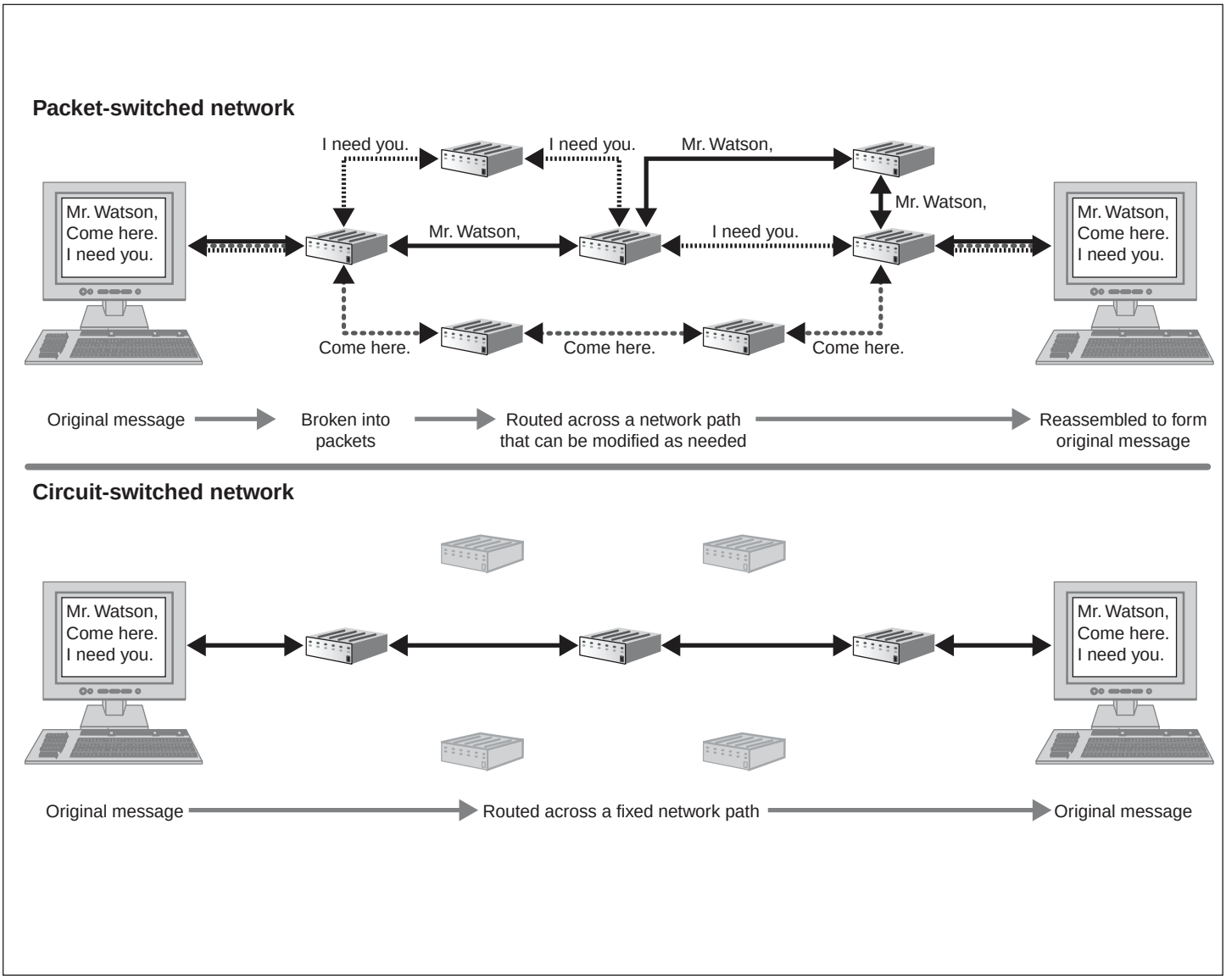
Because both voice and data transmissions have become common functions in daily life, an effective communications infrastructure that includes voice and data networks is essential to the nation's ability to maintain communications to enable public health and safety during a natural disaster, such as a hurricane, or a man-made disaster, such as a terrorist attack. Over the years, voice and data networks have evolved separately, with voice networks relying on circuit-switching methods while data networks largely use packet-switching techniques.[12] Thus, a user requiring voice, data, and videoconferencing services may have to use three separate networks—a voice network, a data network, and a videoconferencing network. The telecommunications industry has begun to address the limitations of legacy communications infrastructure (such as the PSTN) to provide integrated voice, data, and video services. Technological advances in these networks have led to a convergence of the previously separate networks used to transmit voice and data communications. These new converged networks—commonly referred to as next-generation networks—are capable of transmitting both voice and data on a single network and eventually are to be the primary means for voice and data transmissions. Converged voice and data networks use technology that is based on packet switching which involves breaking a message (such as an ongoing videoconference, images, or voice conversation) into packets, or small chunks of data. Using the packet's

[12]Conventional voice services use traditional telephone networks (such as the PSTN), which are based on circuit switching technology. Instead of breaking a message into packets, circuit-switching uses a dedicated channel to transmit the voice connection. Once all channels are occupied, no further connections can be made until a channel becomes available.

destination address, computer systems called routers determine the optimal path for the packets to reach their destination where they are recombined to form the original message. In doing so, packets can be transmitted over multiple routes rather than via a predetermined circuit, which, in turn, can help to avoid areas that may be congested or damaged, among other things. For example, information sent over the Internet is packet-switched, the transmission of which is defined by Internet protocol (IP).[13] Wireline and wireless carriers have begun transforming their networks to route voice data this way, called Voice over Internet Protocol (VoIP) rather than circuit-switched methods. The adoption of VoIP and other technological advances is changing the way in which people communicate and, as a result, are likely to become central to the future of NS/EP communications. Figure 1 shows a comparison between how information is transmitted via packet switching versus circuit switching. Industry analysts have said that although the transition to converged networks is well underway, they expect the process to take many years. Furthermore, NCS projects that half of the existing circuit-switched network will be transitioned to packet-based network by 2015 with the remainder reaching full transition by 2025.

[13]IP is a set of standards that enable the transmission of information such as text, video, and voice across a global network of networks. These protocols are updated as the uses and processes for transmitting voice and data communications evolve. For more information on the ongoing transition to the next version of IP, see GAO, *Internet Protocol Version 6: Federal Government in Early Stages of Transition and Key Challenges Remain*, GAO-06-675 (Washington, D.C.: June 30, 2006).

Figure 1: Packet-Switching Versus Circuit-Switching



Source: GAO analysis; Art Explosion (images).

Note: The example above demonstrates how an e-mail or similar message is transmitted between computers and/or enabled wireless devices using packet-based versus circuit-based methods. In the top example, the three packets that comprise the original message can travel various, different paths, and can be rerouted as necessary to successfully complete transmission.

Network Congestion Can Affect Communications Capabilities

Despite the evolution in telecommunications technology, congestion in the wireline and wireless telephone networks occurs. Damage or destruction of infrastructure, or extreme demand for service, can result in outages or congestion on the wireline and wireless networks which can impede or obstruct successful communications. During periods of congestion, the caller may encounter signs that the network is congested such as (1) a fast busy signal and (2) a prerecorded message alerting the caller that all circuits are busy. Given the importance of telecommunications to coordinating response and recovery efforts, it is essential that NS/EP officials successfully complete their calls even when there is damaged infrastructure or network congestion. For example, nationwide telecommunications congestion and failures during the September 11, 2001, attacks and Hurricane Katrina in 2005 were due, in part, to both damaged infrastructure and high call volume. Additionally, high call volume that has the potential to create network congestion can occur independent of emergencies. For example, Mother's Day has historically generated the highest volume of telephone calls of any day of the year. This increased call volume can create network congestion and cause call delay or disruption during normal operations; this congestion would also reduce the likelihood NS/EP personnel would be able to successfully place calls in the event of an emergency during this period. A similar issue exists for text messaging, wherein high volumes of text transmissions can create network congestion. For instance, on New Year's Eve, a spike in the number of text messages transmitted in the minutes immediately preceding and following midnight could overload cellular networks. The effects of this congestion could be severe for emergency responders in the event they needed to coordinate planning for or response to an emergency at that time.

Organization and Responsibilities of the National Communications System

As part of the creation of DHS under the Homeland Security Act of 2002, NCS was transferred to DHS from the Department of Defense.[14] Within DHS, NCS is organized as part of the Office of Cyber Security and Communications and has a fiscal year 2009 budget of $141 million. While the Secretary of Homeland Security has overall responsibility for the broader NCS organization,[15] the duties are delegated to the NCS Manager who has primary responsibility for day-to-day activities of the NCS,

[14]Pub. L. No. 107-296, § 201, 116 Stat. 2135, 2145-49 (2002).

[15]The duties of the NCS and the NCS Manager are set forth in Executive Order No. 12,472, 49 Fed. Reg. 13,471 (April 3, 1984).

including coordinating the planning and provisioning of communications services that support NS/EP needs. Central to its functions are the partnerships that NCS has established with federal, state, and local government entities, and with the service providers and equipment vendors that provide wireline and wireless communications services to support NS/EP communications. For example, NCS has long-standing relationships with industry groups such as the National Security Telecommunications Advisory Committee (NSTAC)—a presidentially appointed committee of industry leaders—that help keep it abreast of changes in the commercial telecommunications marketplace.[16] The committee provides industry-based analyses and recommendations to the President and executive branch regarding telecommunications policy and proposals for enhancing national security and emergency preparedness.

Since joining DHS when DHS became operational in March 2003, federal policies provided that NCS's responsibilities include, among other things, serving as the lead coordinating agency for communications issues (defined as emergency support function no. 2, or ESF-2), under the National Response Framework.[17] As part of this responsibility, when significant impact to the communications infrastructure occurs or is expected, NCS is to serve as one of the primary agencies to (1) support the restoration of the communications infrastructure and (2) coordinate the deployment of federal communications support to response efforts.[18] As part of its ESF-2 role, NCS conducts and/or supports training and exercises intended to test and improve response and recovery capabilities needed in the event of an emergency or disaster. For example, NCS has supported exercises that model emergency scenarios that include potential and actual impacts to the communications infrastructure. In addition to its ESF-2 responsibilities, NCS serves as the Sector-Specific Agency to lead the federal government's efforts to protect critical

[16]As of May 2009, the NSTAC is comprised of 22 industry leaders appointed by the President, usually chief executive officers, from telecommunications companies, network service providers, information technology firms, finance, and aerospace companies.

[17]The National Response Framework, issued by DHS in 2008, is the policy document that is to guide how federal, state, local, and tribal governments, along with nongovernmental and private sector entities, are to collectively respond to and recover from all hazards, including catastrophic disasters, such as Hurricane Katrina.

[18]Additionally, NCS is charged with facilitating the recovery of systems and applications in the event of a major Internet disruption caused by a cyber attack, among other things.

communications infrastructure.[19] In this regard, NCS works with industry that owns and operates the vast majority of communications infrastructure to develop strategies to protect against and mitigate the effects of natural disasters or manmade attacks against critical communications infrastructure. As part of this function, NCS is working with industry to develop a risk assessment methodology for use in assessing the communications sector's overall exposure including the threats, vulnerabilities, and consequences of an incident such as a natural disaster or man-made attack.

Within NCS, the National Coordinating Center for Telecommunications (NCC), which serves as the operational component, is an industry-government collaborative body that coordinates the restoration and provisioning of NS/EP communications services during crises or emergencies.[20] The NCC consists of officials from 24 government agencies and 49 companies including eight industry members that are co-located at the center (such as AT&T, Sprint, and Verizon) as well as nonresident members that comprise the telecommunications sector—wireless companies, cable companies, internet service providers, satellite providers, and communications equipment manufacturers and suppliers, among others. Since January 2000, the center also functions as the Telecommunications Information Sharing and Analysis Center to allow information sharing between representatives of the telecommunications companies. During a disruption to telecommunications services, the NCS, through the NCC, coordinates with both resident and nonresident members with the goal of restoring service as soon as possible. According to NCS, this partnership allows both industry and government to work in close proximity, helping to ensure that NCS successfully executes its mission. For example, during the 2008 hurricane season, the NCC worked

[19]The National Infrastructure Protection Plan (NIPP), first released by DHS in 2006 and updated in 2009, is intended to integrate activities and strategies for the protection and continuity of critical infrastructure and key resources, such as communications infrastructure and networks, and outlines partnerships and responsibilities across federal, state, local, tribal, and private agencies. For example, federal agencies identified as the Sector-Specific Agency—the lead federal agency for a given sector's protection—are responsible for, among other things, developing and implementing a Sector-Specific Plan to apply the NIPP to the unique characteristics and conditions of their sector.

[20]NCS, through the NCC, manages the Telecommunications Service Priority program—a program that provides priority provisioning and restoration of telecommunications services that support emergency operations facilities for certain federal, state, and tribal governments, and other entities. For more information about this program, see appendix III.

with its government and industry partners to identify communications assets and infrastructure in the impacted areas and develop pre- and post-landfall strategies and response activities to help ensure availability of communications.

NCS Provides Priority Calling Services for NS/EP Personnel and Has Designed Mechanisms to Manage Access to These Services

In order to overcome network congestion, NCS has implemented priority calling programs to provide NS/EP personnel within all levels of government, as well as the private and non-profit sectors, with communications services during incidents of national security or emergency that can overwhelm the telecommunications network. [21] The two primary programs NCS provides to deliver priority calling are the Government Emergency Telecommunications Service (GETS) and the Wireless Priority Service (WPS). NCS has undertaken a number of outreach efforts to help increase participation in these priority calling programs and has designed controls to help ensure the use of these programs is only for authorized personnel and purposes.

NCS's Two Main Programs Provide Priority Calling for NS/EP Personnel in the Event of Network Congestion During Emergencies

NCS has implemented two main programs intended to overcome busy networks during periods of congestion or network failure due to abnormally high usage or infrastructure damage; the GETS program provides wireline priority calling, and WPS provides wireless priority calling for authorized NS/EP officials.

According to NCS, it established GETS in conjunction with the nation's telecommunications industry to meet White House requirements for a nationwide voice and limited data service intended for authorized personnel engaged in NS/EP missions.[22] GETS is designed to provide priority treatment in the wireline portions of the PSTN during an emergency or crisis situation when the PSTN is congested and the probability of completing a call by normal means has been significantly decreased. For example, during the 1995 Oklahoma City Bombing—one of

[21]Priority calling is provided through special enhancements embedded in the PSTN and wireless networks to identify calls made by authorized users as a high priority. These enhancements automatically place the call higher in the queue and increase the probability that the call will be successfully completed over other calls made through traditional means.

[22]GETS is designed to support low-speed data transmissions via facsimile machines or secure telephone equipment. Such data transmissions do not exceed 56 kilobytes which is equivalent to the speed for dial-up modems.

Illustration: The September 11, 2001, Terrorist Attacks

The September 11, 2001, terrorist attacks in New York City and the Washington, D.C., area inflicted extensive damage to telecommunications infrastructure and, combined with increased call volume, resulted in network congestion. While much of the infrastructure damage occurred in New York City, resulting in immediate service disruption in the disaster area, the attacks also disrupted voice communications nationally. When the collapse of the twin towers indirectly caused damage to a telecommunications center owned by Verizon, about 182,000 voice circuits and 1.6 million data circuits, among other things, were lost. In New York City, over 20 base stations in the immediate disaster area were damaged or destroyed, resulting in widespread cellular outages. Throughout the course of the day, heavy call volume across the United States at times reached up to 250 percent of normal levels and greatly overloaded the telecommunications networks, according to NCS. These events had a devastating effect on people's ability to make calls into, within, and out of the immediate disaster areas. The network damage combined with increased call volume made it difficult for NS/EP officials in the New York and the Washington, D.C., areas to communicate using traditional calling methods in order to coordinate emergency response and recovery efforts.

NCS describes the 2001 terrorist attacks as the first large-scale emergency event in which the performance of GETS service was tested. Despite the network congestion and damage, according to NCS, the GETS service remained available and helped ensure that authorized NS/EP personnel had alternative means to communicate. For the period from September 11 to September 18, 2001, NCS reports that more than 19,000 calls were attempted of which 18,117 were successfully completed resulting in a call completion rate of 95 percent. NCS also reported that it distributed about 1,900 new GETS cards during the event.

the earliest uses of GETS in an emergency event—a high call volume of three times more than the usual volume resulted in an overload of the telephone network in the Oklahoma City area, according to NCS. During this emergency event, officials from the federal government and the private sector were able to successfully complete about 300 calls using the GETS service. According to a senior official from the Florida Division of Emergency Management, GETS was also used in Florida during Hurricane Katrina. Prior to hitting the Gulf Coast, the hurricane made landfall in South Florida, damaging the communications infrastructure and resulting in network congestion that prevented Florida emergency management officials from completing calls. According to this official, GETS allowed Florida emergency management officials to circumvent the congested lines and successfully complete calls.

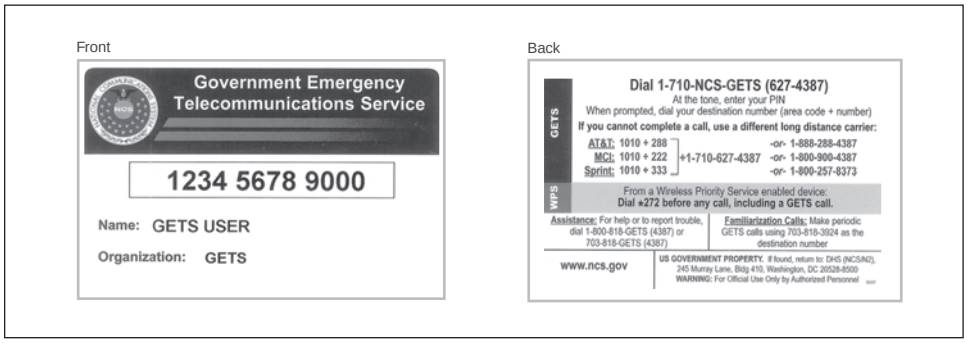
To activate a GETS call, subscribers follow a three-step process similar to that of using a traditional calling card. First, subscribers must dial the universal access number by using equipment such as a standard desk phone, payphone, secure telephone, cellular phone, VoIP telephone, or facsimile. Next, a tone prompts the subscriber to enter their GETS personal identification number (PIN) found on the calling card distributed to the subscriber. (Figure 2 shows the GETS calling card that is provided to each authorized NS/EP subscriber.) Lastly, the subscriber is prompted to enter a destination telephone number. Once the calling party's identity is authenticated (via the PIN), the call receives priority treatment that increases the probability of call completion in damaged or congested networks. GETS is designed to achieve a probability that 90 percent of calls made via the PSTN will be successfully completed—that is, establish a connection with the intended called party—during periods of network congestion or outage.[23] The service achieves a high probability of call completion through a combination of features such as re-routing GETS calls around network blockage areas, routing calls to a second or third carrier if the first carrier's network is congested, and queuing pending GETS calls for up to 30 seconds, among other things.[24] Subscribers can

[23]NCS describes a successful connection when using GETS as one in which the calling party gets (1) an answer by the called party, (2) a ring but no answer, or (3) a traditional busy signal.

[24]Early in the GETS program, the number of calls successfully completed during the time immediately following emergency events varied, but as the program has matured, GETS has increasingly achieved or surpassed its intention to complete 90 percent of calls. See appendix IV for the number of calls completed during past emergency events since the 1995 Oklahoma City bombing.

place local, long distance, and international calls; however, it is not possible to use GETS to dial a toll-free destination number.[25] When using GETS, subscribers are billed by the wireline carrier at a rate of $0.07 to $0.10 per minute for calls within the United States and its territories.[26] As of April 2009, the program had grown to more than 227,000 subscribers, according to NCS.

Figure 2: GETS Calling Card



Sources: GAO, NCS.

As significant increases in wireless telephone subscribers occurred in the mid-1990s, the concept for a wireless priority capability first emerged, according to NCS; however, it was in the wake of the events of Tuesday, September 11, 2001, that the Executive Office of the President, through the National Security Council, directed NCS to implement a wireless priority capability. According to NCS, in the aftermath of the terrorist attacks, wireless carriers experienced significant difficulties trying to cope with the unprecedented call volume. The reported increase in the number of phone calls in the Washington, D.C., New Jersey, and New York City areas made between 9:00 a.m. and 12:00 p.m. was 2 to 10 times the number on an average Tuesday. The resulting effort became WPS, which is a

[25]Most toll-free numbers translate to a traditional 10-digit toll number. As such, NCS encourages GETS subscribers to obtain the regular 10-digit toll number for organizations that they may need to coordinate with during emergencies. NCS defines international calls as those that occur outside the United States, Canada, and parts of the Caribbean. For such calls, international calling privileges are applied to a GETS card only upon request and priority treatment is limited to US telephone networks. For example, for an outbound international call, once the call leaves US telephone networks, it will no longer receive priority treatment.

[26]For GETS calls made from, to, or between international locations, prevailing international calling rates apply.

Illustration: 2005 Gulf Coast Hurricanes

In August 2005 and September 2005, the Gulf Coast was struck by two hurricanes (Katrina and Rita). On August 29, 2005, Hurricane Katrina made landfall in Louisiana and significantly damaged or destroyed the communications infrastructure in Louisiana, Mississippi, and Alabama. According to the FCC, the storm caused outages for over 3 million telephone customers. A substantial number of central offices were flooded and consequently forced out of operation, according to NCS. Additionally, about 1,500 cellular sites were damaged and subsequently unable to provide wireless service. NCS reported that the infrastructure damage caused by the hurricane was among the worst of any disaster in the nation's history. Moreover, Hurricane Katrina was the first large scale test of WPS in an emergency event, according to NCS. Despite the destruction and damage, from August 29 to September 5, 2005, more than 27,000 GETS and about 3,400 WPS calls were successfully completed achieving a call completion rate of 95 and 89 percent respectively, according to NCS.

On September 24, 2005, Hurricane Rita made landfall between Sabine Pass, Texas, and Johnson's Bayou, Louisiana. Although the storm disabled thousands of phone lines, Hurricane Rita did not cause the extensive damage that occurred during Hurricane Katrina. In contrast, the number of GETS calls attempted was about 50 percent less than the totals for Hurricane Katrina. From September 24 to September 29, 2005, 11,145 GETS calls were attempted, of which approximately 10,740 were successfully completed resulting in a call completion rate of about 96 percent. During the same period, of the 1,109 WPS calls attempted, 983 were successfully completed resulting in a call completion rate of about 89 percent. According to NCS, the majority of GETS and WPS calls that failed during Hurricanes Katrina and Rita were largely a function of damaged infrastructure rather than network congestion.

subscription-based service designed to help increase the probability of call completion for NS/EP personnel that rely on wireless devices—typically, a cell phone[27]—while performing duties related to emergency response and recovery. To that end, WPS provides nationwide wireless priority calling capabilities, from call initiation through to when a connection is established with the called party, to NS/EP personnel during natural or man-made disasters or emergencies that result in network congestion or outages in the nation's wireless networks.

Like the average U.S. consumer, NS/EP personnel have great flexibility in choosing a wireless carrier for wireless communications services. In order to assure that WPS capabilities are accessible by the majority of wireless services that could be used by NS/EP personnel, NCS has taken steps to ensure that the nationwide and regional wireless carriers that provide services to the greatest number of wireless customers upgrade their networks to support WPS functionalities. As a result, authorized WPS subscribers are able to access WPS in nearly all the major wireless markets in the continental United States and its territories. Currently, WPS is supported by all the nationwide wireless carriers (AT&T, Sprint Nextel, T-Mobile, and Verizon Wireless). Additionally, regional carriers (such as Cellcom and Cellular South) that can help to provide WPS coverage in geographically remote or sparsely populated areas are at varying stages of updating their networks to support WPS.

To initiate a WPS call, authorized subscribers must dial *272 plus the destination number from their WPS-enabled cell phone.[28] If all radio channels in the caller's area are busy, the call will be placed in queue for up to 28 seconds for access to the next available local radio channel. WPS subscribers receive additional priority based on their office or position to ensure that communications are first available for senior leadership (see app. V for a description of how this priority is determined). While WPS provides priority access to the next available radio channel, it does not guarantee call completion as a WPS call may encounter further congestion while being routed through the wireline or wireless portions of the PSTN. Therefore, according to NCS, WPS is most effective when used in conjunction with GETS because GETS is also designed to help activate

[27]WPS functionality can also work in wireless devices such as a Blackberry provided the device has voice communications capability.

[28]WPS can be used to place calls from a cell phone to another cell phone or a wireline telephone device.

priority calling features in the wireless network in addition to the wireline network. Thus, using a GETS calling card after activating WPS can help to ensure a higher probability of call completion for calls placed from a cellular telephone to another cellular or wireline telephone number.

As with GETS, WPS subscribers incur expenses as part of their subscription; however, the WPS fee structure is more expensive. In addition to wireless calling plan fees, WPS subscribers must pay (1) a one-time activation fee of up to $10.00, (2) a monthly service fee of up to $4.50, and (3) a $0.75 per minute fee when WPS is invoked by dialing the WPS code, *272. These fees help wireless carriers to recoup the costs associated with providing NS/EP calling features in their respective wireless networks, according to NCS. As of April 2009, there are approximately 93,000 WPS subscribers, according to NCS.

Illustration: 2009 Presidential Inauguration

On January 20, 2009, about 2 million people attended the Presidential Inauguration held in Washington, D.C., to observe the swearing in of the 44th President of the United States. Because of the anticipated large crowds on the National Mall and immediate surrounding areas, as well as the presence of numerous senior government officials in the D.C. area, the federal government worked with its private sector partners to ensure the availability of communications during the inauguration activities. For example, in anticipation that observers would use cell phones and other wireless devices to communicate information and images of their experiences to family, friends, and television stations, NCS issued an advisory to GETS and WPS subscribers informing them of potential delays in using wireless communications and reminding them to use GETS and WPS if they have difficulty completing a call. NCS officials stated that from January 16 to January 20, 2009, they activated about 1,200 new GETS accounts and 3,700 WPS accounts—the majority of which were for law enforcement personnel and staff for the incoming administration.

During the 24-hour period covering inauguration day there was a combined total of 1,429 GETS and WPS calls attempted. NCS officials stated that there was unprecedented stress on cellular networks resulting in extreme congestion and numerous incidents of blocked calls even though wireless carriers had deployed mobile cellular equipment in the event area to augment the capacity of their networks. Of the 771 GETS calls attempted, about 99 percent were successfully completed, but of the 658 WPS calls attempted, 60 percent were successfully completed.

NCS Uses Outreach to Enlist Subscribers and Has Designed Controls to Help Ensure Priority Calling Services Are Used as Intended by Eligible Subscribers

Priority Calling Programs Available to Diverse Groups with NS/EP Responsibilities

NCS priority calling programs are primarily intended for officials with responsibilities for coordinating the functions critical to the planning, management, and response to national security and emergency situations—particularly during the first 24 to 72 hours following an emergency.[29] According to NCS, participants in its priority programs come from federal, state, local, or tribal government, and private industry or nonprofit organizations.[30] In order to subscribe to GETS and WPS, applicants must prove that their organization is engaged in activities essential to NS/EP functions including (1) national security leadership; (2) national security posture and U.S. population attack warning;[31] (3) public health, safety, and maintenance of law and order; (4) public welfare and maintenance of national economic posture; and (5) disaster recovery. Furthermore, these individuals must demonstrate that they perform a function that is critical to the planning, management, and response to national security and emergency situations. At the federal government level, personnel that qualify to subscribe to the GETS and WPS service range from staff in the Executive Office of the President to members of Congress and officials in federal departments and agencies. Nonfederal representatives such as state governors, mayors, police and fire chiefs, as well as personnel engaged in restoration of services such as telecommunications and electricity, are among those who can qualify to use the priority calling programs. Appendix V provides further details

[29]NCS programs are not for immediate, on-site emergency response, and are therefore not geared toward first responders, such as police, fire fighters, emergency medical personnel, and others who are among the first on the scene of an emergency.

[30]Nonfederal subscribers must be sponsored by the NCS or one of the 24 NCS member agencies.

[31]Population attack warning includes threat assessments and warnings of potential nuclear attacks, among other things, within the United States.

about the types of positions and functions that generally qualify for access to the GETS and WPS programs.

According to NCS, the number of personnel in the public and private sectors that perform functions critical to national security and emergency preparedness range from about 2 to 10 million people. In planning for future growth in its programs, NCS estimates that the communications network can successfully support up to 2 million priority subscribers. To that end, NCS has plans underway to achieve up to 2 million GETS subscribers. NCS officials have not yet finalized this goal or a goal for WPS subscribers but indicated that the WPS goal may be about 225,000 subscribers.[32] As of April 2009, NCS has 227,614 active subscribers in the GETS program. For WPS, there were 92,820 active subscribers. As table 1 shows, the federal government accounts for about 46 percent of active GETS subscribers and 72 percent of active WPS subscribers.

Table 1: Participation Levels in the GETS and WPS Programs as of April 2009

Category	GETS subscribers	WPS subscribers
Federal government	104,391	67,222
State government	25,969	4,464
Local government	48,348	9,054
Tribal government	82	4
Industry	47,509	12,010
Other NS/EP organizations	1,315	66
Total	**227,614**	**92,820**

Source: NCS.

NCS Conducts Outreach to Enlist Subscribers, Although WPS Cost Can Be a Barrier to Participation

NCS has undertaken several outreach efforts to help increase awareness of and participation in its priority calling programs across essential NS/EP personnel. These efforts include, for example, attending emergency management conferences, writing articles for emergency management and telecommunications publications, as well as deploying outreach coordinators to promote NCS's priority calling programs. For example, since 1995, NCS has participated in various conferences hosted by the National Emergency Management Association (NEMA) and the International Association of Emergency Managers to facilitate its outreach and marketing efforts. At these conferences, NCS operates display booths

[32]The process NCS used to establish these subscriber goals is discussed later in the report.

and distributes marketing materials and may conduct presentations to help increase awareness about the benefits of its priority calling programs. NCS officials and/or contract personnel attend approximately 30 conferences annually that target federal, state, local, and industry NS/EP members. NCS officials told us that it has enlisted all but 1 of the 50 state emergency operations centers to participate in GETS and/or WPS because of initial contacts made at events hosted by NEMA. Similarly, to expand its outreach to other essential emergency personnel who also rely on wireline and wireless communications services during emergencies such as those from water, gas, and electric companies, NCS has attended conferences and other events that attract this target audience.

In addition to attending conferences to reach general NS/EP personnel, NCS has implemented targeted outreach efforts to groups such as governors and state homeland security advisors; critical infrastructure facilities, such as nuclear power plant operations centers, national and regional airport traffic control centers; and federal officials who serve as the designated continuity coordinator within their respective agency. NCS officials report that they have generally made progress in enlisting these groups in its priority calling programs. For example, in 2008 NCS enlisted 56 of 71 federal continuity coordinators in the GETS program. NCS also worked with the Nuclear Regulatory Commission and the Federal Aviation Administration to ensure that GETS cards are available at all nuclear facilities and at all national and regional airports respectively. In 2005, NCS began deploying regional outreach coordinators to promote NCS's priority calling programs to emergency management officials and other key decision makers (such as governors) that coordinate emergency response and recovery and continuity of government in state and local government.[33] NCS credits the addition of the regional outreach coordinators as a key reason for significant growth in enrollment rates across all NS/EP categories since 2005.

Despite the outreach efforts NCS has undertaken to increase participation in its priority calling programs, WPS fees are a barrier to participation in the program, according to NCS. For example, as of October 2008, while the majority of federal continuity coordinators enrolled in the GETS program, only 44 percent or 31 of 71 federal continuity coordinators are

[33]The regional outreach coordinators are not NCS staff but rather part-time staff hired by NCS's contractor—Computer Sciences Corporation. Currently, there are six regional outreach coordinators.

WPS subscribers. Additionally, while 24 of 56 state homeland security advisors subscribe to GETS, only 10 subscribe to WPS, and only 8 governors subscribe to WPS while 43 subscribe to GETS. The subscriber levels for the GETS program are more than twice that of the WPS program as shown in table 2. For each WPS-activated device, subscribers pay an initial activation fee of $10, a monthly fee of $4.50 as well as a usage fee of $0.75 per minute. In 2006, NCS commissioned a study to examine barriers to WPS participation, among other things. According to NCS, the survey results found that program cost was the single largest impediment to participating in WPS. Similarly, our work showed that WPS fees can be a burden particularly for NS/EP members at the state and local government level due to limited financial resources. At least one-third of 37 state and local government entities that we spoke with—including some who subscribe to WPS—stated that WPS fees affected the extent to which they participate in the program. For example, an official from the Oregon Emergency Management Division stated his organization's participation in the WPS is relatively low because the overall WPS costs can become very expensive when calculated across all subscribers in a particular agency. Another official from Ohio Emergency Management Division stated that his organization does not participate in the program due to budget constraints even though they consider WPS to be more beneficial than GETS because the wireless component is more widely used among staff performing emergency management functions.

Table 2: GETS and WPS Subscriber Rates and Program Fees

Program	Number of subscribers (as of April 2009)	One-time activation fee	Monthly fee	Usage fee
GETS	227, 614	$0	$0	$0.07 to $0.10 per minute
WPS	92,820	$10 per device	$4.50 per device	$0.75 per minute

Source: NCS.

In light of concerns about WPS subscription costs, NCS has been exploring ways to minimize the burden of program fees for its intended subscribers. For example, NCS examined the feasibility of the federal government subsidizing all or part of the WPS fees; however, DHS and OMB determined that this may not be feasible because of questions about the federal government's ability to sustain these costs in the future. Further, NCS has had discussions with the wireless carriers to explore ways to eliminate or defray the costs; however, the wireless carriers

maintain that the fees are necessary to operate and maintain WPS capabilities in their networks in order to comply with the NCS requirements. Nevertheless, some carriers have made arrangements with WPS subscribers to provide WPS as part of a bundled telecommunications service package, which, according to NCS, can defray the costs. NCS officials have stated that they plan to continue to explore ways to address the WPS cost issue as it believes doing so can help increase participation in the WPS program.

NCS Has Designed Procedures and Controls to Limit Access to Authorized Subscribers

Federal internal control standards[34] state that documented policies and procedures to control access to agency resources and records to authorized individuals are essential to accountability and safeguarding assets, and NCS has developed and implemented policies and procedures to help ensure that access to its programs is limited to authorized subscribers. NCS has standard operating procedures that document how potential subscribers can gain access to its priority calling programs. To be approved for a GETS card and/or WPS service request, the NCS contractor must be able to confirm that the request is from an organization that performs any of five NS/EP functions mentioned earlier in this report. If the organization's NS/EP status is unclear (such as chemical suppliers, radio and TV stations, or housing shelters), the organization must obtain sponsorship from NCS, 1 of the 24 NCS member agencies, or through the emergency management agency in the state or locality in which they operate. Once approved,[35] the organization must identify a primary point-of-contact (POC) and an alternate POC, if available. Within each organization, the POC is the primary liaison between NCS and individual GETS and WPS subscribers. The POC is responsible for (1) determining who should have access to the GETS and WPS service within their organization;[36] (2) processing all GETS and WPS service requests; (3) notifying NCS of changes to subscriber account data such as changes in name, telephone number, or eligibility status; (4) reviewing and certifying monthly subscriber calling data; (5) familiarizing subscribers with GETS

[34]GAO/AIMD-00-21.3.1.

[35]According to NCS, approximately 4 percent of the GETS and WPS service requests are denied because the requesting organization does not have a function that is clearly related to NS/EP and most often are industry organizations that provide services that are only tangentially related to NS/EP functions.

[36]According to NCS guidance, access should be limited to staff who have a clearly defined NS/EP duty.

and WPS functionalities,[37] and (6) annual verification of subscriber eligibility.

As evidenced by their responsibilities, NCS relies on the POCs to manage almost all aspects of subscriber accounts. However, through an annual verification process, NCS seeks to ensure that POCs provide a current account of subscribers who meet the eligibility requirements. NCS will make multiple attempts over a 90-day period to ensure the POC responds to its request to validate subscriber information, according to NCS officials and failure to do so can result in cancellation of the subscribers' account. NCS officials told us that they designed these verification procedures to help ensure that only eligible subscribers have access to NCS's priority programs. From our review of selected GETS and WPS records as a limited check on whether current positions meet eligibility criteria, we found that the GETS and/or WPS accounts for former members and delegates of the U.S. House of Representatives and the U.S. Senate in the 109th Congress were terminated in accordance with NCS's procedures. However, when we reviewed accounts for 15 immediate past heads of federal departments and agencies as of August 2008, we found 4 of 15 instances where these officials' GETS and/or WPS accounts were not terminated. We brought this to NCS's attention and officials told us that these accounts were terminated effective July 2009. Further, NCS plans to institute new processes that are to include more frequent monitoring of GETS and WPS accounts that coincide with administration changes to ensure that the subscriber's account status is appropriately updated.

In addition to verifying whether a subscriber is authorized to enroll in NCS's programs, telephone carriers as well as NCS and its contractors have applied fraud detection mechanisms intended to protect against fraudulent calls in their networks as well as others that are unique to the GETS and WPS services. For example, carriers have fraud detection for general telephone use that also detects fraud for GETS and WPS services. These detection mechanisms include detection of a single PIN being used simultaneously from multiple originating phone numbers and calls of long duration, among other things. NCS and its contractor said that they have also instituted procedures to determine the legitimacy of calls and to take

[37]In addition to the POC's responsibilities to familiarize subscribers, NCS has incorporated priority calling programs in several training or preparedness exercises that it conducts or participates in with the goal of keeping subscriber's knowledge of the services current because of concerns that subscribers may not be readily prepared to effectively use GETS and WPS during an emergency.

corrective action, which may include disabling the GETS and WPS account in question. According to NCS, it has rarely found actual cases of fraud and abuse. For example, although there were 45 reported cases of potential fraudulent calls in 2008, through further investigation NCS determined that the calls were legitimate and the reports typically resulted from calls placed by authorized subscribers conducting test calls or participating in preparedness exercises. Even if fraudulent calls were made using GETS and WPS services, the implications would likely be minimal due to two factors. First, the subscriber levels for GETS and WPS, which currently stand at more than 227,000 and about 93,000 respectively, are well below the capacity of the system. For example, according to NCS, the GETS system was designed to support up to 2 million subscribers, however, the current subscriber level—227,000 GETS subscribers—is well below the intended capacity. Second, the potential financial implications for the federal government would be nominal as NCS does not bear the costs for GETS and WPS charges for nonfederal subscribers. State and local governments as well as private and nonprofit organizations bear all of the costs related to the usage of the GETS and WPS programs. In general, NCS may cover GETS charges for federal departments and agencies up to an annual budget threshold; however, federal agencies may be responsible for these costs in the event of fraudulent or abusive calling activity. Federal and nonfederal WPS subscribers are responsible for all associated costs.

Initiatives Exist to Address Challenges in NCS's Operating Environment, but Planning Efforts to Leverage Evolving Technology Could Be Strengthened

The delivery of NCS's priority calling services faces challenges related to the inherent vulnerabilities of the communication infrastructure such as downed phone lines, damaged cell towers, and broken circuits and switches. Therefore, NCS seeks to build redundancy into the communication capabilities and services it provides and has explored satellite technology to overcome such challenges. However, methods for implementation and evaluation of its related satellite pilot were unclear and NCS subsequently terminated the pilot. In addition, NCS faces the challenge of keeping pace with the rapid evolution in telecommunications technology and it is working with the telecommunications industry to ensure that NS/EP communications requirements are integrated into the next-generation communications networks. However, NCS's planning efforts to update its programs as technology evolves could be strengthened.

NCS Launched the Satellite Pilot Program without Clear Methods for Implementation and Evaluation and Has Since Terminated the Pilot

In December 2007, NCS launched a satellite pilot program to provide an alternative means to support NS/EP communications to help circumvent network congestion or outages in the PSTN. According to NCS, because GETS and WPS leverage PSTN-based infrastructure to enable communications for NS/EP personnel, these programs can be limited in their ability to provide services when damage renders the PSTN infrastructure inoperable, such as it did in certain regions affected by Hurricane Katrina. In February 2004, the National Security Telecommunications Advisory Council (NSTAC) issued a report to the Executive Office of the President recommending that NCS develop a satellite capability to facilitate NS/EP communications. The communications challenges that arose during the 2005 Gulf Coast hurricanes due to flooding and loss of power, among other things, underscored the need for a communications capability that could transcend these infrastructure issues, and NCS observed that satellite networks appeared to be the least disrupted communications service during this event. To that end, 3 years following the 2005 Gulf Coast Hurricanes, NCS launched the first of two phases of the satellite pilot program intended to enable unclassified voice connectivity during emergencies that leverages satellite infrastructure independent of the PSTN. As part of the pilot, according to NCS officials, NCS is to provide participants with a wall-mounted unit that consists of battery backup and surge protection and a satellite phone. According to NCS officials, one objective of the pilot is to evaluate two voice communications capabilities via satellite technologies: push-to-talk communication functions and GETS priority calling using a satellite phone. Push-to-talk is a radio-like function, similar to that of a walkie-talkie or three-way radio, with which a group of users would connect back-and-forth with each other from their individual satellite phones at the push of a button without having to make individual calls.[38] NCS also plans to use the pilot to test the ability to make GETS priority functions to call a wireline or cellular telephone number using a satellite phone. According to NCS, calls made from a satellite phone to a cellular or wireline telephone can bypass congested or damaged areas of the PSTN, as such calls can be routed via satellite networks to a less congested area of the PSTN, thus increasing the likelihood of call completion. However, because these calls are still expected to travel

[38]This group of users is known as a talkgroup. The radio users are structured into talkgroups so that they can share calls and messages as a group. Satellite radio talkgroups allow authorized NS/EP users to participate in a nationwide two-way satellite communications whereby each group member can either listen to or join in the conversation taking place over the talkgroup.

through the wireline and wireless portions of the PSTN to reach their destination, they could face congestion while trying to connect to the PSTN. To bypass such congestion, NCS officials stated that the GETS priority calling features must be supported on the satellite networks, which currently they are not. By inserting priority calling functionality in satellite networks, GETS calls that originate from a satellite phone will have a greater likelihood of being successfully routed through the PSTN in times of network congestion. NCS officials also told us that other objectives for the pilot include determining the extent to which satellite communications meet NS/EP needs and educating NS/EP personnel about the availability of satellite communications for use in emergency situations.

Although the pilot began in December 2007 and is estimated to last 3 years and cost $1.9 million, as of May 2009 NCS could provide little documentation to explain its objectives for the pilot, and how it planned to meet those objectives. For example, while NCS officials provided briefing slides to elaborate on the pilot program and describe some high-level program objectives, these slides lacked key program information such as a methodology for evaluating pilot results to determine whether the intended pilot objectives were met, and milestones for pilot implementation. Specifically, although the briefing slides noted the planned number of sites to be included in the pilot, it did not specify when the site selection would be completed, when sites would begin participating in the pilot, or the data that would be collected and analyzed to evaluate pilot performance. According to NCS, the pilot was to include up to 65 participating sites comprising emergency operations centers supporting federal and state government, and NCS officials stated they had initially identified six sites and conducted an evaluation of additional candidate sites. However, NCS officials could not provide any detailed information about what criteria or rationale was used to determine which sites to include in the pilot.[39] For instance, while NCS officials told us they evaluated sites based on two factors (effects of disaster scenarios and population served by the respective location), they did not provide any documentation that outlined these details or demonstrated how these two factors would help it determine if the pilot objectives were met. In addition, as part of phase two of the satellite pilot, NCS officials said they

[39]The six participating sites include the operations centers operated by (1) NCS, (2) the three major nationwide carriers (AT&T, Sprint, and Verizon), and (3) NCS's contractors that support GETS and WPS (Computer Sciences Corporation and Science Applications International Corporation).

intended to use lessons learned from the experience of phase one of the pilot to migrate the satellite capability to another NCS technology initiative already underway; however, NCS launched the pilot program without the benefit of completing a methodology to evaluate the pilot. In addition, NCS could not provide documentation as to how the results of the pilot would be evaluated and used to inform future program decisions such as future rollout. Exacerbating the absence of program planning documents, is that key staff originally involved in the pilot have since left NCS resulting in the loss of institutional knowledge about the original decisions and planning for the pilot.

In April 2009, officials told us that the pilot had been placed on hold as they were reassessing various aspects of the pilot such as conducting a cost-benefit analysis to determine which satellite provider and equipment to use. After reassessing the pilot, NCS subsequently terminated the pilot in May 2009, according to NCS officials. NCS officials acknowledged that the pilot program needed improved planning and metric documentation and noted that NCS took a number of issues into consideration including the current availability of push-to-talk capability among existing satellite service providers in making the decision to end the pilot.

NCS Is Restructuring Efforts to Keep Pace with Emerging Telecommunications Technology, but Further Development of Plans and Program Details Would Better Inform Program and Budget Decisions

NCS is mandated by presidential directive to support the use of technological advances and evolutionary communications networks for NS/EP communications functions assigned to NCS, including programs it provides to maintain continuity of communications.[40] GETS and WPS are designed to operate on the circuit-based PSTN platform, while packet-based IP networks are increasingly used and expected to eclipse the use of circuits in telecommunications, according to representatives from the telecommunications industry. As a result, NCS and its GETS and WPS subscribers face the risk that these services will not work within these next-generation networks. To avoid disruption or degradation of service, NCS plans to migrate existing GETS and WPS priority calling features from circuit-based networks to public telephone packet-based networks to assure that the programs will be operable on new technologies available

[40]Executive Order 12,472, which outlines the responsibilities of the NCS as it relates to NS/EP communications, states that NCS shall develop for consideration a recommended evolutionary telecommunications architecture designed to meet the current and future NS/EP telecommunications requirements and shall ensure that current and future telecommunications standards are utilized as the basis for the federal telecommunications standards.

from wireline and wireless carriers.[41] NCS's efforts to integrate new and existing NS/EP services into next-generation networks (NS/EP NGN) [42] consist of two primary components: (1) priority voice communications and (2) priority data communications that includes priority treatment for the transmission of e-mail, streaming video, text messaging, and Internet access, among other things.

NCS has taken steps to assess how the evolution of technology will affect the provision of its priority calling services and to plan for these changes. In addition, because NCS's programs are largely dependent on the telecommunications industry, which owns and operates most of the communications infrastructure on which GETS and WPS operate, NCS has partnered with industry to inform and implement these changes. According to NCS, adding the priority voice communications component of NS/EP NGN is less challenging than adding data services because while priority calling programs exist (GETS and WPS), priority data programs do not. NCS officials estimate that at least one of the three major carriers (AT&T) will begin supporting priority communications via VoIP by 2010 and the remaining carriers (Sprint and Verizon) by 2014. However, less is known about supporting priority data communications and, consequently, this effort is more challenging, according to NCS officials.

The challenge to develop priority data services is not a new issue; in 2006 we reported that the obstacles to offering the service include both technical and financial challenges.[43] For example, the commonly used version of Internet protocol (known as IPv4) does not guarantee priority delivery and has certain security limitations that may not adequately protect information from being monitored or modified while in transit via the Internet. Though the next version (IPv6) has features that may help prioritize the delivery of data in the future and provide enhanced security, it is not yet widely adopted. Also, in March 2006, the NSTAC reported that while the NS/EP NGN initiative is expected to offer improvements for NS/EP communications, the security challenges are likely to have an operational impact on the transmission of NS/EP communications if not

[41]According to industry experts, current and next-generation networks will operate in parallel until the circuit-based portion of the PSTN is phased out.

[42]For the purposes of this report, we refer to NCS's efforts to plan for and implement these NS/EP voice and data services on the next-generation networks as the NS/EP NGN.

[43]GAO-06-672.

adequately addressed.[44] Specifically, they noted that robust user authentication methods are needed in order to enable NS/EP personnel to share information in a secure manner. While these authentication methods are to be available through IPv6, they are not available through IPv4, which is the more widely used version. In April 2009, NCS officials told us they have not yet finalized what types of authentication methods or which IP version would support the NS/EP NGN, though they plan to request additional information from industry experts about how to address authentication issues. In our 2006 report, we noted that NCS had previously requested information from private companies on the potential for prioritizing services, and found that there was no offering for a priority service, nor was there any consensus on a standard approach to prioritization. Although, NCS, in conjunction with international standards bodies, completed the first set of engineering standards for priority VoIP in December 2007, as of May 2009, standards had not yet been established to support prioritized NS/EP NGN data communications.[45] Moreover, NCS could not provide further detail as to how its planning efforts account for the different capabilities of the available technology, and the associated challenges.

In addition to NCS not fully detailing how it plans to mitigate existing challenges, it also could not provide details about key program elements such as, the estimated total costs, and a timeline for implementation of the NS/EP NGN initiative. Officials said the information was not yet finalized. Our previous work on acquisition and technology investment management has shown that undertaking such efforts is strengthened by first ensuring that (1) an acquisition approach, such as the one for NS/EP NGN, is based on available technologies that support the intended capability; (2) cost estimates are realistic; and (3) risks have been identified and analyzed, and corresponding mitigation plans have been developed.[46] NCS officials told

[44]National Security Telecommunications Advisory Committee, *Next Generation Networks Task Force Report*, March 28, 2006.

[45]The international standards bodies involved in this effort include the Alliance for Telecommunications Solutions, The European Telecommunications Standards Institute's Telecoms and Internet Converged Services and Protocols for Advanced Networks, International Telecommunication Union-Telecommunication Standardization Sector, The Internet Engineering Task Force, and The Third Generation Partnership Project.

[46]GAO-07-424; *Department of Homeland Security: Billions Invested in Major Programs Lack Appropriate Oversight*, GAO-09-29 (Washington, D.C.: November 18, 2008); and *Defense Acquisitions: Restructured JTRS Program Reduces Risk, but Significant Challenges Remain*, GAO-06-955 (Washington, D.C.: September 2006).

us they planned to develop program plans that included this information, but as of May 2009 these documents were in the early stages of development, and officials stated they were finalizing cost and schedule estimates for the initiative, which may be greater than previously projected. In addition, for the last 2 years, Congress has raised questions about the absence of detailed program information such as costs of planned investments for some of NCS's programs, and NCS has faced difficulties in justifying its budget requests. For example, during the appropriations process for fiscal years 2008 and 2009, the House and Senate Committees on Appropriations raised questions about the intended investments in NS/EP NGN. Because of the lack of explanation about the significant increase in funds requested for fiscal year 2008 compared to the previous year, the House and Senate Committees on Appropriations stated that NCS had not adequately justified funding for the NS/EP NGN effort.[47] Consequently, Congress appropriated $21 million—about 60 percent less than requested—to DHS for NS/EP NGN.[48] In addition, the House of Representatives Committee on Appropriations directed DHS to brief them on the planned expenditures for NS/EP NGN in fiscal year 2008.[49] Again, for the fiscal year 2009 budget request for NS/EP NGN, the House of Representatives Committee on Appropriations raised questions about the lack of a thorough explanation of (1) information about planned investments, (2) clarity about how the initiative aligns with DHS's homeland security goals, and (3) information about the total costs to complete the initiatives.[50] As a result, Congress withheld half of the fiscal year 2009 funding for NS/EP NGN until NCS completes an expenditure plan to be approved by the House and Senate Committees on Appropriations that identifies the strategic context, specific goals and milestones, and planned investments.[51] Although NCS had planned to submit the expenditure plan to the Committees on Appropriations in

[47]In fiscal year 2008, DHS requested about $52 million for the NS/EP NGN initiative—a 270 percent increase over the $14 million provided in fiscal year 2007. See, H.R. Rep. No. 110-181, at 85 (2007) and S. Rep. No. 110-84, at 85-86 (2007).

[48]Consolidated Appropriations Act, 2008, Pub. L. No. 110-161, 121 Stat. 1844 (Dec. 26, 2007). *See also*, House Appropriations Committee Print for the Consolidated Appropriations Act, 2008.

[49]H.R. Rep. No. 110-181, at 85 (2007).

[50]H.R. Rep. No. 110-862, at 97, 100 (2008).

[51]Department of Homeland Security Appropriations Act, 2009, Pub. L. No. 110-329, 122 Stat. 3652, 3668 (2008) enacted as Division D of the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009, Pub. L. No. 110-329, 122 Stat. 3574.

January 2009, they have not done so, and as of May 2009, the plan was still being reviewed internally.[52]

Based on technological and planning challenges, NCS officials told us that in 2008 it began taking steps to restructure its acquisition approach to focus first on voice with data to follow much later. However, as noted by Congress in its response to NCS's fiscal year 2009 budget request, little is known about this restructuring, including key program information such as what capabilities will be delivered, total costs, and milestones. Moreover, despite requirements from Congress to articulate its strategy for the NS/EP NGN initiative, as of May 2009 NCS had not yet clearly defined program objectives and total costs, among other things. While NCS officials told us that they expect increased costs and schedule delays, they have not provided any further details or plans to mitigate these challenges, and it is unclear when important technological and program details of the restructuring will be finalized. In February 2009, NCS hired a new manager whose responsibilities include NS/EP NGN, who stated the need to plan for these issues and develop corresponding program plans that outline the NS/EP NGN acquisition approach including costs, milestones, and risk mitigation plans.

GAO and commercial best practices show that incorporating cost information and strategies to mitigate program and technical challenges are essential to successfully meeting program objectives and minimizing the risk of cost overruns, schedule delays, and less than expected performance.[53] As NCS moves forward with the NS/EP NGN effort, clearly defining and documenting its technical approach to achieve program objectives within the constraints imposed by known challenges—such as the limitations of available technologies and NCS's dependence on the telecommunications industry—could help provide reasonable assurance that an executable approach is in place to meet current and future NS/EP communications needs. Furthermore, such planning could provide a sound basis for determining realistic cost and schedule estimates and provide key stakeholders such as Congress with information they need to make funding decisions over time.

[52]Although Congress did not set a deadline for DHS to submit the expenditure plan, DHS officials told us they planned to submit the plan by January 2009 to avoid delays in moving forward with planned activities.

[53]GAO-09-29 and GAO-06-955.

NCS Has Implemented Strategic Planning Efforts, but These Could Be Strengthened by Incorporating Key Planning and Performance Measurement Practices

NCS has been developing its strategic plan since 2007, and although officials have stated that a strategic plan could help inform their efforts, it has not been finalized. In addition, while NCS has generally linked the performance of its programs to broader agency and department goals, the performance of two of NCS's core responsibilities is not measured. Finally, focusing program evaluation efforts on outcomes, gauging progress, incorporating past performance, and clarity can improve the usefulness of NCS's performance measures.

NCS Has Been Developing a Strategic Plan since 2007, but It Has Not Been Finalized and Could Be Strengthened with Key Planning Practices

NCS has undertaken strategic planning for its programs and documented some key elements of strategic planning—such as a statement of the agency's mission, strategic goals, and objectives—across a range of documents and sources. For example, the mission statement is documented in program documents such as NCS's Annual Reports, and NCS officials told us they have identified 21 strategic objectives that align with its three strategic goals (information on the three strategic goals and some of the related objectives is shown in table 3). However, this information has not been incorporated into a strategic plan. Furthermore, NCS officials stated that these goals and objectives are being revised, but they did not provide a date when this would be finalized. Additionally, NCS's congressional budget justification documents for fiscal years 2007 through 2009 contain planned milestones and spending for various program initiatives.

Table 3: NCS's Strategic Goals and Select Objectives

NCS Strategic Goals	Select NCS Objectives
Ensure availability of the communications infrastructure to support NS/EP requirements	Ensure performance of priority communications services during normal and stressed emergency situations
	Enhance existing NS/EP communication capabilities
Enhance and maintain NCS operational preparedness for effective and timely response and recovery to national emergencies	Serve as the lead agency for Emergency Support Function 2 (ESF-2) in support of the National Response Plan
	Build on the strategic outreach and communication program to continue to raise awareness about NCS and NSTAC programs and activities
Provide leadership in Critical Infrastructure Protection (CIP) as the telecommunications Sector-Specific Agency	Serve as the sector-specific agency for the telecommunications sector
	Work with industry and other sector-specific agencies to improve communications assurance and preparedness

Source: NCS.

In June 2008, we reported that efforts were under way to draft a strategic plan for the NCS, and recommended that DHS establish milestones for completing the development and implementation of the strategic plan.[54] DHS agreed with our recommendation and stated that it was taking steps toward finalizing the strategic plan. However, as of April 2009, the plan, which has been in draft since mid-2007, had not yet been finalized and NCS officials could not provide a date for when this would occur. A draft strategic plan for fiscal years 2007 to 2013 did not include some of the key elements associated with effective strategic plans. For example, while the plan included NCS's mission, strategic goals and high-level objectives, it did not include a discussion of the resources needed to achieve these goals and objectives. Although NCS intends to enhance its priority communications offerings to keep pace with emerging technology (such as priority data in an IP environment), it has not yet finalized the total costs to do so. In addition, the draft plan did not identify external factors that could affect achievement of strategic goals (such as management or

[54]GAO, *Critical Infrastructure Protection: Further Efforts Needed to Integrate Planning for and Response to Disruptions on Converged Voice and Data Networks*, GAO-08-607 (Washington, D.C.: June 26, 2008). The NCS strategic plan is to be part of an overarching strategy for all the entities that comprise the Office of Cyber Security and Communications that also includes the National Cyber Security Division and Office of Emergency Communications.

technological challenges). Moreover, the plan did not articulate how current and planned initiatives such as the NS/EP NGN and the satellite pilot program fit into the broader agency goals.

Our past work has discussed the importance of strategic planning as the starting point for results-oriented management.[55] Strategic plans are to articulate the mission of an organization or program, and lay out its long-term goals and objectives for implementing that mission, including the resources needed to reach these goals. Leading management practices state that federal strategic plans include six key elements: (1) a comprehensive mission statement, (2) strategic goals and objectives, (3) strategies and the various resources needed to achieve the goals and objectives, (4) a description of the relationship between the strategic goals and objectives and performance goals, (5) an identification of key external factors that could significantly affect the achievement of strategic goals, and (6) a description of how program evaluations were used to develop or revise the goals and a schedule for future evaluations.[56] As we have previously reported, strategic plans are strengthened when they include a discussion of management challenges facing the program that may threaten its ability to meet long-term, strategic goals.[57]

While NCS has completed some key aspects of strategic planning, critical elements such as the key external factors that could affect achievement of its mission—for example, challenges affecting the NS/EP NGN initiative—have not yet been documented and NCS has not committed to incorporating these elements in its strategic plan. A strategic plan that captures these key elements in a centralized way would help inform stakeholders, such as departmental leadership, Congress, and the administration about NCS's priorities and plans and assist stakeholders in making efficient and effective program, resource, and policy decisions. In addition, because NCS has experienced frequent turnover in leadership, such a plan would be beneficial for new agency management during transition periods. For example, since January 2007, there have been two directors and one acting director as well as three different staff serving in

[55]GAO, *Executive Guide: Effectively Implementing the Government Performance and Results Act*, GAO/GGD-96-118 (Washington, D.C.: June 1996).

[56] Government Performance and Results Act of 1993 and OMB Circular A-11provide guidance in this instance since NCS's strategic plan is not an agency-wide strategic plan.

[57]GAO, *Managing for Results: Critical Issues for Improving Federal Agencies' Strategic Plans*, GAO/GGD-97-180 (Washington, D.C.: September 16, 1997).

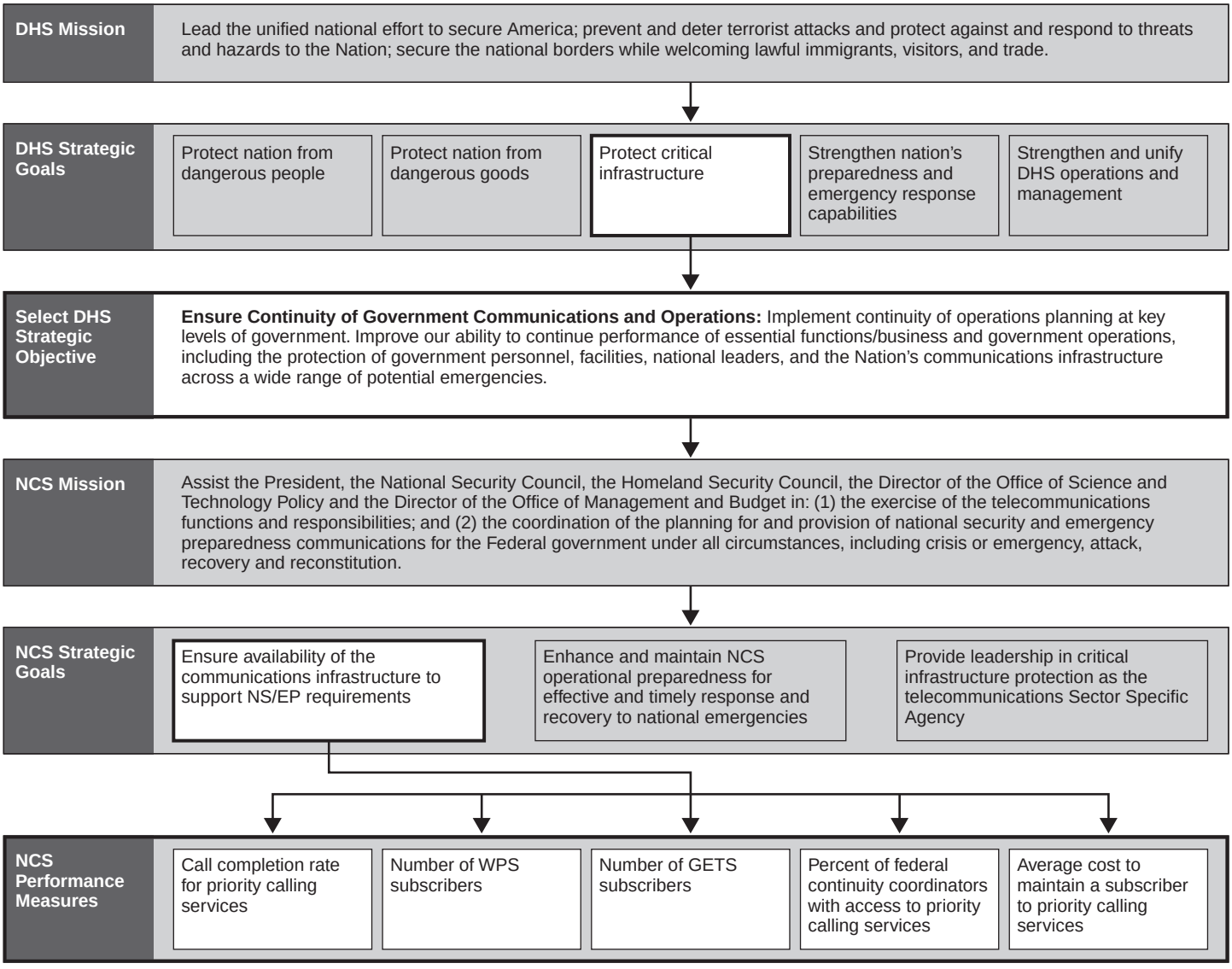
the capacity of Chief for the Technology and Programs Branch—a position that oversees the day-to-day operations regarding NS/EP NGN, among other initiatives.

NCS's Performance Measures Are Generally Linked to Broader Agency and Department Goals and Objectives, but Measures Do Not Cover All Core Program Activities

NCS has five performance measures which relate to three aspects of GETS and WPS—the number of subscribers, priority call completion rates in emergencies, and cost to support GETS and WPS subscribers. While NCS has not documented how its performance measures link to NCS's and DHS's strategic goals and objectives, we used various documents, such as DHS's fiscal year 2008 to 2013 strategic plan, to determine that NCS's five performance measures link to agency and department strategic goals and objectives (see figure 3, which illustrates the connection between DHS's mission to NCS's performance measures). For example, NCS's performance measure to track the call completion rate of priority calls is linked to its strategic goal of ensuring availability of communications as well as to DHS's strategic objective to ensure continuity of government communications. Consistent with our past work on performance management, linking performance measures with strategic goals and objectives in this way provides managers and staff with a roadmap that shows how their day-to-day activities contribute to achieving broader DHS and NCS goals.[58]

[58]GAO, *Homeland Security: Guidance and Standards are Needed for Measuring the Effectiveness of Agencies' Facility Protection Efforts*, GAO-06-612 (Washington, D.C.: May 31, 2006).

Figure 3: Linkages between NCS Performance Measures and NCS and DHS Strategic Goals and Objectives



Source: GAO analysis of DHS and NCS data.

While NCS's performance measures generally link to overall goals and objectives, NCS's performance measures focus exclusively on its priority calling programs, and NCS does not have measures to assess the performance of its other two primary responsibilities—serving as the ESF-2 coordinator and the lead federal agency for critical infrastructure protection for the communications sector. Although NCS officials

acknowledged that they do not have such measures and noted that they could be helpful, these officials did not commit to developing such measures. While we have previously reported that agencies do not need to develop performance measures that cover all of their activities, OMB requires that performance measures reflect a program's mission and priorities.[59] Furthermore, we have also reported that an agency's performance measurement efforts are strengthened when they sufficiently cover its core activities.[60] NCS's critical infrastructure protection and ESF-2 responsibilities are key components of the agency's mission to help ensure that NS/EP communications are available during disasters or emergencies, and are articulated in NCS's strategic goals (see table 3). For example, NCS, in conjunction with the telecommunication industry is responsible for conducting risk assessments of the nation's critical communication infrastructure; according to Executive Order 13,231, as amended, communications infrastructure is critical not only to emergency preparedness, but all aspects of U.S. national security and economy. Without the benefit of performance measures that cover these functions, NCS may be limited in its ability to assess its overall effectiveness in meeting all three of its strategic goals. Moreover, developing performance measures for these mission-critical functions would help strengthen and inform future program and budget decisions, improve critical program activities, and as we have previously reported, help verify that NCS's resources are being used responsibly.[61]

[59]GAO, *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures*, GAO-03-143 (Washington, D.C.: November 22, 2002); and OMB, *Guide to the Program Assessment Rating Tool* (Washington, D.C., January 2008).

[60]GAO-03-143.

[61]GAO-06-612.

Focusing on Outcomes, Progress, and Past Performance to Set Performance Targets and Clarity Can Improve the Usefulness and Reliability of Performance Measures

Of its five performance measures, NCS has identified two as outcome measures, two as output measures, and one as an efficiency measure (see table 4 for more information on each of these measures).[62] While OMB guidance defines output measures (such as the number of products or services delivered) as a description of the level of activity provided over a period of time, it asserts program performance is most effectively measured by focusing on how those outputs support the achievement of desired outcomes—the intended results of carrying out a program or activity.[63] NCS's two output measures—the number of GETS subscribers and the number of WPS subscribers—could be strengthened to focus on outcomes, more effectively gauge progress toward achieving results, and set more reliable targets. In addition, one of NCS's outcome measures, the call completion rate, does not clearly illustrate the measures' intended purpose. OMB guidance emphasizes the use of outcome measures as a more meaningful indicator of performance and encourages agencies to translate existing measures that focus on outputs into outcome measures, or at least demonstrate that measured outputs would logically lead to intended outcomes. Currently, neither of NCS's output measures fully demonstrates how it supports NCS in the achievement of the intended outcomes of the GETS and WPS programs, which, as articulated in one of NCS's strategic goal, is to ensure the availability of communications capabilities for all NS/EP officials. For example, NCS told us that the long-term goal for the GETS program may be to reach 2 million subscribers; however, NCS has not demonstrated how reaching 2 million subscribers achieves the result of ensuring the availability of communications capabilities for NS/EP officials that could benefit from the use of the GETS service. According to NCS officials, NCS based this number on an internal study that identified 2 million subscribers as the capacity level that the PSTN can support. However, NCS could not provide a rationale as to how 2 million subscribers appropriately quantifies the population of NS/EP personnel critical to NCS achieving its desired results. Therefore, it is unclear whether achieving 2 million GETS subscribers means that all the NS/EP personnel who have the greatest need for access to priority calling capabilities are enlisted in the program thereby enabling them to make calls that can help to coordinate planning for national security incidents and emergencies and facilitate continuity of government under these

[62]OMB defines an efficiency measure as one that captures a program's ability to carry out its activities and achieve results (an outcome or output) relative to resources (an input such as cost).

[63]OMB, *Guide to the Program Assessment Rating Tool.*

conditions—a key function of the GETS program. In addition, NCS officials have told us that the agency has an unofficial long-term goal of 225,000 subscribers for the WPS program. Although NCS officials noted that this number has not been finalized, the measure also does not portray how well or if WPS is achieving its desired program outcome. Furthermore, NCS has not been able to provide information regarding how it developed this WPS subscriber goal or describe how it will do so in the future.

Table 4: NCS's Performance Measures, Targets, and Results for Fiscal Years 2006 to 2009

Performance measure	Description	FY 2006 target	FY 2006 results	FY 2007 target	FY 2007 results	FY 2008 target	FY 2008 results	FY 2009 target
Priority service call completion rate during emergency communication periods	Measures the call completion rate for GETS, WPS, and a classified priority calling program during emergency communication periods. The call completion rate is defined as the number of successful calls made divided by the total number of calls originated. A successful call is one in which the user (1) gets an answer, (2) a ring but no answer, or (3) a traditional busy signal.	[a]	a	90%	94%	90%	97%	90%
Number of WPS subscribers	Measures the total number of subscribers who are authorized to use the Wireless Priority Service.	30,000	38,594	39,000	47,214	57,000	85,076	68,500
Number of GETS subscribers	Measures the total number of subscribers registered to use the GETS program.	118,000	158,669	155,000	168,428	185,000	208,600	204,000
Percent of Federal Continuity Coordinators with access to priority telecommunications services	Measures the percentage of federal continuity coordinators that are registered to use the GETS program.	[b]	[b]	[b]	[b]	80%	81%	90%

Performance measure	Description	FY 2006 target	FY 2006 results	FY 2007 target	FY 2007 results	FY 2008 target	FY 2008 results	FY 2009 target
Average cost to maintain priority telecommunications service subscribers	Measures the average cost to NCS to maintain subscribers in the GETS and WPS programs, as well as a classified priority calling program.	[c]	[c]	$21.00	$17.00	$15.63	$13.70	$14.22

Source: NCS.

[a]Data not available as NCS implemented this performance measure in fiscal year 2007.

[b]Data not available as NCS implemented this performance measure in fiscal year 2008.

[c]Data not available as NCS implemented this performance measure in fiscal year 2007.

Our past work, along with federal guidance, has discussed the importance of using a series of output and outcome goals and measures to depict the complexity of the results that agencies seek to achieve.[64] We recognize that it can be difficult to develop outcome goals and corresponding measures. Nonetheless, by further articulating how NCS's measures support the intended outcome articulated in its strategic goal—ensuring availability of communications for NS/EP functions—, NCS and its stakeholders could more effectively gauge the extent to which subscriber levels in GETS and WPS reflect if communications capabilities are available to all critical NS/EP personnel as intended.

NCS's progress can be better measured through annual performance targets that track subscriber levels to demonstrate how overall subscriber goals for GETS and WPS lead to program outcomes. This would help to better illustrate NCS's annual progress toward achieving its desired results. Furthermore, although both of NCS's output measures reflect the number of subscribers in each program for a given year, the measures do not reflect whether NCS's annual achievement demonstrate significant or marginal progress toward reaching 2 million subscribers, and NCS has not defined a time by which it hopes to achieve this goal. In its GETS and WPS performance measures, NCS states annual results as an output of the number of subscribers in a particular year—for example, 208,600 GETS subscribers in fiscal year 2008. These output measures do not capture percentage increases in the number of subscribers from year to year to help measure performance changes in achieving any long-term goal for subscribers. According to OMB guidance, performance over time is to be

[64]GAO/GGD-96-118, and OMB, *Guide to the Program Assessment Rating Tool*.

expressed as a tangible, measurable objective, against which actual achievement can be compared, such as a quantitative standard, value, or rate.[65] For example, for NCS's performance measure related to the percent of federal continuity coordinators with access to priority calling programs—NCS tracks change over time by showing a rate of annual progress toward enlisting these particular officials in the GETS and WPS programs. In doing so, NCS can provide insight as to the extent to which this group can successfully place calls to help facilitate continuity of government at the federal level—particularly in the event of network congestion during emergencies.[66] Although NCS has reported ongoing or planned targeted outreach efforts to similar groups that play a leadership role in coordinating emergency response and continuity of government such as governors or mayors, they have not developed similar performance measures to track their annual progress in enlisting and maintaining these subscribers. NCS has not finalized its overall goal for the number of GETS and WPS subscribers or set a timeline for when it plans to achieve its unofficial goals for the number of GETS and WPS subscribers. Based on GETS enrollment levels over the last 3 fiscal years, at current rates NCS may not achieve its unofficial subscriber goals until somewhere between 2015 and 2047. OMB guidance states that performance goals are to be comprised not only of performance measures and targets, but also include time frames for achieving these goals.[67]

In addition, OMB guidance states that targets are to consider past performance, adjusted annually as conditions change, such as funding levels and legislative constraints. However, NCS did not consider past performance when setting annual performance targets for several of its performance measures. As a result, the targets are not ambitious or based on reliable baselines. For example, NCS did not modify its targets for the number of GETS subscribers for fiscal years 2007 and 2009 based on actual results achieved in the previous fiscal year. According to OMB performance guidance, baselines are the starting point from which gains

[65]OMB, *Guide to the Program Assessment Rating Tool.*

[66]Federal continuity coordinators as defined in the National Continuity Policy are staff designated within federal departments and agencies, at the Assistant Secretary level, to coordinate their agency's continuity of operations requirements which includes the availability of critical communications capabilities, among other things. Because this performance measure was introduced in fiscal year 2008, we could not evaluate how useful this measure has been in gauging progress over time.

[67]OMB, *Guide to the Program Assessment Rating Tool.*

are measured and targets set; and performance targets are to be ambitious. Our past work has also emphasized the importance of baselines and multiyear goals particularly when results are expected to take several years to achieve.[68] As detailed in table 4, for fiscal year 2006, NCS reported a target of 118,000 GETS subscribers and achieved 158,669, which also surpassed its 2007 goal. However, NCS did not update its fiscal year 2007 goal of 155,000 when it was achieved in 2006. Similarly, in fiscal year 2008, NCS set a target of 185,000 subscribers and achieved 208,600 subscribers, which surpassed the fiscal year 2009 goal. However, as of April 2009, the goal remained at 204,000 subscribers even though NCS exceeded this level in the previous fiscal year. Similarly, the target level for another measure—the average cost to maintain a priority telecommunications service subscriber—has not been modified to reflect the actual results of the prior year. NCS began using this measure in fiscal year 2007 and has exceeded its target reductions in cost for the 2 years that the measure has been in place. For fiscal years 2008 and 2009, the average cost targets were $15.63 and $14.22, respectively; however, NCS reported that the average cost to maintain a priority service subscriber in 2008 was $13.70, surpassing targeted reductions for both 2008 and 2009. As with the target for the subscriber measures, the average cost target was not modified to build upon actual results of the prior fiscal year. Furthermore, the baseline upon which each annual average cost goal is determined is the number of GETS and WPS subscribers. While officials cite reductions in operating costs as one reason for exceeding the target, they also stated that the achievement was more a function of the fact that they exceeded the projected number of GETS subscribers. As a result, because the annual GETS subscriber performance measure is not composed of ambitious targets from year to year, the baseline it provides for determining the average cost target is unreliable. Without considering changes in this baseline information—in this case, number of subscribers—valid comparisons to measure improvement over time cannot be made. Considering past performance in setting targets could help NCS develop a true sense of continued improvement in enlisting priority service subscribers and reducing costs to service the subscribers.

Finally, while NCS has implemented an outcome-oriented measure to assess the effectiveness of its priority calling programs during periods of

[68]GAO, *Agency Performance Plans, Examples of Practices That Can Improve Usefulness to Decisionmakers*, GAO/GGD-AIMD-99-69 (Washington, D.C.: February 26, 1999); and GAO/GGD-96-18.

congestion, the information the measure intends to convey—priority service call completion rate—is not consistent with the methodology used to calculate the results. Specifically, the measure is intended to capture and measure combined call completion rates for GETS and WPS. However, wireless carriers collect the relevant information that NCS reports via this measure, and under current processes for capturing attempted WPS calls, wireless carriers are unable to identify all attempted WPS calls that are not completed.[69] Our previous work holds that performance measures should be clearly stated in order to ensure that the name and definition of the measure are consistent with the methodology used to calculate it.[70] Furthermore, OMB guidance states that agencies are required to discuss the completeness and reliability of their performance data, and any limitations on the reliability of the data. As the call completion measure does not provide clear information about program performance and limitations, NCS risks overstating the completion rate for WPS and the use of this measure may affect the validity of managers' and stakeholders' assessment of WPS performance in comparison to the intended result. NCS officials agreed that opportunities exist to strengthen this measure to ensure that it accurately reflects the activity being measured, and stated they are taking steps to work with carriers that support WPS services to develop a solution that would allow them to track the full range of WPS calls. However, in the meantime, NCS has not committed to revising the measure to accurately reflect the activity being monitored.

Conclusions

The events of September 11, 2001, and the 2005 hurricane season dramatically demonstrated how catastrophic man-made and natural disasters can disrupt communication capabilities and highlight the need for essential NS/EP officials to be able to communicate during and in the aftermath of such events. NCS continues to recognize the need to keep pace with technological changes and look for ways to better meet NS/EP personnel's current and future communications needs as evidenced by the development of its NGN initiative. Information such as costs, available

[69]When a WPS user attempts to place a call, the call can be dropped—or incomplete—at several stages. The manner in which wireless carriers are currently able to identify incomplete calls occurs only for calls that have reached the mobile switching center. However, those WPS calls that have reached the base station, but failed to reach the mobile switching center, would not be captured as an incomplete call.

[70]GAO-03-143.

technology, and future capabilities for these types of initiatives are unknown, and as such require thoughtful planning to most effectively allocate current and future resources. These efforts to ensure that the communication capabilities it provides to NS/EP personnel will be operable on and leverage next-generation networks could benefit from better planning. By clearly defining its acquisition approach for the initiative and developing mitigation plans to address known risks and technical challenges, NCS can help minimize cost overruns and schedule delays, and more importantly help ensure that it is developing services that meet the emerging communication needs of the NS/EP community.

Strategic plans are an essential element in results-oriented program management, and provide agencies and stakeholders a common set of operational principles with which to guide actions and decisions. Although DHS stated that it was taking steps to finalize its strategic plan in response to our June 2008 recommendation, it has not yet finalized the plan which has been in draft since mid-2007 or committed to incorporating key elements of a strategic plan. We continue to believe that our prior recommendation has merit and that NCS could benefit from completing a strategic plan. A strategic plan that includes identifying strategic goals and objectives, the resources needed to achieve those goals and objectives, and a description of the relationship between planned initiatives and strategic goals could serve as the foundation to help NCS align its daily activities, operations, program development, and resource allocation to support its mission and achieve its goals. As NCS undertakes a variety of new initiatives and attempts to strengthen existing programs, finalizing its strategic plan will also help strengthen NCS's ability to efficiently and effectively allocate resources, inform key stakeholders, and provide agency and congressional decision makers the ability to assess NCS's programs and initiatives.

As part of strategic planning, it is important that related performance measures are linked and support NCS strategic goals, as well as DHS's strategic goal of ensuring continuity of communications. In the absence of performance measures for the key functions NCS performs as the lead for the federal government's efforts to protect critical communications and as the coordinator for ESF-2, NCS cannot reasonably measure or demonstrate how these core program activities are contributing to achieving all three of its strategic goals and DHS's overall mission of providing continuity of communications. For a performance measure to be used effectively, it is essential that a measure's definitions, and its intended use, are consistent with the methodology used to calculate it. While NCS acknowledges that its primary performance measure for its

priority calling programs—call completion rate—does not capture all WPS calls completed and is exploring ways to capture the full spectrum of uncompleted, by not revising the measure in the meantime to accurately portray what is being measured, NCS continues to inaccurately measure performance and provide potentially misleading information to decision makers. Similarly, by not adjusting the performance targets that intend to measure number of subscribers and average costs to build upon and reflect previous years' results, NCS cannot make valid comparisons to measure improvement over time, and cannot ensure whether performance goals are reasonable and appropriate. Beyond adjusting targets for the number of subscribers, opportunities exist to make these measures more outcome oriented to reflect the progress in reaching NCS's ultimate goals for the number of subscribers to its GETS and WPS programs. However, without clearly defining or demonstrating how its ultimate subscriber goals achieve the result of ensuring the availability of communications capabilities for NS/EP personnel who need these services, it will remain difficult to measure progress. To its credit, NCS has identified federal continuity coordinators as critical NS/EP personnel needing access to its programs and has developed an outcome measure to track progress in enlisting and maintaining this group of subscribers. However, without similar measures for other groups that play a significant role in coordinating emergency response and continuity of government, NCS will not be in a position to evaluate its efforts to reach out, target, and ultimately provide priority calling programs to these groups.

Recommendations for Executive Action

To help ensure that NCS management has sufficient information needed to assess and improve NCS's programs and new initiatives and to effectively support budget decisions, we recommend that the Secretary of DHS direct the Manager of the NCS to take the following three actions:

- Develop program plans for the NS/EP NGN initiative that outline an acquisition approach based on available technologies, realistic cost estimates, and that include mitigation plans to address identified challenges and risks.
- Follow best practices for strategic planning in finalizing the NCS strategic plan including identifying the resources needed to achieve its strategic goals and objectives and providing a description of the relationship between planned initiatives such as the NS/EP NGN and strategic goals.
- Strengthen NCS's performance measurement efforts by (1) developing measures to cover all core program activities, (2) exploring opportunities to develop more outcome-oriented measures, (3) ensuring performance

measure baselines are reliable and based upon past performance, (4) and improving the clarity of its call completion measure.

Agency Comments and Our Evaluation

We provided DHS a draft of this report for review and comment. DHS provided written comments on August 7, 2009, which are summarized below and presented in their entirety in appendix VI. DHS also provided technical comments, which we incorporated where appropriate.

DHS disagreed with the recommendation in our draft report that it develop an evaluation plan for its satellite program that includes milestones for continued implementation and a methodology for assessing the results of the pilot before moving forward with the program. Specifically, DHS noted that the pilot program, which was on hold at the time of our review, was now complete. However, at the conclusion of our field work, our understanding from the NCS Director was that the pilot was on hold and that NCS was reassessing various aspects of the pilot such as conducting a cost-benefit analysis to determine which satellite provider and equipment to use. In light of this discrepancy, we subsequently obtained clarification on the status of the pilot. Our discussion with DHS revealed that the pilot program was terminated rather than completed. In providing clarification, DHS stated that it agreed with our assessment that the pilot program needed improved planning and metrics documentation and that NCS took a number of issues into consideration including the current availability of push-to-talk capability among existing satellite service providers to determine whether the pilot should be continued. Given these considerations, as well as the issues that we identified such as lack of program objectives, documentation and metrics, NCS terminated the pilot. According to NCS, about $900,000 had already been spent or obligated to support various activities for the pilot program. According to NCS officials, the remaining $1 million for the pilot will be reprogrammed and any funds that had already been obligated but not yet spent will be deobligated and also reprogrammed for other priority communications services. Thus, based on the termination of the pilot, we withdrew our recommendation and have modified our report to reflect the current status of the pilot.

DHS concurred with our recommendation that it develop program plans for the NS/EP NGN initiative that outline an acquisition approach based on available technologies, realistic cost estimates, and that include mitigation plans to address identified challenges and risks. Although it concurred with our recommendation, DHS also reported that NCS currently follows a structured approach in the design and implementation of program plans

and that it assesses industry trends to help determine program enhancements and mitigation plans. Developing program plans for the NS/EP NGN initiative as we recommended can help NCS minimize cost overruns and schedule delays and help ensure that it is developing services that meet the needs of the NS/EP community.

DHS concurred with our recommendation that NCS follow best practices for strategic planning in finalizing the NCS strategic plan including identifying the resources needed to achieve its strategic goals and objectives and providing a description of the relationship between planned initiatives, such as the NS/EP NGN, and strategic goals. DHS stated that all NCS activities are directly linked to its mission and associated performance measures. Finalizing its strategic plan as we have recommended will help provide decision makers with information to help them assess NCS's programs and initiatives.

With regard to our recommendation that NCS strengthen its performance measurement efforts by (1) developing measures to cover all core program activities, (2) exploring opportunities to develop more outcome-oriented measures, (3) ensuring performance measure baselines are reliable and based upon past performance, and (4) improving the clarity of its call completion measure, DHS concurred. Specifically, DHS reported that NCS will continue to develop performance measures. Taking action to strengthen its performance measures as we recommended should help NCS improve its ability to evaluate its efforts to reach out, target, and provide priority calling programs.

DHS also commented on the report's discussion of subscriber database accuracy, stating that it disagreed with what it viewed as our assertion that NCS should be able to easily determine whether certain individuals serving in public positions were still entitled to be GETS subscribers, as well as our expectation that NCS terminate access for individuals regardless of whether the subscriber's organization has notified NCS to do so. DHS also highlighted the steps that NCS takes to help ensure agency points of contact keep NCS's subscriber database updated. We modified the report to better recognize the role agency Points of Contacts play in updating NCS's database.

DHS also noted that the report suggested that NCS's outreach efforts are limited to a select number of activities and noted that NCS also meets with other governmental bodies. We have modified our report to clarify the discussion that these are examples of outreach efforts that are not intended to be inclusive of all of NCS's efforts.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the Secretary of Homeland Security, and any other interested parties. In addition, this report will be available at no charge on GAO's Web site at http://www.gao.gov.

If you or your staff have any questions concerning this report, please contact me at (202) 512-8777, or jenkinswo@gao.gov. Contact points for our Office of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in Appendix VII.

Sincerely yours,

William O. Jenkins, Jr.
Director, Homeland Security and Justice Issues

Appendix I: The NCS Organization Structure

The National Communications System (NCS) was established by a memorandum signed by President Kennedy in 1963, in the wake of the communications challenges that arose during the Cuban Missile Crisis when, according to NCS, delays in sending and receiving communications between the United States and foreign governments involved in the crisis threatened to further complicate the crisis. The original memorandum which has been amended and superseded over time, called for establishing a national communications system by linking together, and improving the communications assets of various federal agencies.[1] Such a system is to provide the necessary communications for the federal government under all conditions ranging from normal conditions to domestic emergencies and international crises. Today, Executive Order 12,472 is the primary federal guidance in force that dictates the composition and functions of the NCS. Executive Order 12,472 defined the NCS as those telecommunications assets owned or leased by the federal departments, agencies, or entities that comprise the NCS that can meet the national security and emergency preparedness (NS/EP) needs of the federal government together with a management structure that could ensure that a national telecommunications infrastructure is developed that is responsive to NS/EP needs, among other things. Executive Order 12,472 which was amended by Executive Order 13,286 on February 28, 2003, provided that NCS's mission is to assist the President, the National Security Council, the Homeland Security Council,[2] the Directors of the Office of Science and Technology and Office of Management and Budget in, among other responsibilities, "the coordination of the planning for and provision of NS/EP communications for the Federal government under all circumstances, including crisis or emergency, attack, recovery, and reconstitution."

The NCS organization structure largely consists of federal entities. However, the telecommunications industry serves in an advisory capacity to the federal government on matters regarding NS/EP communications. A description of the roles and responsibilities of the entities that comprise the NCS organization follows. See figure 4 for an illustration of the current NCS management structure.

[1]Congressional Research Service, John Moteff, *Computer Security: A Summary of Selected Federal Laws, Executive Orders, and Presidential Directives, RL32357* (Apr. 16, 2004).

[2]On May 26, 2009, the President announced the full integration of White House staff supporting national security and homeland security.

- Executive Office of the President (EOP). Within the EOP, the National Security Council (NSC), the Homeland Security Council (HSC), the Office of Science and Technology Policy (OSTP), and the Office of Management and Budget (OMB) have varying responsibilities for setting the policy direction for NS/EP communications and providing oversight of the NCS.[3] For example, in consultation with the Executive Agent and a group of federal telecommunications officers (known as the NCS Committee of Principals), the EOP helps to determine NS/EP telecommunications requirements.

- NCS Executive Agent. Pursuant to the Homeland Security Act of 2002, the functions and responsibilities of the NCS Executive Agent were transferred to the Secretary of Homeland Security.[4] Among other things, the Executive Agent is responsible for ensuring that the NCS conducts unified planning and operations, in order to coordinate the development and maintenance of an effective and responsive capability for meeting the domestic and international NS/EP telecommunications needs for the federal government as well as ensuring coordination with emergency management activities of the Department of Homeland Security (DHS). Additionally, the Executive Agent designates the NCS Manager and oversees related activities including the delivery of priority communications programs (such as Government Emergency Telecommunications Service (GETS) and the Wireless Priority Service (WPS)).

- Office of the Manager, NCS. The Office of the Manager, NCS (OMNCS) falls under the Office of Cyber Security and Communications which is part of the National Protection and Programs Directorate within DHS. The responsibilities of the NCS Manager include, among other responsibilities, preparing for consideration by the NCS Committee of Principals and the Executive Agent:
  - recommendations on an evolutionary telecommunications architecture to meet current and future NS/EP needs; and
  - plans and procedures for the management, allocation and use, including the establishment of priorities or preferences, of federally owned or leased telecommunications assets under all conditions of crisis or emergency.

[3]Executive Order No. 12,472, 49 Fed. Reg. 13,471 (April 3, 1984).

[4]Pub. L. No. 107-296, § 201, 116 Stat. 2135, 2145-49 (2002).

Additionally, the NCS Manager is responsible for implementing and administering any approved plans or programs as assigned, including any system of priorities and preferences for the provision of communications service, in consultation with the NCS Committee of Principals and the Federal Communications Commission (FCC), to the extent practicable or otherwise required by law or regulation. Further, the NCS Manager is to conduct technical studies or analyses for the purpose of identifying improved approaches which may assist in fulfilling NS/EP telecommunications objectives, among other things. Additionally, in consultation with the NCS Committee of Principals and other appropriate entities of the federal government, the NCS Manager is to ensure that, where feasible, existing and evolutionary industry, national, and international standards are used as the basis for federal telecommunications standards. The OMNCS also includes the National Coordinating Center—a joint industry-government entity—which assists in coordinating the initiation and restoration of NS/EP communications services and is involved in critical infrastructure protection of telecommunications assets.

- NCS Committee of Principals. According to NCS, this collaborative body, chaired by the NCS Manager comprises of the key telecommunications officers of those agencies designated by the President that own or lease telecommunications assets of significance to national security or emergency preparedness, and other executive entities which bear policy, regulatory, or enforcement responsibilities of importance to NS/EP telecommunications capabilities. Currently, the NCS Committee of Principals includes representatives from 24 federal departments and agencies—known as the NCS Member Agencies.[5] In accordance with Executive Order 12,472, the NCS Committee of Principals, among other things, provides comments and recommendations to the National Security Council, the Director of OSTP, the OMB Director, the NCS Executive

[5]These entities include the Department of State (DOS), the Central Intelligence Agency (CIA), the Department of the Treasury (Treasury), the Federal Emergency Management Agency (FEMA), the Department of Defense (DOD), the Joint Staff (JS), the Department of Justice (DOJ), the General Services Administration (GSA), the Department of the Interior (DOI), the National Aeronautics and Space Administration (NASA), the Department of Agriculture (DOA), the Nuclear Regulatory Commission (NRC), the Department of Commerce (DOC), the National Security Agency (NSA), the Department of Health and Human Services (DHHS), the National Telecommunications and Information Administration (NTIA), Office of the Director of National Intelligence (ODNI), the Department of Transportation (DOT), the United States Postal Service (USPS), the Department of Energy (DOE), the Federal Reserve Board (FRB), the Department of Veterans Affairs (VA), the FCC, and DHS.

Agent, or NCS Manager regarding ongoing or prospective activities of the NCS. According to NCS, the NCS Committee of Principals, in accordance with its bylaws, has established subgroups such as the NCS Council of Representatives to help support the work activities of the NCS. Further, the NCS Committee of Principals established other groups such as the Priority Services Working Group to analyze the potential impact of future technologies on priority services programs and examine the outreach efforts for the GETS and WPS programs, among other things.

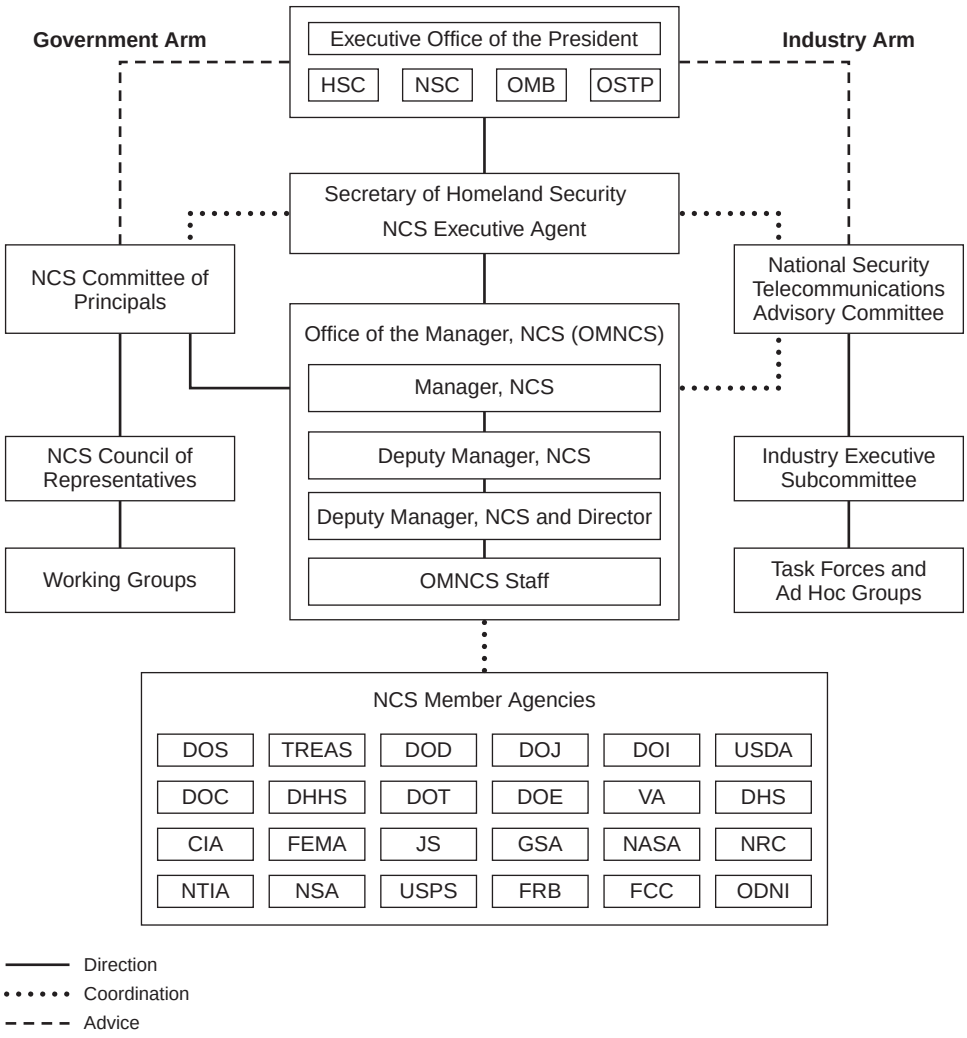
- The National Security Telecommunications Advisory Committee (NSTAC). The NSTAC was established in 1982 by Executive Order 12,382 to serve as an advisory committee to the President on matters related to NS/EP communications and may comprise of no more than 30 industry leaders appointed by the President. The NSTAC members are usually chief executive officers, from the telecommunications companies, network service providers, information technology firms, finance, and aerospace companies.[6] As we previously reported, over the course of its longstanding relationship with the NSTAC, the NCS has worked closely with NSTAC member companies during emergency response and recovery activities following a terrorist attack or natural disaster. [7] For example, after the September 11, 2001, terrorist attacks, NSTAC member companies immediately coordinated with NCS to assist with communication restoration efforts despite the fact that some of their network infrastructure had been among the most severely damaged. As we have previously reported, the NCS and NSTAC share information on a variety of issues including federal policies related to NS/EP communications and changes in the telecommunications marketplace. The NSTAC has also issued multiple reports addressing a wide range of policy and technical issues regarding communications, information systems, information assurance, critical infrastructure protection, and other NS/EP communications concerns. For example, in 2006, NSTAC issued a report that identified challenges related to NS/EP communications and provided recommendations to the President intended to help ensure that next generation network initiatives meet NS/EP user's need, among other

[6]As of May 2009, the NSTAC is comprised of representatives from the following companies: AT&T, Bank of America, Computer Sciences Corporation, Boeing Company, Harris Corporation, Intelsat General, Juniper Networks, Lockheed Martin, Microsoft, Motorola, National Cable and Telecommunications Association, Nortel, Qwest, Raytheon Company, Rockwell Collins, Science Applications International Corporation, Telcordia Technologies, Teledesic, Tyco Electronics, United States Telecom Association, Verisign, and Verizon.

[7]GAO-06-672.

things.[8] As provided under Executive Order 12,382, the NSTAC has established subgroups such as the Industry Executive Committee to help it carry out its functions.[9]

Figure 4: NCS Management Structure



Source: NCS.

[8] The President's National Security Telecommunications Advisory Committee, *Next Generation Network Task Force Report, (March 28, 2006)*.

[9]These subgroups may be composed, in whole or in part, of individuals who are not members of the NSTAC.

Appendix II: Objectives, Scope and Methodology

To analyze the extent to which the National Communications System (NCS) provides priority communications programs, we reviewed relevant legislation, regulations and other documentation that outline NCS responsibilities in ensuring the continuity of communication including the Homeland Security Act of 2002, Executive Orders 12,472 and 13,231, and NCS Directive 3-10. We also reviewed budget requests, annual reports, the Performance Assessment Rating Tool (PART) reports submitted to the Office of Management and Budget (OMB),[1] and other documentation related to NCS activities. We also obtained and reviewed relevant agency documents such as internal briefings, program planning documents, and standard operating procedures that describe how Government Emergency Telecommunications Service (GETS) and the Wireless Priority Service (WPS) operate and the capabilities that each program delivers. We obtained information on the mechanisms NCS utilizes to collect, track and analyze the performance of GETS and WPS. In addition, we obtained and analyzed data on the performance of GETS and WPS during select emergency or national special security events such as the 1995 Oklahoma City Bombing, the September 11, 2001, attacks, Hurricane Katrina in 2005, and the 2009 Presidential Inauguration, among others. We also interviewed NCS officials to obtain information on the agency's role in ensuring continuity of communications, the types of priority communications capabilities it provides to the national security and emergency preparedness (NS/EP) community—specifically through the GETS, WPS, and Telecommunications Service Priority (TSP) programs—as well as the types of challenges, if any, the agency may face in providing these services. We interviewed officials from the Federal Communications Commission (FCC) to obtain information on the agency's role in providing emergency communications, including how it works with NCS in providing priority communications capabilities. Furthermore, we interviewed telecommunications industry representatives from AT&T, Qwest Communications, and Verizon that are among the U.S. telephone carriers that provide NS/EP communications services. Although their views cannot be generalized to all telecommunications companies that provide NS/EP communications, the information we obtained helped to enhance our understanding of their role in providing emergency communications and their views on the impact the next generation

[1]PART consists of a standard series of questions intended to determine the strengths and weaknesses of federal programs. The PART questions cover four broad topics—(1) program purpose and design, (2) strategic planning, (3) program management, and (4) program results/accountability.

network (NGN) technology transition may have on NCS's priority communication programs.

We also interviewed NS/EP officials from a non-probability sample of 15 states and 13 localities[2] to obtain their perspectives and views on the NCS and its priority communication programs. Specifically, we obtained information from these officials regarding (1) their awareness of the NCS and the GETS, WPS, and TSP programs; (2) the extent they had utilized these programs in responding to an emergency situation and/or in their training and exercise activities; and (3) their perspectives on the benefits of these priority calling programs and potential barriers to participation. In selecting these states and localities, we considered a variety of factors including (1) the frequency and types of declared disasters by the Federal Emergency Management Agency (FEMA), (2) geographic dispersion, and (3) topographical factors that could affect the functionality of communications. The selected states and localities represent a range of natural disasters, terrains, climates, and population densities and also include areas that have recently experienced high-profile natural disasters or man-made attacks. While the perspectives of the officials we interviewed cannot be generalized to reflect the views of NS/EP emergency management officials in all states and localities, we believe the perspectives of the officials in these locations provided us with an overview and useful information on the NCS and the priority communications programs it provides.

To determine how NCS enlists subscribers and controls access to its priority programs, we collected and analyzed documentation, and interviewed NCS officials (1) on subscriber eligibility criteria, (2) to determine NCS's outreach efforts to enlist new subscribers for its priority calling programs, and (3) to identify its internal controls for controlling access to these programs. With regards to NCS's outreach efforts, we obtained and reviewed documentation such as brochures, newsletters, and

[2]In total, we interviewed NS/EP officials from 37 state and local agencies. State interviews were held with emergency management agencies and/or homeland security departments and covered the following states: Alabama, California, Colorado, Florida, Illinois, Kansas, Louisiana, Maryland, New York, North Carolina, Ohio, Oklahoma, Oregon, Virginia, and Wyoming. Local interviews were held with local emergency management agencies, police and fire departments, and other entities with NS/EP responsibilities. Localities we covered included: City of Sacramento, County of Sacramento, County of Santa Clara, County of San Diego, City of San Diego Lee County, Broward County, Miami-Dade County, Palm Beach County, City of Fort Lauderdale, City of Boynton Beach, City of New York, and the City of New Orleans.

conference schedules on NCS outreach efforts including its use of regional outreach coordinators and its awareness booth deployments at various emergency management conferences. We also attended several NCS user-focused meetings and obtained documentation which detailed NCS efforts to attract new subscribers and provide support to current subscribers. To determine what internal controls NCS utilizes to grant and control access to its priority calling programs, we obtained the NCS standard operating procedures for GETS and WPS programs which outlined the procedures and processes to participate in the programs including the eligibility criteria, the approval process, and the re-validation process. We also obtained NCS standard operating procedures and compared them with criteria in Standards for Internal Control in the Federal Government.[3] To determine whether NCS adhered to its procedures for terminating access for subscribers who no longer meet the programs' eligibility criteria, we reviewed a nonprobability sample of records for 76 former federal and 9 former state government officials including former members of the U.S. Senate as well as members and delegates of the U.S. House of Representatives for the 109th Congress; immediate past heads of federal departments and agencies as of August 2008; and immediate past governors of U.S. states and territories as of August 2008, which is when we obtained the subscriber data. We selected these groups because they served in public positions that would allow NCS to easily determine that their positions ended, and in turn, work with the subscriber's organization to update account status, as appropriate. Although the results of our work cannot be generalized to evaluate the effectiveness of controls used for all NCS program subscribers, the information obtained provided us with useful information about the extent to which subscriber records for these groups were terminated following a change in the subscriber's eligibility status. Because the subscriber database, in its entirety, is classified, we have limited our reporting of the results of our analysis to only nonclassified information; however, this does not affect our findings.

To assess the reliability of these data, we reviewed the data for obvious problems with completeness or accuracy and interviewed knowledgeable agency officials and contract support staff about the data quality control processes and reviewed relevant documentation such as the database dictionary that describes the data fields in the subscriber database. When we found discrepancies (such as duplicate records), we brought them to

[3]GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

the attention of NCS officials and its contract support staff to better understand the nature of the discrepancies and resulting impact on our work. We performed electronic testing on the data and found the data to be sufficiently reliable for the purposes of this report.

To determine what challenges can affect NCS's delivery of its priority communications programs, we interviewed relevant NCS officials who have responsibilities for these programs. We also obtained information and reviewed documentation from the agency regarding its efforts to implement the Satellite Priority Service pilot program, as well as its efforts to leverage NGN technology in its priority communication programs. We compared this information with our previous work on pilot program planning and technology acquisition.[4]

To assess NCS's overall planning and evaluation efforts, we interviewed NCS officials and reviewed relevant documentation regarding their strategic planning efforts and the mechanisms they use to evaluate their services. Specifically, we reviewed and analyzed NCS's draft strategic plan to determine the extent to which the plan outlined the agency's short and long term strategic goals and objectives, the associated time frames with their identified goals and objectives, the current status of the goals and objectives and internal and external factors that may affect their ability to achieve their goals and objectives. We also obtained and reviewed the OMB Performance Assessment Rating Tool, NCS's Congressional Budget Justifications, and other documents that outlined the performance measures utilized to assess the extent they are achieving their goals and objectives; and planned milestones and spending for their priority calling programs. To assess the effectiveness of NCS planning efforts, we compared their efforts with federal best practices contained in our past reports which discussed the importance of strategic planning.[5] We also utilized guidance from OMB Circular A-11, and related federal legislation, such as the Government Performance and Results Acts of 1993, which identifies the six key element of a strategic plan.[6] In addition, we interviewed NCS officials about their strategic planning efforts and the

[4]GAO-09-45 and GAO-07-424.

[5]See for example, GAO-03-143 and GAO/GGD-96-118.

[6]Government Performance and Results Act of 1993, Pub. L. No. 103-62, 107 Stat. 285 (1993); and OMB, *OMB Circular A-11, Part 6, Preparation, Submission, of Strategic Plans, Annual Performance Plans, and Annual Program Performance Reports* (Washington, D.C.: Executive Office of the President, June 2008).

mechanisms they use to monitor and evaluate their services. While NCS is not required to explicitly follow these guidelines, the guidelines do provide a framework for effectively developing a strategic plan and the basis for program accountability.

We conducted this performance audit from June 2007 through August 2009 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 provides a reasonable basis for our findings based on our audit objectives.

Appendix III: Telecommunications Service Priority Program

The Telecommunications Service Priority (TSP) program provides priority provisioning and restoration of telecommunications services that support emergency operations facilities for certain federal, state, and local governments and other entities. Such services include equipment used to transmit voice and data communication by wire, cable, and satellite, among other things. During and following an emergency event, wireless and wireline carriers may receive numerous requests for new telecommunications service as well as for the restoration of existing services. Under this program, telecommunications carriers and their partners (collectively referred to as service vendors) are required to restore national security and emergency preparedness (NS/EP) telecommunications services that suffer outage, or are reported as unusable or otherwise in need of restoration, before non-NS/EP services.[1] As with Government Emergency Telecommunications Service (GETS) and the Wireless Priority Service (WPS), certain government agencies and other groups are identified as having specific NS/EP responsibilities that qualify them for priority provisioning and restoration of services. However, unlike GETS and WPS, for which new subscriptions can be requested and approved during emergency response and recovery activities, authorization to receive TSP priority services must be in place before it is needed. Although the federal government does not charge a fee, telecommunications service providers (such as wireless carriers and cable and satellite providers) may charge an initial startup fee of up to $100 per circuit and a monthly fee of up to $10 per circuit.[2] The National Communications System (NCS) reported that as of fiscal year 2008, over 1,000 organizations have registered more than 191,000 circuits under the TSP program.

Telecommunications personnel have traditionally faced difficulties in accessing disaster areas in order to make TSP repairs to communications assets. According to telecommunications representatives that are part of

[1]Miscellaneous Rules Relating to Common Carriers: Telecommunications Service Priority (TSP) System for National Security Emergency Preparedness (NSEP), 47 C.F.R. pt. 64, App. A. Under the appendix, service vendors are defined as any person, association, partnership, corporation, organization, or other entity (including common carriers and government organizations) that offer to supply any telecommunications equipment, facilities, or services (including customer premises equipment and wiring) or combination thereof and the term includes resale carriers, prime contractors, subcontractors, and interconnecting carriers.

[2]The fees charged may differ depending on the service provider and are separate from any charges related to the installation or repair of circuits following an emergency event.

the National Coordinating Center for Telecommunications (NCC) within NCS, access for repair crews to disasters areas has been an issue dating back to Hurricane Hugo in 1989, and during the aftermath of Hurricane Katrina. For example, an independent panel formed to examine the telecommunications challenges during Hurricane Katrina, reported that inconsistent and unclear requirements for repair crews and their subcontractors to gain access to the affected area impeded their efforts to make necessary repairs including those that they are required to complete under the TSP program.[3] The panel reported that there were no mechanisms in place to issue credentials to those who needed them prior to Hurricane Katrina making landfall. Consequently, personnel from telecommunications companies were unable to gain access to repair some communications assets in the disaster area because they lacked the necessary credentials to access these areas. For example, during Hurricane Katrina, Louisiana authorities, among others, provided credentials to telecommunications repair crews to permit them access to certain affected areas; however, telecommunications personnel reported that within disaster areas, credentials that permitted access through one checkpoint would not be honored at another. In addition these personnel reported that in some cases the checkpoints required different documentation and credentialing before granting access to repair personnel. As a result, repair personnel had to carry multiple credentials and letters from various federal, state, and local officials authorizing their access to the disaster area. Furthermore, telecommunications personnel were unclear about which government agency had the authority to issue the necessary credentials. Similarly, repair crews reported that other factors delayed or interrupted the delivery of TSP services, such as the enforcement of curfews and other security procedures intended to maintain law and order.

Although the full scope of these credentialing issues is outside NCS's jurisdiction, under the communications annex of the revised 2008 National Response Framework, NCS is to coordinate with other emergency support function 2 (ESF-2) support agencies, among others, to ensure that telecommunications repair personnel have access to restore communications infrastructure in the incident area. To help facilitate this, NCS has taken steps to work with federal, state, and local government

[3]Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, *Report and Recommendations to the Federal Communications Commission*, (Washington D.C., June 12, 2006).

agencies as well as the private sector to identify solutions. For instance, NCS has coordinated with emergency management officials in Georgia and Louisiana to develop standard operating procedures to ensure access for critical infrastructure workers during emergencies or disasters. NCS officials also told us that they have begun to catalog the access procedures for various states and localities that could be provided to telecommunications personnel in order to facilitate access to damaged infrastructure in the aftermath of an emergency or disaster. In addition, other federal agencies, such as the Federal Emergency Management Agency (FEMA), have also taken steps to address this issue. For example, in November 2008, FEMA released for comment credentialing guidelines for essential personnel who need access to disaster areas in order to facilitate response, recovery and restoration efforts.[4] The guidelines are intended to provide a uniform approach at the state and local level to provide telecommunications repair personnel, among others with access and credentials needed to enter a disaster area in order to expedite the restoration of communication capabilities.

[4]DHS defines credentialing as the administrative process for validating personnel qualifications and providing authorization to perform specific functions in response to an emergency or disaster.

Appendix IV: GETS and WPS Performance during Select Emergency Events

Government Emergency Telecommunications Service (GETS) and the Wireless Priority Service (WPS) are designed to achieve a probability that 90 percent of calls made using these services will successfully connect. The ability to communicate is critical to coordinating emergency response and recovery efforts during the first 72 hours following an emergency; however, the availability of communications can be disrupted by increased call volume or outages that occur in wireline and wireless networks. According to NCS, telephone calls made without the use of GETS or WPS during nonemergency periods generally result in a 99 percent likelihood of successful completion—that is the (1) called party answers the call, (2) called number rings but is not answered, or (3) called number responds with a busy signal. However, during a disaster or emergency event, NCS officials stated that the public switched telephone network (PSTN) can experience up to 10 times the normal call volume. Conversely, without using GETS or WPS, approximately 9 out of every 10 calls would not complete during a time period when the PSTN is highly congested.

NCS's priority calling programs services have been used to facilitate communications across the spectrum of emergencies and other major events dating back to the 1995 Oklahoma City Bombings through the recent 2009 Presidential Inauguration. GETS and WPS usage has varied greatly during disasters or emergencies as the programs have evolved and the programs have generally achieved call completion rates that range from 68 percent to 99 percent. For example, during the 1995 Oklahoma City bombings, of 429 GETS calls attempted 291 calls that may not have otherwise been completed due to network overload reached the intended destination number and resulted in a call completion rate of about 68 percent.[1] In contrast, during Hurricane Katrina in 2005, the number of GETS calls attempted was 28,556, of which 27,058 (or 95 percent) were successfully completed (see table 5). Additionally, GETS and WPS capabilities were also used during the 2003 power outage that affected New York City and other areas. During this event, there were fewer GETS and WPS calls made in comparison to other events; however, the call completion rates for the duration of the event were 92 percent and 82 percent respectively.

[1]At that time, GETS was in the early stages of deployment and had not yet achieved initial or full operating capability.

Table 5: GETS and WPS Performance during Select Emergency Events

Event	Time frame following onset of event	Date	GETS calls attempted	GETS calls completed	GETS call completion rate	GETS cards distributed	WPS calls attempted (a)	WPS calls completed (b)	WPS Call completion rate
September 11, 2001 Terrorist Attacks	24 hours	11-Sep-01	2,283	2,025	89%	100	Data unavailable as WPS did not yet exist.		
	48 hours	12-Sep-01	628	556	89%	100			
	72 hours	13-Sep-01	675	617	91%	155			
	Total duration of event	11-27 Sep-01	19,071	18,117	95%	1,956			
2003 Northeastern Blackout	24 hours	14-Aug-03	658	604	92%	21	22	13	59%
	48 hours	15-Aug-03	344	308	90%	20	38	28	74%
	72 hours	16-Aug-03	85	85	100%	0	56	55	98%
	Total duration of event	14-16 Aug-03	1,087	997	92%	41	116	95	82%
2005 Hurricane Katrina	24 hours	29-Aug-05	1,075	1,030	96%	208	656	611	93%
	48 hours	30-Aug-05	2,071	1,989	96%	109	1,400	1,217	87%
	72 hours	31-Aug-05	2,345	2,236	95%	166	1,728	1,528	88%
	Total duration of event	29 Aug-09 Sep-05	28,556	27,058	95%	1,027	3,784	3,356	89%
2005 Hurricane Rita	24 hours	22-Sep-05	1,783	1,628	91%	0	471	428	91%
	48 hours	23-Sep-05	1,211	1,107	91%	0	728	617	85%
	72 hours	24-Sep-05	817	756	93%	139	621	540	87%
	Total duration of event	22 -29 Sep-05	14,139	13,475	95%	1,356	2,308	2,028	88%
2007 San Diego Wildfires	24 hours	24-Oct-05	458	458	100%	0	783	780	100%
	48 hours	25-Oct-05	1,277	1,276	100%	317	861	855	99%
	72 hours	26-Oct-05	1,988	1,987	100%	141	517	507	98%
	Total duration of event	24-28 Oct-05	5,152	5,147	100%	543	2,617	2,582	99%
2008 Hurricane Gustav	24 hours	1-Sep-08	1,200	1,199	100%	0	395	369	93%
	48 hours	2-Sep-08	1,404	1,401	100%	0	611	588	96%
	72 hours	3-Sep-08	517	503	97%	6	785	765	97%
	Total duration of event	1-3 Sep 2008	7,026	6,923	99%	555	3,311	3,028	91%
2008 Hurricane Ike	24 hours	11-Sep-08	1,629	1,625	100%	53	580	528	91%
	48 hours	12-Sep-08	1,345	1,337	99%	52	821	756	92%
	72 hours	13-Sep-08	2,420	2,344	97%	0	1,011	983	97%
	Total duration of event	11-18 Sep-08	17,525	17,301	99%	1,433	7,231	6,884	95%

Event	Time frame following onset of event	Date	GETS calls attempted	GETS calls completed	GETS call completion rate	GETS cards distributed	WPS calls attempted (a)	WPS calls completed (b)	WPS Call completion rate
2009 Presidential Inauguration	24 hours	16-Jan-09	1,260	1,235	98%	23	536	372	69%
	48 hours	17-Jan-09	228	228	100%	0	86	58	67%
	72 hours	18-Jan-09	222	220	99%	0	156	96	62%
	Total duration of event	16-20 Jan 2009	4,032	4,005	99%	1,188	1,615	1,050	65%

Source: NCS.

Note: In some cases, call completion rate may not equal 100% due to rounding.

Appendix V: NS/EP Categories That Qualify for NCS's Priority Telecommunications Services

The National Communications System (NCS) uses five broad categories to determine who may be eligible to participate in its priority calling programs such as the Government Emergency Telecommunications Service (GETS) and the Wireless Priority Service (WPS). Eligible subscribers may include personnel from federal, state, local, or tribal government; as well as private industry and or non-profit organizations (see table 6 below for further detail on each of these categories). In addition, these categories are used to prioritize WPS calls in order to further ensure that communications are first available for senior executive leaders and policy makers at the federal, state, and local government level. The Federal Communications Commission (FCC), in response to NCS's request, established these priority levels that are used to determine which WPS calls are to receive the first available channel with level five receiving the lowest priority (though all levels receive priority over non-WPS callers).[1] In the event of an emergency and network congestion, the mobile switching center queues the call according to the subscriber's priority level and call initiation time. For example, authorized staff from the Executive Office of the President would receive priority over national security and emergency preparedness (NS/EP) officials who have responsibility for public health and law enforcement if they placed calls at the same time. NCS has not determined whether a similar approach is required for the GETS program; however, if it is determined that a similar approach is needed—NCS believes it can apply the WPS approach to the GETS program. Table 6 also shows the priority level for each user category.

[1] 47 C. F. R. pt. 64, App. B.

Table 6: NS/EP Categories That Qualify for NCS's Priority Telecommunications Services

NS/EP category	Priority level	Description	Examples of positions that could qualify for GETS and WPS
Executive Leadership and Policymakers	❶	Individuals in high-level government positions	• The President of the United States, the Secretary of Defense, selected military leaders, and the minimum number of senior staff • Members of the United States Congress and senior staff • State governors, lieutenant governors, cabinet-level officials responsible for public safety and health, and the minimum number of senior staff • Mayors, county commissioners, and the minimum number of senior staff
Disaster Response/Military Command and Control	❷	Individuals eligible for this category include personnel key to managing the initial response to an emergency at the local, state, regional and federal levels. Personnel selected for this priority level should be responsible for ensuring the viability or reconstruction of the basic infrastructure in an emergency area. In addition, personnel essential to continuity of government and national security functions (such as the conduct of international affairs and intelligence activities) are also included in this priority.	• Federal emergency operations center coordinators, e.g., Manager, National Coordinating Center for Telecommunications, National Interagency Fire Center, Federal Coordinating Officer, Federal Emergency Communications Coordinator, Director of Military Support • State emergency services director, National Guard Leadership, State and Federal Damage Assessment Team Leaders • Federal, state and local personnel with continuity of government responsibilities • Incident Command Center Managers, local emergency managers, other state and local elected public safety officials • Federal personnel with intelligence and diplomatic responsibilities
Public Health, Safety, and Law Enforcement	❸	Individuals eligible for this category are individuals who direct operations critical to life, property, and maintenance of law and order immediately following an event.	• Federal law enforcement command • State police leadership • Local fire and law enforcement command • Emergency medical service leaders • Search and rescue team leaders • Emergency communications coordinators
Public Services/Utilities and Public Welfare	❹	Individuals eligible for this category are those users whose responsibilities include managing public works and utility infrastructure damage assessment and restoration efforts and transportation to accomplish emergency response activities.	• Army Corps of Engineers leadership • Power, water and sewage and telecommunications utilities • Transportation Leadership

NS/EP category	Priority level	Description	Examples of positions that could qualify for GETS and WPS
Disaster Recovery	❺	Individuals eligible for this category are those individuals responsible for managing a variety of recovery operations after the initial response has been accomplished. These functions may include managing medical resources such as supplies, personnel, or patients in medical facilities. Other activities such as coordination to establish and stock shelters, to obtain detailed damage assessments, or to support key disaster field office personnel may be included.	• Medical recovery operations leadership • Detailed damage assessment leadership • Disaster shelter coordination and management • Critical Disaster Field Office support personnel

Source: NCS.

Appendix VI: Comments from the Department of Homeland Security

Office of GAO/OIG Audit Liaison
U.S. Department of Homeland Security
Washington, DC 20528

Homeland Security

August 7, 2009

Mr. William O. Jenkins, Jr.
Director
Homeland Security and Justice Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Jenkins:

Subject: GAO 09-822, *Emergency Communications: National Communications System Provides Programs for Priority Calling, but Planning for New Initiatives and Performance Measurement Could Be Strengthened*

The Department of Homeland Security (DHS) appreciates the opportunity to review and comment on the U.S. Government Accountability Office's (GAO) draft report referenced above. The GAO came to several conclusions with regard to the current state of the National Communications System (NCS). The Department agrees with some of these assertions and disagrees with others; we appreciate the opportunity to clarify.

1. *Recommendation:* Develop an evaluation plan for its satellite pilot program that includes milestones for continued implementation and a methodology for assessing the results of the pilot before moving forward with program.

   DHS Response: Non-concur. The satellite pilot program is now complete. At the time of the audit, it was on hold. Though the capability and services offered by the pilot could be beneficial in catastrophic events, NCS believes other, readily available technologies can fulfill this requirement. During the course of the GAO discussion, the NCS realized the objectives and goals of the pilot were met. Specifically, it proved that Government Emergency Telecommunication Service (GETS) is interoperable with satellite communications, there is no priority to satellite mobiles, and that satellite phones have evolved to be similar in operation to cellular phones. Lessons learned are being developed to reflect NCS's analysis of the pilot.

2. *Recommendation:* Develop program plans for the NS/EP Next Generation Network (NGN) initiative that outline an acquisition approach based on available technologies, realistic cost estimates, and that include mitigation plans to address identified challenges and risk.

DHS Response: Concur. The NCS follows a structured approach in its design, development, and implementation of program plans. The NCS assesses industry trends to identify technology insertion for both program enhancements and mitigation plans.

3. *Recommendation:* Follow best practices for strategic planning in finalizing the NCS strategic plan including identifying the resources needed to achieve its strategic goals and objectives and providing a description of the relationship between planned initiatives such as the NS/EP NGN and strategic goals.

   DHS Response: Concur. NCS has worked diligently to identify and acquire resources, and to map program initiatives to its own mission and the Department's broader strategic direction. All NCS activities are directly linked to the mission and the associated performance measures.

4. *Recommendation:* Strengthen NCS's performance measurement efforts by (1) developing measures to cover all core program activities, (2) exploring opportunities to develop more outcome-oriented measures, (3) ensuring performance measure baselines are reliable and based upon past performance, and (4) improving the clarity of its call completion measure.

   DHS Response: Concur. NCS will continue to develop performance measures at all levels to monitor strategic progress and program success, align priorities, and link programs and operations to mission, resource priorities, and strategic objectives.

In its review of subscriber database accuracy, DHS disagrees with the GAO's statements that NCS should be able to easily determine whether certain individuals serving in public positions were still entitled to be GETS subscribers. GAO expects NCS to terminate access for such individuals regardless of whether the subscriber's organization has notified NCS to do so. The NCS does, in counsel with agency Point of Contacts (POCs), perform updates to the subscriber database. NCS also reminds POCs at user conferences to keep databases updated, and has instituted quarterly reminders for subscribers' POCs.

Finally, the report suggests that NCS's outreach efforts are limited to attendance at emergency management conferences, writing articles for emergency management and telecommunications publications, as well as deploying outreach coordinators to promote NCS's priority calling programs. In addition to these efforts, the NCS also meets with other governmental bodies, which should be reflected in this report.

We appreciate the opportunity to comment on this draft report.

Sincerely,

Jerald E. Levine
Director
Departmental GAO/OIG Liaison Office

Appendix VII: GAO Contacts and Staff Acknowledgments

GAO Contacts

William O. Jenkins, 202-512-8777 or jenkinswo@gao.gov

Staff Acknowledgments

In addition to the contact named above, Kirk Kiester, Assistant Director, and Candice Wright, Analyst-in-Charge, managed this review. Mark Abraham, Flavio Martinez, and Daniel Paepke made significant contributions to the work. David Alexander and Arthur James assisted with design, methodology, and data analysis. Sally Williamson provided assistance in report preparation. Pille Anvelt provided assistance with the report's graphics.

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