THE **NECP**
National Emergency Communications Plan

NECP Spotlight:
Making the Most of Next Generation 9-1-1

INTRODUCTION

The influx of rapidly evolving technologies, such as those enabled by broadband-based connectivity, provides the public safety community with an array of new capabilities. These capabilities help public safety plan for, coordinate, and use communications to support response and recovery operations. One of these critical technologies is Next Generation 9-1-1 (NG911), a multifaceted upgrade to the traditional 911 analog systems where Emergency Communications Centers (ECCs) are updated to a digital or Internet-Protocol based 911 system. The widespread implementation of NG911 will enhance emergency number services by creating a streamlined system to allow the public to send voice, photos, videos, and text messages to the 911 network and allow public safety officials to leverage a wide range of data like telematics, geographic information systems (GIS), and even building plans.

The National Emergency Communications Plan (NECP) is the Nation's strategic plan to strengthen emergency communications and advocates that public safety organizations continually evaluate and implement programs to keep pace with technological advancements. This spotlight will examine the current state of NG911 implementation in North Carolina, Tennessee, and Virginia, and demonstrate how NECP recommendations promote the adoption of new technologies to meet mission-critical needs.

AN IN-DEPTH LOOK

Since 2012, the state of Tennessee has pioneered the stability of the NG911 network and remains to be a model for other states and territories to follow. All districts in Tennessee follow a three-stage process towards complete NG911 implementation, with the last stage requiring district-wide installment of transitional automatic location identification services. The technology used by Tennessee is a nationally recognized, Emergency Services Internet Protocol Network called NetTN. Since the introduction of NetTN seven years ago, over 260,000 calls on average were processed monthly for emergency dispatch with an 86 percent call volume from wireless callers.
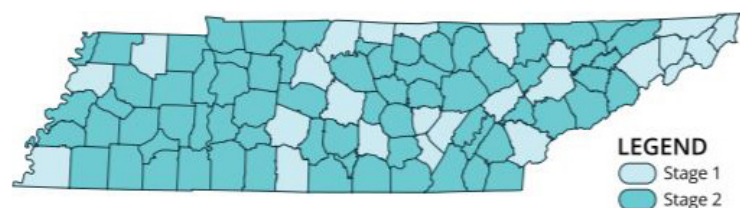

NG911 STATUS

LEGEND
Stage 1
Stage 2

Figure 1[1]

After modeling their own NG911 system after Tennessee, North Carolina took additional steps to create the first of its kind Network Monitoring and Assistance Center (NMAC). Here, 911 call center personnel and users can report network issues for troubleshooting resolutions. Any issues involving, but not limited to, equipment or networking will be transferred to the NMAC with the ability to reroute calls to alternative dispatch centers if a particular region experiences a high call volume. As states and localities across the country make the transition to NG911 systems, North Carolina recognized the need for 911 managers and directors to acclimate to this new national standard of emergency communications. NMAC serves for a resource center for North Carolina's 127 call centers, 16 of which use NG911 with the remaining centers slated to use it by 2021.

Virginia is approaching NG911 in a multi-faceted strategy, similar to Tennessee and North Carolina. In addition to implementing a similar monitoring and troubleshooting system as North Carolina, Virginia relies heavily upon GIS technology. The Virginia Department of Emergency Management formed the 9-1-1 & Geospatial Services Bureau to collectively assist any local 911 or GIS program to provide essential services throughout the state. The first deployment of NG911 took place in Fairfax County in the Summer of 2020 with 123 deployments remaining. Virginia anticipates being fully deployed by the Summer of 2023.

"Across the country, public safety leaders increasingly are viewing cybersecurity as a priority, recognizing that cybercriminals are targeting 911 operations because of their mission-critical nature [...] Understanding the vulnerabilities of our 911 network is a critical step toward implementing a proactive cybersecurity risk-prevention program in the state."
-Curtis Sutton, Executive Director of the Tennessee Emergency Communications Board [2]

NECP ALIGNMENT

Successful implementation of technologies like NG911 requires meticulous planning and coordination. By leveraging the NECP's recommendations and the guidance in the National 911 Program's NG911 Roadmap, public safety leaders can better develop strategies and technology roadmaps for implementing standards-based, vendor-neutral devices and applications that can sustain the unique public safety operating environment and provide mission-critical communications.

NECP Goal	Objective	Objective Description	Real World Example
Goal 4: Communications Coordination	4.3	Develop or update operational protocols and procedures to support interoperability across new technologies	North Carolina's inclusion of the NMAC and Virginia's plan to implement a similar system, led by the Virginia Information Technologies Agency, offers resource and assistance to catalog and troubleshoot 911 issues within the state
Goal 4: Communications Coordination	4.4	Strengthen resilience and continuity of communications throughout operations	The inclusion of NG911 by Tennessee, North Carolina, and Virginia drew additional participation from the public and 911 first responders to uphold the streamlined standard for emergency communications.
Goal 5: Technology and Infrastructure	5.1	Support public safety requirements that drive research, development, testing, and evaluation of emergency communications technology	North Carolina's NMAC and Virginia's plan to implement a similar system, act as a resource for the state ECCs to troubleshoot issues and can reroute calls during high volume call periods. NMAC and Virgina's furture center also act as a guide for best practices and standard operating procedures.
Goal 6: Cybersecurity	6.1	Develop and maintain cybersecurity risk management	Public safety infrastructure is not immune to malicious intrusions and must identify any existing flaws within their cybersecurity management. Tennessee partnered with an information technology support services firm to assess the cybersecurity status of Tennessee's ECCs.

RESOURCES

Through NG911, not only those who report emergencies but those who plan for, coordinate, and respond to said emergencies will have access to enhanced capabilities. As the program is implemented throughout the country, gaps within interoperability are addressed through the adaptability of each state, territory, and locality, as recommended by the NECP.

For more information on the NECP, visit: cisa.gov/necp

Want to share your organization's successes and alignment to the NECP? Email us at: necp@cisa.dhs.gov

For more information on NG911, visit:
• NG911 Roadmap: 911.gov/project_ng911roadmap.html
• National 911 Program Website: 911.gov/issue_nextgeneration911.html
• NG911 Self-Assessment Tool: 911.gov/documents_tools/NG911.html
• SAFECOM NG911 Website: cisa.gov/safecom/next-generation-911
• Cyber Risks to Next Generation 911 White Paper and Cyber Risks to 911: Telephony Denial of Service: cisa.gov/publication/next-generation-911

[1] Tennessee Department of Commerce & Insurance (2018). "Next Generation 911 (NG911)" Tennessee Emergency Communications Board. https://www.tn.gov/content/dam/tn/commerce/documents/e911/posts/TECB_NG911-Aug-18.pdf
[2] PSC Online (2020). "Tennessee Emergency Communications Board to Focus on Enhancing Statewide Cybersecurity" APCO International. https://psc.apcointl.org/2020/07/30/tennessee-emergency-communications-board-to-focus-on-enhancing-statewide-cybersecurity/