



Commission to Advance NG911 Across Maryland  
Year Four Report  
“Preparing for the Future of NG911 in Maryland”

December 2021

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December 2, 2021

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Re: Next Generation 9-1-1 Commission's 4th Annual Report per Chapter 302, 2018 (MSAR #11656)

Attached is the Next Generation 9-1-1 (NG911) Commission's fourth and final report. A bipartisan group of legislators; 9-1-1 Center directors; technology and telecommunications industry representatives; Cybersecurity professionals; and other stakeholders have been diligently preparing Maryland to shift to NG911 technology. Inspired by the death of Rockville activist and District 17 resident, Carl Henn, when 9-1-1 failed, I have chaired the Commission since its inception. We released three previous annual reports in [2018](#), [2019](#), and [2020](#) that were incorporated into 11 laws that were enacted with bipartisan support. As a result of our efforts, Maryland is at the forefront nationally as we transition to NG911.

Issues were debated and approved by our four subcommittees: Finance & Structure (F&S); Oversight & Accountability (O&A); Staffing & Training (S&T); and Technology & Cybersecurity (T&C), and then voted on by the full Commission.

This final 98-page report includes 24 recommendations, many of which will be incorporated into legislation for the 2022 Session. Even those who are unfamiliar with 9-1-1 jargon should find this public safety document to be mostly clear and accessible. While most acronyms are translated at least once, we've also included a glossary on page 63. Among the highlights are:

- Streamlining access to mental health services for 9-1-1 Specialists;
- Authorizing counties to set the local portion of the 9-1-1 fee;
- Providing Workers' Compensation for 9-1-1 Specialists with PTSD;
- Requiring timely notification of 9-1-1 outages;
- Increasing penalties for "Swatting" and cyberattacks on 9-1-1 Centers;
- Mandating Implicit Bias Training for 9-1-1 Specialists;
- Continuing Comptroller audit reporting;
- Improving 9-1-1 Board operations;
- Educating the public about Kari's Law;

- Collecting 9-1-1 data statewide;
- Reclassifying 9-1-1 Specialists as First Responders;
- Enforcing cybersecurity standards at all 9-1-1 Centers;
- Ensuring that emergencies can be located in multi-story buildings (Z-axis); and
- Facilitating remote call-taking.

Vice Chair Steve Souder continues to offer his more than 50 years of 9-1-1 expertise to the Commission and deserves special recognition for his lifetime of leadership and service. I am deeply grateful to the Commissioners, consultants, and everyone who contributed over the past four years. Chief among those are subcommittee Chairs Charlynn Flaherty (S&T), Randy Cunningham (T&C), and Scott Brillman (O&A); my dedicated legislative colleagues Senator Ed Reilly and Delegates Susan Krebs and Terri Hill (as well as former Delegate, now Senator Michael Jackson); collaborative Kevin Kinnally of the Maryland Association of Counties; the brilliant team at Mission Critical Partners; my wonderful legislative staff; industry experts; and everyone else who contributed to our successful work. An indicator of my Commissioners' extraordinary commitment to NG911 in Maryland is the generosity of Chief Richard Brooks (Cecil County) and Bill Ferretti (Montgomery County), who continued to contribute their valuable expertise after retiring and moving away.

As Chair, I have been determined that the Commission's successes apply to each of the 24 Counties to ensure that "all boats rise together." As we wrapped up our fourth and final year, the Commission was especially focused on the courageous women and men under the headset-- the often overlooked sheroes and heroes who answer our 9-1-1 requests for assistance each and every day.

On a personal note, chairing the NG911 Commission over the past four years has truly been one of the greatest honors of my career. The overwhelming number of my legislative colleagues understood the bipartisan nature of our emergency system and the urgent need to save lives. The Maryland Association of Counties has been a steadfast supporter of virtually every initiative of this Commission. MD Department of Emergency Management (Acting) Secretary Russell Strickland and Comcast's Sean Looney (retiring shortly) merit acknowledgment for helping us to wrestle some of the most complex and thorny issues before us.

Please don't hesitate to contact me if you have any questions or need more information. We are united in our commitment to saving lives as we modernize Maryland's emergency services; let's work together to ensure that there are no more avoidable deaths like Carl Henn's in Maryland in the years to come.

Respectfully submitted,

***Cheryl C. Kagan***

Cheryl C. Kagan  
 Senator, District 17 (Rockville & Gaithersburg)  
 NG911 Commission Chair

PS: If you'd like to see a photographic overview of the Commission's tenure, please check out <https://bit.ly/NG911Slideshow>. This short video (and meaningful song by my friends David Roth & Glen Roethel) captures some of the key moments with our public safety leaders.

# Executive Summary

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## *The Commission to Advance Next Generation 9-1-1 Across Maryland* *“All Boats Rise Together”*

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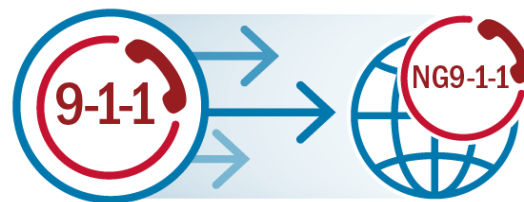
### Advancing to Next Generation 9-1-1

In an individual’s darkest moment, one expects the ability to reach 9-1-1 and get help right away. Unfortunately, the technology supporting 9-1-1 is not as sophisticated as with other services and applications. It takes time and resources to verify an individual’s location; categorize a request for service; determine resources; and sometimes calm the individual in need of help. While the technology is improving, there is much to be done to advance capabilities in the Public Safety Answering Point (PSAP) or 9-1-1 center.

**Maryland (State) has made great strides in advancing the 9-1-1 infrastructure over the past five years, and every PSAP in the state is in the process of implementing (or has implemented) Next Generation 9-1-1 (NG911).** See

[Appendix B](#) for deployment details by county. This foundational step enables improved technology and services through use of an advanced Internet Protocol (IP) network<sup>1</sup> and solutions that will eventually support the delivery of improved location information, images, and videos with a 9-1-

1 request for service. These enhancements, coupled with updated operational procedures, will provide 9-1-1 Specialists, First Responders, and others with more sophisticated methods of providing help.



### The Commission to Advance Next Generation 9-1-1 Across Maryland

The Commission to Advance Next Generation 9-1-1 Across Maryland (Commission), [established in 2018](#) (SB285/ HB634) and [extended in 2020](#) (SB47/HB44), was formed to address the needs of the State and facilitate the transition using a comprehensive approach to improving the 9-1-1 system. In 2021, despite the Coronavirus (COVID-19), legislation was enacted that addressed:

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<sup>1</sup> Emergency Service Internet Protocol Network (ESInet)

#### 9-1-1 Funding

- Assessing the impact of 9-1-1 funding changes on Maryland counties
- Seeking action on audit activities

#### 9-1-1 Oversight

- Creating the Maryland Department of Emergency Management (MDEM) as a Cabinet-level department and moving the Maryland 9-1-1 Board under their jurisdiction as an autonomous agency
- Restructuring the 9-1-1 Board
- Strengthening outage notification rules
- Identifying an enforcement agency for Kari's Law (ability to dial 9-1-1 without a prefix)

#### 9-1-1 Personnel

- Enhancing training standards for 9-1-1 Specialists
- Studying Workers' Compensation laws to support 9-1-1 Specialists
- Developing recruitment strategies and best practices

#### 9-1-1 Technology

- Improving Geographic Information System (GIS) technology for better location accuracy
- Expanding the broadband infrastructure to support remote call-taking
- Addressing the severity of swatting incidents on individuals and 9-1-1

**The Commission is in its final year, and this group of dedicated public safety officials, industry subject-matter experts, professional advisors, and 9-1-1 Specialists worked diligently to tackle tough topics and unfinished initiatives to further improve the 9-1-1 system and safeguard it for the future.** To help serve and support the future of NG911 in the state, the Commission addressed 9-1-1 Specialist reclassification, compensation, and benefits; authorizing counties to set the local portion of the 9-1-1 fee and understanding the impacts of the 9-1-1 fee adjustments; defining 9-1-1 Board member roles and responsibilities and succession planning; and Cybersecurity enhancements to protect Maryland's PSAPs.

As with the past three years, the Commission addressed these matters and more through four subcommittees: Finance and Structure; Staffing and Training; Technology and Cybersecurity; and Oversight and Accountability.

### Recommendations

In 2021, the Commission approved 24 recommendations<sup>2</sup> to further strengthen the 9-1-1 system and support the foundational work of the previous three years. Each item was first addressed and agreed to by the subcommittees via a voting process. They were then presented to the full Commission, where members could question and amend the wording before a final vote.

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<sup>2</sup> Individuals with a potential conflict of interest on a recommendation recused themselves from voting on some of these recommendations.

\* These recommendations require legislative change

Number	Category	Commission Recommendations
1*	County Authority to Set the 9-1-1 Fee	9-1-1 revenues have fallen short of expectations following the fee adjustments in Carl Henn's Law (2019). Several counties have found it necessary to raise the county portion of the 9-1-1 fee to the maximum amount (\$1.50) allowed. The Commission recommends that all counties be authorized to set the local portion of the 9-1-1 fee to a level that will cover the eligible expenses of their PSAP.
2	Enhancing Comptroller Reporting	Because of the new and evolving 9-1-1 fee structure, it is necessary to ensure carrier compliance with the proper fee remittance. In addition to the annual report to the 9-1-1 Board, the Comptroller's Office of Maryland shall provide quarterly updates on carrier fee remittance audits and notify the 9-1-1 Board immediately of any deficiencies through December 31, 2024. After that, quarterly reports will be made available to the 9-1-1 Board upon request.
3	Payment Portal	Due to the ongoing challenges with delayed payments to vendors and the lack of visibility into the payment process, the Commission recommends the creation of a procurement and payment portal with support from the Comptroller, Department of General Services (DGS), and the Department of Information Technology (DoIT). In addition to supporting Maryland's 24 PSAPs, the portal will provide clarity for all departments and agencies using the Comptroller's Office for financial transactions.



Number	Category	Commission Recommendations
4*	Workers' Compensation	<p>A 9-1-1 Specialist's daily job is demanding, harrowing, and essential to public health and safety. Maryland's 9-1-1 Specialists are the First, First Responders in an emergency. They regularly receive some of the most challenging and traumatizing appeals for help. Their courageous public service is essential to saving lives. 9-1-1 Specialists are routinely exposed to events causing posttraumatic stress disorder (PTSD) during the course of their employment. Because of the severe nature and cumulative effect of PTSD, it is the duty of each county to provide coverage to 9-1-1 Specialists for their work-related injury. PTSD and other mental health conditions suffered by a 9-1-1 Specialist are presumed to be compensable injuries or occupational diseases when evidence indicates causation by an event or events arising out of and in the course of the 9-1-1 Specialist's employment.</p> <p>Mental health conditions such as PTSD shall meet the criteria specified by the most recent edition of the American Psychiatric Association's <i>Diagnostic and Statistical Manual of Mental Disorders</i>. The 9-1-1 Specialist must be examined and diagnosed with the mental health condition(s) by a psychologist or psychiatrist licensed to practice in the jurisdiction where treatment is rendered. No compensation shall be awarded when PTSD is a result of a personnel-related action including, but not limited to, disciplinary action, work evaluation, job transfer, layoff, involuntary demotion, termination, retirement, or similar action taken in good faith by the employer.</p> <p>The Commission recommends a Workers' Compensation policy that provides coverage for a 9-1-1 Specialist to include coverage for PTSD and recognizes that the number of PTSD compensable claims may affect the Maryland Workers' Compensation system causing actual claim frequency to be slightly different than otherwise expected.</p>
5	9-1-1 Board Handbook	<p>Because of the need to ensure that the important role of the 9-1-1 Board is documented and to help new members understand their obligations, the Commission strongly recommends that the 9-1-1 Board create a 9-1-1 Board Member Handbook with an emphasis on:</p> <ul style="list-style-type: none"> <li>• Roles and responsibilities;</li> <li>• 9-1-1 Trust Fund project funding request process;</li> <li>• Allowable funding guidelines;</li> <li>• Key partners; and</li> <li>• Leadership in improving emergency communications for 9-1-1.</li> </ul>

Number	Category	Commission Recommendations
6	9-1-1 Board Vacancies	To support the important work of the newly expanded 9-1-1 Board and the increased funding, the Commission recommends the 9-1-1 Board, in coordination with MDEM, establish a protocol for quickly recommending candidates who have the appropriate expertise and are deeply committed to improving 9-1-1 emergency services in Maryland for vacant board positions.
7*	9-1-1 Board Leadership	The Commission recommends that the position of Vice Chair be formalized in legislation. The 9-1-1 Board will nominate and select the individual from among its voting members. The appointee shall assume the roles and responsibilities in the Chair's absence.
8*	3-1-1	The Commission recommends further action by the 3-1-1 workgroup to develop and implement a statewide 3-1-1 system in Maryland.
9	Updates to COMAR	Code of Maryland Regulations (COMAR) contains outdated language related to the parent organization of the 9-1-1 Board, legacy 9-1-1 systems, and operations, and requires revisions to be applicable for NG911. The Commission recommends that the 9-1-1 Board make necessary updates with input from interested parties.
10	Statewide Data Collection and Reporting	The Commission recommends that the 9-1-1 Board evaluate what information should be collected at a state level to monitor the operational health and security of the NG911 system and determine the best method for sharing and distributing the collected information to enhance situational awareness.
11	Kari's Law Public Education Campaign	Awareness and enforcement of Kari's Law will ensure that Maryland residents and visitors can dial 9-1-1 without any additional digits to obtain an outside line from a Multi-line Telephone System (MLTS) (e.g., hotel, business, etc.). The Commission recommends that the 9-1-1 Board, with the support of key stakeholders, develop an educational campaign that can be distributed via Maryland associations.
12	Outage Notification	<p>9-1-1 outages have a major impact on PSAPs and individuals seeking emergency assistance.</p> <p>On behalf of the Commission, Mission Critical Partners, LLC (MCP) filed comments with the Federal Communications Commission (FCC) on July 27, 2021, in response to the Third Notice of Proposed Rulemaking (NPRM) regarding 9-1-1 outage notifications (see <a href="#">Appendix G</a>).</p>

Number	Category	Commission Recommendations
13	Real-Time Text Enforcement	To ensure equal access to 9-1-1 services for Marylanders with disabilities, it is important that carriers start providing Real-Time Text (RTT) technology. The Commission sent a letter to the FCC on September 13, 2021, requesting they halt granting waivers and begin enforcing deadlines outlined in Title 47, Chapter I, Subchapter B, Part 67 of the Electronic Code of Federal Regulations (see <a href="#">Appendix H</a> ).
14*	9-1-1 Specialist Reclassification	9-1-1 Specialists are the first link in the chain of safety and survival—answering, triaging, and dispatching emergency requests for assistance and providing vital life-safety and life-saving instructions to those who live, work, and travel in Maryland. These essential employees are the First, First Responders and undergo comprehensive training; are certified in Emergency Medical Dispatch (EMD); Emergency Fire Dispatch (EFD); and Emergency Police Dispatch (EPD); and are the critical link between those in need and public safety responders (e.g., law enforcement, fire-rescue, and EMS personnel). 9-1-1 Specialists remain in constant contact with the emergency scene incident commander and other emergency responders throughout the incident, ensuring effective on-scene response, coordination, and timely resolution. Given the vital importance of our 9-1-1 Specialists, the Maryland General Assembly should reclassify 9-1-1 Specialists as public safety "First Responders."
15*	9-1-1 Specialist Compensation	Inadequate compensation is one of the leading causes of a jurisdiction's inability to recruit and retain qualified 9-1-1 Specialists. In keeping with the legislation (MD Public safety Code An. 1-302.1), the Commission recommends that local jurisdictions compensate 9-1-1 Specialists in a manner that is commensurate with their responsibilities, training, knowledge, and skills. The minimum wage is not considered to adequately satisfy these criteria, resulting in underqualified applicants and turnover.

Number	Category	Commission Recommendations
16*	Implicit Bias Training	<p>Per <a href="#">SB714</a> (2021), the Commission recommends that the 9-1-1 Board establish a plan to provide Implicit Bias Training to new and experienced 9-1-1 Specialists. This will help mitigate the potential impacts of discriminatory thinking and behavior. The 9-1-1 Board shall develop training standards and criteria and approve initial and ongoing training curriculum. PSAPs shall be audited at each annual inspection. If a PSAP does not demonstrate compliance, the 9-1-1 Board shall collaborate with the PSAP to develop a remediation plan, including an implementation timeline. The 9-1-1 Board may impose sanctions for failure to comply.</p> <p>In keeping with the legislative intent of SB714, 9-1-1 Specialist demographic information, including race and gender, listed by county and statewide (See <a href="#">Appendix J</a>), will be included in the 9-1-1 Board's annual report.</p>
17	Diversity in Recruitment	The 24 PSAPs and the 9-1-1 Board, in partnership with MDEM, shall create and share best practices for targeted recruitment efforts that will attract a broad applicant pool with the goal of diversifying the workforce.
18	Best Practices for Hiring	To assist Maryland's 24 PSAPs with the selection process for hiring personnel with the necessary skills, resilience, and adaptability to perform the tasks of a 9-1-1 Specialist, the 9-1-1 Board shall establish hiring best practices. Additionally, the 9-1-1 Board (in collaboration with MDEM) shall provide resources and relevant information to PSAPs to assist them in hiring the most qualified personnel.
19*	Occupational Wellness	To address confidentiality and safeguard an employee's ability to seek behavioral health care without impediment, and as part of the need for PSAPs to implement occupational wellness programs, it is critical that no county require a 9-1-1 Specialist seeking assistance to go through any chain of command to obtain care. Therefore, the Commission recommends, as part of a county's development of 9-1-1 Specialist occupational wellness programs, that any support is confidential between the employee and the provider.
20	Z-axis	9-1-1 systems that utilize a caller's location-based information shall have the ability to use solutions that meet the Z-axis metric and "Z" elevation if made available by the provider(s). The systems should be updated to use this information to assist in accurately locating an individual in a multi-story building.

Number	Category	Commission Recommendations
21	Remote Call-taking	<p>Because a PSAP evacuation or need for distributed staffing is a real possibility (e.g., COVID-19, system failure, etc.), remote call-taking, processing, and dispatching may be necessary as part of a PSAP's continuity of operations (COOP) plan. This requires many considerations, but the Commission has identified the following priorities and recommends that the 9-1-1 Board, Emergency Communications Committee (ECC), and jurisdictions:</p> <ul style="list-style-type: none"> <li>• Advocate for the expansion of broadband infrastructure to underserved areas to enable remote emergency support;</li> <li>• Enhance resiliency and redundancy throughout the 9-1-1 call-taking, processing, and dispatching environment;</li> <li>• Plan and implement dynamic call-routing as part of NG911 deployments;</li> <li>• Update policies, procedures, and memoranda of understanding/agreements (MOU/MOAs) with neighboring jurisdictions including municipalities, federal agencies, and college campuses to encompass these remote call-taking capabilities; and</li> <li>• Develop best practices regarding the technical, confidentiality, liability, and human factors of working in a remote environment.</li> </ul>
22*	Cybersecurity Practices	<p>With the increasing level of Cybersecurity risk, it is crucial that each PSAP in Maryland comply with the 9-1-1 Board's Cybersecurity policy. If a PSAP does not meet expectations during their annual inspection, the 9-1-1 Board shall work with the PSAP to develop an aggressive, consensus remediation plan and implementation timeline. Failure to adhere to the plan may result in the 9-1-1 Board deferring new, non-cybersecurity requests from the 9-1-1 Trust Fund until remediation is completed.</p>
23*	Swatting	<p>Misuse of the 9-1-1 system is detrimental to the reliability and availability of 9-1-1 and impacts a growing number of unsuspecting victims each year. The Commission recommends strengthening penalties for an individual found guilty of instigating a swatting incident and fraudulently sending public safety officers (special weapons and tactics [SWAT] teams) to the address of an innocent person.</p>

Number	Category	Commission Recommendations
24*	9-1-1 System Misuse	<p>The Commission recommends increasing penalties for misuse of the 9-1-1 system, including:</p> <ul style="list-style-type: none"> <li>• Telephony Denial of Service (TDoS): flooding a 9-1-1 Center's voice lines, preventing legitimate emergency calls from getting through;</li> <li>• Distributed Denial of Service (DDoS): maliciously disrupting a 9-1-1 Center by overwhelming its Internet network; and</li> <li>• Caller ID manipulation: using a false identity when repeatedly making phone calls or sending texts.</li> </ul>

\* These recommendations require legislative change.

# 1 Introduction

## 1.1 Overview of NG911

On February 16, 1968, the first 9-1-1 call was made in Haleyville, Alabama. Since then, 9-1-1 has become the universal number for requesting emergency assistance. Approximately 8,500 Maryland residents and visitors contact 9-1-1 each day. It is imperative that the 9-1-1 system not only works, but keeps pace with today's evolving communications technology. Unfortunately, the system (in Maryland and Nationwide) has lagged, and the capabilities do not always meet the expectations of those requesting emergency assistance.

The legacy 9-1-1 infrastructure (technology currently used by many Public Safety Answering Points (PSAPs) and 9-1-1 service providers) uses antiquated systems and technology that are nearing end of life. These systems require a transition to Next Generation 9-1-1 (NG911) technology utilizing an Emergency Services Internet Protocol (IP) network (ESInet) for call transport and Next Generation 9-1-1 Core Services (NGCS) for location identification and call routing.

Through the work of the Commission to Advance Next Generation 9-1-1 Across Maryland<sup>3</sup> (Commission), the Maryland 9-1-1 Board (9-1-1 Board)<sup>4</sup>, the Emergency Communications Committee (ECC), and the Maryland Association of Counties (MACo), Maryland is making great strides toward advancing NG911 across the state. Since the beginning of the Commission's efforts, the fundamental principle has been that "all boats rise together." This has been recognized over the past three years as **all Public Safety Answering Points (PSAPs) have implemented text-to-9-1-1; four PSAPs have successfully transitioned to NG911; and the other 20 are in the late stages of procurement or implementation.** The statewide text-to-9-1-1 deployment was a HUGE accomplishment for Maryland, as it enabled the ability for all residents and visitors to utilize services and reinforce the message — *call when you can, text when you can't*. The progress with NG911 is also commendable, as the transition is difficult and requires time and dedication both with vendors and PSAP personnel. As illustrated in the previous three Commission Reports, NG911 creates a robust and flexible infrastructure that will deliver 9-1-1 service today and into the future. It will process all call types—including voice, text-to-9-1-1, and crash notification—as well as photos and videos. The image below demonstrates the progression of 9-1-1 in a constantly evolving, technologically savvy society.

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*Since the beginning of the Commission's work, the fundamental principle has been that "all boats rise together."*

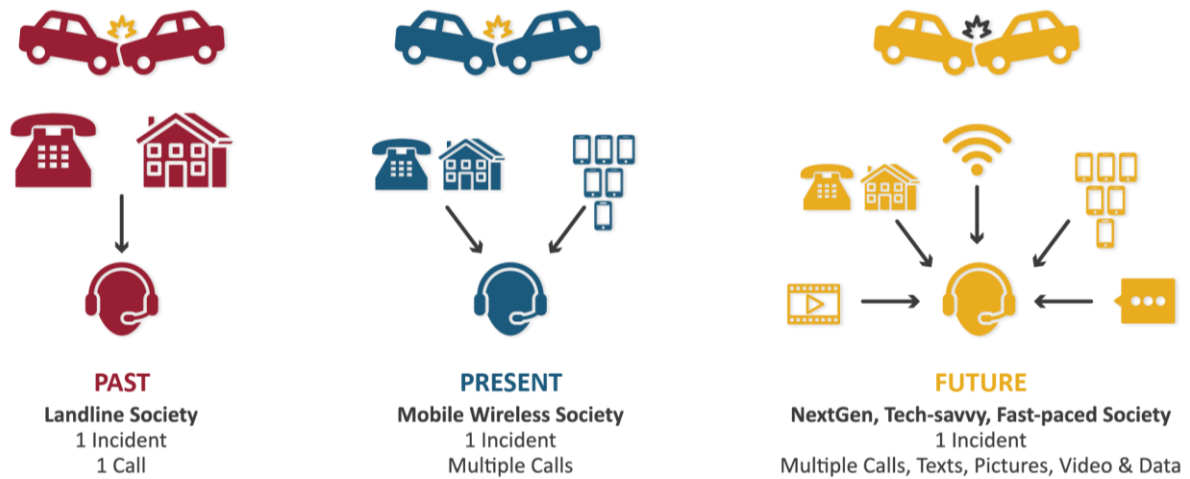
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<sup>3</sup> [Senate Bill 285/House Bill 634](#)

<sup>4</sup> Formerly known as the Emergency Numbers Systems Board (changed in law in 2020 [SB685/HB990](#)), the Maryland 9-1-1 Board, is responsible for distributing State 9-1-1 funding, inspections, and coordinating the training and enhancement of county 9-1-1 emergency systems.

Figure 1: 9-1-1 Technology Progression



The Commission was established in 2018 ([SB285/ HB634](#)) to identify the steps needed to help implement NG911 across the state. Commission members, comprised of 9-1-1 professionals, government representatives, industry and technology experts, and legislators, have worked diligently over the past four years to identify changes and legislation needed to help evolve 9-1-1 service in Maryland.

## YEAR FOUR – IMPROVING TODAY TO PROTECT TOMORROW

2021 is the final year of Commission meetings and preparation for legislative recommendations in 2022. Once again, this group of dedicated individuals addressed important topics that will enhance NG911 today and pave the way for a stronger emergency communications system tomorrow. The increased funding, as a result of [SB339/ HB397](#) (“Carl Henn’s Law”), raised much-needed revenue for improvements and technology upgrades. As such, all 24 PSAPs have made progress in implementing NG911 by completing the procurement process and beginning deployment. Four counties are now “live” with NG911 service, and one is expected to launch in December 2021.

In 2020, the Coronavirus (COVID-19) disrupted the standard method of operations. While disappointed by the need to hold all meetings virtually, the Commission achieved strong accomplishments. Recommendations resulted in three additional bills being passed:

- 1) [SB631](#) – Statewide 3-1-1 Nonemergency Telephone System – Convene stakeholders for planning and identifying implementation requirements;

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*In its penultimate year, the Commission felt it important to continue with a focus on the future – addressing issues that will leave a lasting impact for leaders overseeing 9-1-1 in the State and individuals under the headset.*

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- 2) [SB658/HB990](#) – Maryland Department of Emergency Management – Establishment and Transfer of Maryland 9-1-1 Board; and
- 3) [SB714/HB989](#) – 9-1-1 Emergency Telephone System – Alterations (Commission - Omnibus).

These three bills, along with those enacted in 2019 and 2020, have helped strengthen 9-1-1 funding, oversight, technology, and operations in Maryland. **In its final year, the Commission continued with a focus on the future—addressing issues that will leave a lasting impact for leaders overseeing 9-1-1 in the state as well as individuals under the headset.**

Technology, training, and operations are all supported by 9-1-1 funding. In 2019 with the passage of Carl Henn’s Law, the State 9-1-1 fee increased. It also expanded the 9-1-1 Board’s list of eligible expenditures. In 2020, the 9-1-1 Board increased project funding for the PSAPs. This resulted in an increase of approximately 83% to the State 9-1-1 Trust Fund and the capacity to fund a larger number of PSAP requests; however, **PSAPs in counties with smaller populations are still facing a financial burden for expenses not covered by the 9-1-1 Trust Fund.**

The 9-1-1 Board membership has been modified and expanded and now falls under a Cabinet-level department, the Maryland Department of Emergency Management (MDEM), formerly known as the Maryland Emergency Management Agency (MEMA). It is important that the 9-1-1 Board work to quickly recruit candidates for vacancies and develop documentation that ensures seamless operations in support of the 9-1-1 system in Maryland. Keeping pace with the recent legislative changes affecting 9-1-1 requires a continued partnership between the State agency and PSAPs.

9-1-1 Specialists, often recognized as the *First, First Responders*, are facing mental and physical struggles because of their duties. We MUST support their mental health needs by enhancing Workers’ Compensation laws and supporting their rights to seek assistance without notifying management. For years, PSAPs have struggled to keep people in this position. In 2021, that challenge has been exacerbated by COVID-19 and a labor market where less stressful jobs that pay a similar wage are widely available. This highlights the importance of adequate compensation and training to help recruit and retain individuals in this vitally important position.

As NG911 technology is being implemented and advancements are put into operations, it is critical that PSAPs maintain a focus on continued operations and Cybersecurity practices. The need for remote call-taking capabilities is a real possibility, and PSAPs need to be prepared with technology and procedures that provide options for continued 9-1-1 operations in an emergency. In addition, Z-axis (or vertical location information) will soon be delivered with wireless requests for assistance, so it is important that PSAPs are prepared to accept this data.

This Commission report (Year Four) builds upon years one through three, enhancing the technology, staffing, finance, structure, and oversight needed to advance NG911 in Maryland.

## 2 Terminology

Throughout this report, there are terms common in the public safety community. Some are highlighted below; a full glossary can be found in [Appendix A](#) found on page 63 of this report.

Table 1: Year Four Report Terminology

Terminology	Definition
9-1-1 Specialist	Professionals within a PSAP responsible for answering, triaging, and dispatching 9-1-1 requests for service. With NG911, they will be asked to manage emergency requests for service via text, video, and voice. They are often the “First, First Responders” who provide the emergency response, either directly or through communications with the appropriate law enforcement, fire, or emergency medical services (EMS) agencies.
9-1-1 Request for Assistance	The means by which the public communicates a need for help. With the “legacy system,” such requests solely have been via a telephone call. With NG911, individuals will also use other technologies.
County	Maryland’s 23 counties and the independent jurisdiction of Baltimore City.
Legacy Technology	For this report, “legacy technology” is the traditional 9-1-1 infrastructure used by most Maryland PSAPs and 9-1-1 service providers.
<a href="#">Maryland 9-1-1 Board</a> [Formerly known as the Emergency Number Systems Board [ENSB]]	The entity that distributes funding and coordinates installation and enhancement of county 9-1-1 emergency systems. It issues guidelines and evaluates county plans for these systems; supports training requests; performs PSAP inspections; oversees auditing of 9-1-1 Trust Fund accounts with the Comptroller; and sets criteria for reimbursing counties.
<a href="#">Maryland Association of Counties</a> (MACo)	A nonprofit, nonpartisan organization that serves Maryland’s 23 counties and Baltimore City by advocating for the needs of local government.
<a href="#">Maryland Department of Emergency Management</a> [formerly known as Maryland Emergency Management Agency [MEMA]]	The government agency that provides Maryland residents, organizations, and emergency management partners with expertise, programmatic activities, and leadership supporting resiliency across Maryland.
Maryland Joint Operations Center (MJOC)	A statewide communications hub for emergency responders and local emergency management run 24 x 7 x 365 by MDEM.
Next Generation 9-1-1 (NG911)	An Internet Protocol (IP)-based system comprised of managed Emergency Services IP networks (ESInets), hardware, software, and databases that

Terminology	Definition
	replicate traditional 9-1-1 service and enable enhanced capabilities for PSAPs (i.e., data, video, images, text).
Public Safety Answering Point (PSAP)	A center that receives 9-1-1 requests for assistance and processes them according to established protocols and operational policies. There are 24 primary PSAPs in Maryland that are eligible for funding.

## 3 Commission Background

### 3.1 Year One (2018–2019) Commission

The Commission made great strides in a short period of time in 2018 by forming four subcommittees that worked tirelessly with four distinct areas of focus: Finance and Structure; Staffing and Training; Technology and Cybersecurity; and Oversight and Accountability.<sup>5</sup>



The subcommittees made 23 recommendations<sup>6</sup> that were unanimously approved<sup>7</sup> by the Commission; many of these were included in 2019 legislation that passed the General Assembly and were signed into law by the Governor—[SB339/HB397](#) (Carl Henn’s Law), [SB284/HB1090](#) (9-1-1 Specialist compensation and benefits), and [SB5/HB215](#) (Public Information Act – 9-1-1 Communications). The recommendations addressed a variety of topics, including:

<sup>5</sup> In subsequent years the Commission saw shifts in focus areas, with the Finance Subcommittee becoming Finance & Structure and the Staffing Subcommittee becoming Staffing & Training.

<sup>6</sup> [2018 Commission Report](#)

<sup>7</sup> Individuals with a potential conflict of interest on a recommendation recused themselves from voting.

Year One Focus		
Fee Adjustment	Interconnectivity	Certification
Cybersecurity	Public Education	9-1-1 Specialist Recognition
Emerging Technology	Data Collection	Privacy Protection
Liability	Support & Guidance	Compensation
Records Retention	Staffing Levels	Education Programs & Resources
Funding Distribution	Standards	County Funding

### 3.2 Year Two (2019–2020) Commission

In 2019, the four subcommittees resumed where they left off, adding to the foundational elements of Year One and further strengthening the 9-1-1 system in Maryland. In Year Two, the Commission approved 25 recommendations that resulted in new legislation, including the continuation of the Commission for an additional two years ([SB47/HB44](#)), 9-1-1 Fee Audits ([SB61/HB6](#)), enhancing transparency ([SB363/HB421](#)), and additional important initiatives ([SB838/HB934](#)). The priority issues addressed in the recommendations included:

Year Two Focus		
Clarifying 9-1-1 Fund Distribution for the 24 PSAPs	Recruiting and Retaining 9-1-1 Specialists	Penalizing Telephone Misuse
Mandating Comptroller Audit	Training 9-1-1 Specialists	Enforcing Kari's Law & Monitoring RAY BAUMS Act
Changing State 9-1-1 Board Name & Responsibilities	Adopting Occupational Wellness	Reducing 9-1-1 Call Transfers
Setting Rules for 9-1-1 Reserves	Certifying 9-1-1 Specialists	Enhancing Transparency

### 3.3 Year Three (2020–2021) Commission

In 2020, COVID-19 posed a challenge, but the Commission continued to meet virtually. The first two years of collaboration helped establish a level of understanding and respect among the members of the Commission, making remote participation a non-issue as they addressed many difficult topics. Year Three allowed the subcommittees more time to understand the impact of legislation from previous years and tackle topics that had been deferred or that needed more research from years past leading to [SB838/HB934](#) addressing 9-1-1 Board membership and placement and [SB714/HB989](#) for other priority items. This resulted in recommendations covering:

Year Three Focus		
<b>Proceeding with Carrier Audits</b>	<b>Workers' Compensation Study</b>	<b>Statewide 3-1-1 system</b>
<b>9-1-1 Board Staff Job Classification &amp; Salary</b>	<b>Recruitment Best Practices</b>	<b>Domestic Violence Technology Access</b>
<b>Kari's Law Enforcement Authority</b>	<b>Support &amp; Guidance</b>	<b>GIS Technology</b>
<b>9-1-1 Outage Notification</b>	<b>Placement of 9-1-1 Board</b>	<b>Remote Call-taking</b>
<b>Training Standards</b>	<b>Composition of 9-1-1 Board</b>	<b>Swatting Amendments</b>

### 3.4 Year Four (2021–2022) Commission

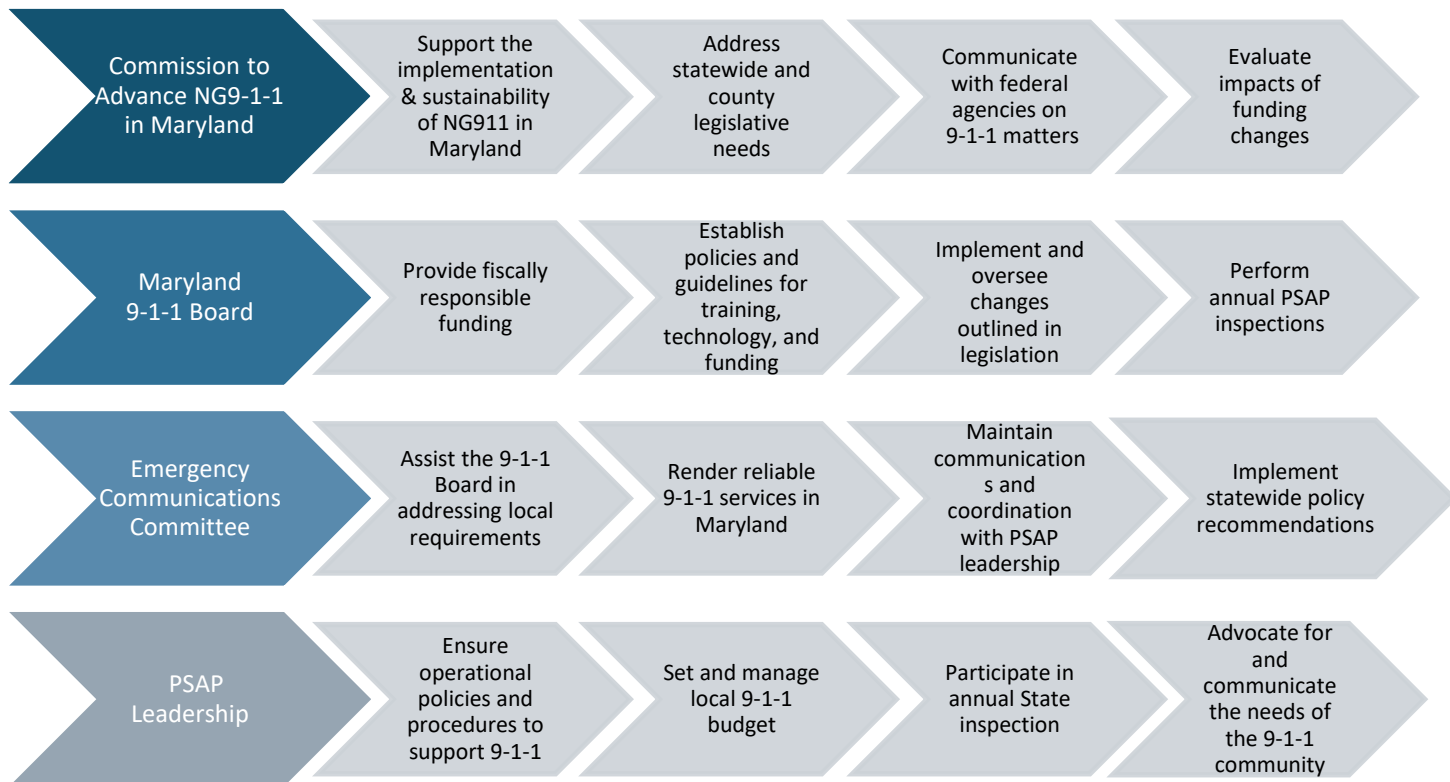
In 2021, the Commission recognized that this was its fourth and final year and was determined to address outstanding needs to help further strengthen 9-1-1 in Maryland. In addition, the Commission had a greater understanding of the impacts of the changes implemented from previous years and used this to recommend additional enhancements and improvements to keep Maryland at the forefront of change.

Year Four Focus		
<b>Expanding Workers' Compensation</b>	<b>Statewide Data Collection</b>	<b>Cybersecurity Practices</b>
<b>County Authority to Set 9-1-1 Fee</b>	<b>9-1-1 Specialist Classification and Compensation</b>	<b>Z-axis "vertical location" Preparedness</b>
<b>Enhancing Comptroller Audit Reporting</b>	<b>Recruitment Practices</b>	<b>Remote Call-taking</b>
<b>9-1-1 Board Operations</b>	<b>9-1-1 Specialist Training</b>	<b>Swatting Penalties</b>
<b>Kari's Law Education</b>	<b>Mental Health Access</b>	<b>TDoS/DDoS<sup>8</sup> Penalties</b>

### 3.5 Maryland 9-1-1 Structure and Actions

As the Commission winds down, the 9-1-1 Board, ECC, and PSAPs will continue to implement changes addressed by the Commission and provide thought leadership and actions needed to keep Maryland as a leader in NG911 technology and operations.

<sup>8</sup> Telephony Denial of Service/Distributed Denial of Service – attacks on the telephony and Internet Protocol (IP) networks preventing legitimate 9-1-1 requests for assistance from getting through to a 9-1-1 Specialist.



## 4



## Finance & Structure

### 4.1 Background

In 2018, the Finance Subcommittee focused on revising the funding model to ensure the 24 Maryland PSAPs would have the revenue to update to NG911. In 2019, the team added “structure” to the name of the subcommittee to reflect its mission. Per the Commission’s legislative mandate, in 2019, the Finance and Structure (F&S) Subcommittee reviewed the current statutory and regulatory framework for the management and financial support of Maryland’s 9-1-1 system, including audits, 9-1-1 fund distributions, and rules for 9-1-1 fee reserves. In 2020, the F&S Subcommittee focused on the impact of the funding changes to the Maryland 9-1-1 system and on the composition and placement of the Maryland 9-1-1 Board. It also considered 3-1-1 as an option to reduce call volume in the PSAPs.

### 4.2 2021 Priorities

In 2021, the F&S Subcommittee again looked at the financial impact of the 2019 funding modifications to the Maryland 9-1-1 system and the need to ensure a stable 9-1-1 funding mechanism for the future. The

subcommittee also focused on expanding Workers' Compensation benefits for 9-1-1 Specialists as well as a statewide 3-1-1 system.



#### 4.2.1 Financial Impact

Based on the recommendations from F&S and the full Commission, Carl Henn's Law was enacted in 2019 ([SB339/HB397](#)). This law implemented four funding modifications:

Table 2: Funding Changes in Carl Henn's Law

Focus Area	Legislative Change
Fee Adjustment	Adjusted the funding model and increased the State portion of the 9-1-1 fee from \$0.25 to \$0.50. For one device, resulting in an increase from \$1.00 to \$1.25 per month.
Fee Collection (Closed Loophole)	Amended the statutory language updating the fee-collection methodology for multiple devices on one invoice.
Funding Distribution	Based on funding available, the 9-1-1 Board could reimburse counties for eligible expenses such as recurring costs for the maintenance of NG911.
Fee Collection (County)	Counties were authorized to increase their county \$0.75 fee up to an additional \$0.75 if audits revealed an ongoing shortfall.

The funding changes have resulted in an average revenue increase of approximately 35% at the county level and 204% at the state level. The table below contains the 9-1-1 revenue for fiscal years 2019, 2020, and 2021.

Table 3: Maryland 9-1-1 Revenue

	FY2019	FY2020	FY2021
<b>County Fee Collections</b>	\$42,153,317.62	\$62,910,929.41	\$63,295,677
<b>State Fee Collections</b>	\$13,535,830.35	\$39,437,777.46	\$41,225,721.04*
<b>Totals</b>	\$55,689,147.97	\$102,348,706.87	\$104,521,398.41

*Information was provided by the Maryland 9-1-1 Board staff on November 12, 2021.*

*\*At the time of this report, the Comptroller had not shared the official, confirmed amount of revenue. This is an estimate of the FY2021 9-1-1 revenue.*

Increased revenue enabled the 9-1-1 Board to expand eligible expenses. As a result, the 9-1-1 Board was able to significantly increase the amount of funds granted to counties in both FY2020 and FY2021. The table below illustrates the awards made during fiscal years 2019, 2020, and 2021.

Table 4: 9-1-1 Board County Grants

Funding Type <sup>9</sup>	FY2019 Awards	FY2020 Awards	FY2021 Awards
<b>Cybersecurity</b>			\$1,380,646.67
<b>Phone Systems</b>	\$8,305,682.62	\$20,151,268.68	\$15,918,776.85
<b>9-1-1 Specialist Training</b>		\$459,993.00	\$346,042.00
<b>Mapping</b>	\$762,571.52	\$2,488,964.99	\$1,956,749.65
<b>Maintenance &amp; Recurring Charges*</b>		\$3,297,054.59	\$5,463,149.56
<b>NG911 Implementation</b>		\$745,218.76	\$15,573,027.59
<b>Other<sup>^</sup></b>	\$3,794,403.44	\$1,307,433.22	\$4,773,476.17
<b>Totals</b>	\$12,862,657.58	\$28,449,933.24	\$45,411,868.49

*Information provided by the Maryland 9-1-1 Board Staff on November 10, 2021*

\*In FY2020, only six months of Maintenance & Recurring Charges were eligible for reimbursement.

<sup>^</sup>Other includes additional allowable expenditures such as emergency dispatch protocols, chairs, console furniture, public education materials, PSAP security, grounding, and consulting services.

#### 4.2.2 County Authority

As discussed in 4.2.1, “Carl Henn’s Law” resulted in funding modifications that provided the counties with authority to increase their county fee up to an additional \$0.75 if an audit demonstrated that such an increase was warranted. The intent was to provide counties the ability to offset the amount of their 9-1-1 expenses covered by the fee and broaden the amount reimbursed. The Commission’s desire was for counties to have 85% – 100% of their 9-1-1 expenditures balanced through a combination of the county fee and the State fee.

Because of the requirement to have an audit demonstrating a shortfall prior to increasing the county fee, 2021 was the first year counties had the opportunity to take advantage of the funding modification. The F&S Subcommittee reviewed the counties that recently adjusted their fees and found that four of the six counties increased their fee by the full \$0.75 allowed (totaling \$1.50), and county revenues are not providing the 85% – 100% offset anticipated when Carl Henn’s Law was passed.

<sup>9</sup> The Board provided funding for these items, if eligible, such as training. That there is no amount listed is not indicative that those items were not funded by the Board. The exact amount funded was not included in previous reports and was included under “Other.”



Table 5: Before-and-After County 9-1-1 Fee Increase Summary

County	2019 County 9-1-1 Fee Revenue	2019 County 9-1-1 Expenses	Percent of 9-1-1 Fee Offset	2020 County 9-1-1 Fee Revenue	2020 County 9-1-1 Expenses	Percent of 9-1-1 Fee Offset	2021 Projected 9-1-1 Fee Revenue	Percent of 9-1-1 Fee Offset	Amount of Increase Enacted
Caroline County	\$170,677	\$1,132,016	15.08%	\$275,751	\$1,194,099	23.09%	\$551,502	46.19%	\$0.75
Carroll County	\$1,082,654	\$3,338,503	32.43%	\$1,766,038	\$3,391,559	52.07%	\$3,532,076	104.14%	\$0.75
Garrett County	\$182,763	\$977,581	18.70%	\$224,132	\$1,598,859	14.02%	\$448,264	28.04%	\$0.75
Worcester County	\$438,612	\$3,405,001	12.88%	\$618,996	\$3,805,732	16.26%	\$1,237,992	32.53%	\$0.75
Baltimore City	\$3,439,951	\$8,033,001	42.82%	\$3,788,564	\$8,581,885	44.15%	\$5,051,419	58.86%	\$0.25
Wicomico County	\$542,878	\$1,363,089	39.83%	\$826,127	\$1,363,089	60.61%	\$1,101,503	80.81%	\$0.25

The table above represents the county 9-1-1 expenses that are not eligible for reimbursement by the 9-1-1 Board illustrated in Section 4.2.1. As included in the table, a lower-than-expected percentage of funds offset by the 9-1-1 fee continues to be recognized. As this is the final year of the Commission, the F&S Subcommittee believes that counties should have the flexibility to fully fund the eligible expenses of their PSAP.

## RECOMMENDATION

**9-1-1 revenues have fallen short of expectations following the fee adjustments in Carl Henn’s Law (2019). Several counties have found it necessary to raise the county portion of the 9-1-1 fee to the maximum amount (\$1.50) allowed. The Commission recommends that all counties be authorized to set the local portion of the 9-1-1 fee to a level that will cover the eligible expenses of their PSAP.**

### 4.2.3 Comptroller Reporting

As the F&S Subcommittee analyzed the financial impact of the funding changes and the county revenue shortfalls, they realized the importance of verifying that all carriers in Maryland are collecting and remitting 9-1-1 fees accurately.

In the Year Two report, issued in 2019, the F&S Subcommittee originally recognized the need for oversight and verification of the 9-1-1 fee changes. Emergency legislation was pre-filed that would transfer audit responsibility to the office of the Comptroller of Maryland; however, the Comptroller reported that the COVID-19 outbreak delayed staff from initiating carrier audits. Because other State agencies were able to continue operations remotely, the Commission was disappointed by this explanation and pressed for action.

Since the Comptroller began audits at the end of 2020, the 9-1-1 Board has received no official updates on the status of the audits or any findings; however, based on verbal discussions, the larger-than-expected shortfall may be due in part to a large carrier not remitting correctly. Per legislation, the Comptroller is required to provide an annual report to the 9-1-1 Board. The F&S Subcommittee discussed the importance of timely information from the Comptroller on any inconsistencies found during the audit process. The Subcommittee considered the need to balance the burden on either the Comptroller or the 9-1-1 Board, while providing the information needed.

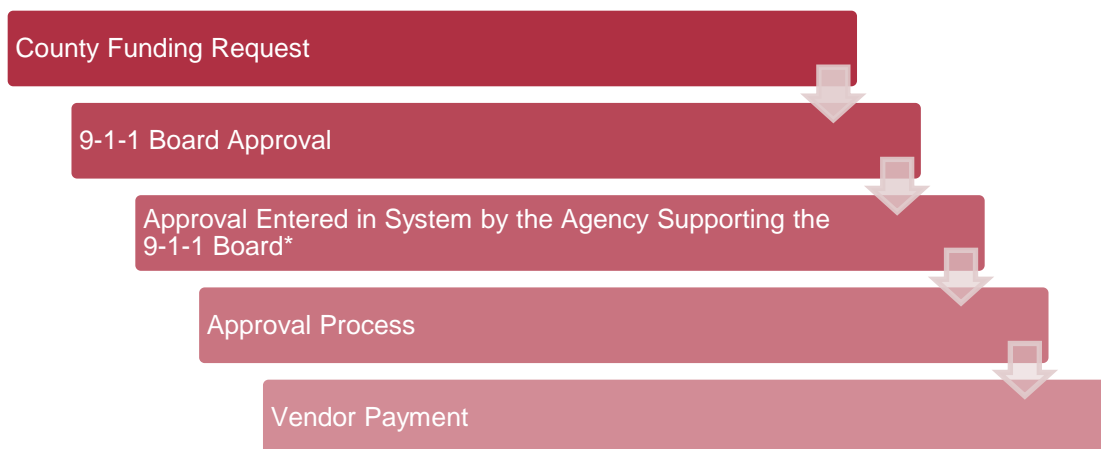
## RECOMMENDATION

**Because of the new and evolving 9-1-1 fee structure, it is necessary to ensure carrier compliance with the proper fee remittance. In addition to the annual report to the 9-1-1 Board, the Comptroller’s Office of Maryland shall provide quarterly updates on carrier fee remittance audits and notify the 9-1-1 Board immediately of any deficiencies through December 31, 2024. After that, quarterly reports will be made available to the 9-1-1 Board upon request.**

### 4.2.4 Creation of a Procurement and Payment Portal

Due to legislative changes made in 2019 expanding the items eligible for reimbursement, the 9-1-1 Board received and approved four times the number of funding requests. This benefit of the 2019 9-1-1 fee adjustment has enabled the State to authorize more funding to the counties. Unfortunately, counties are reporting delays with the Comptroller issuing vendor payments. These delays put the counties in jeopardy with their vendors, who may find it necessary to halt work or declare a breach of contract.

The Commission recognizes that the payment process requires many different steps and approvals and respects the need to follow proper due diligence to ensure accuracy; however, counties report there is little response or visibility into the payment process, leaving them at a loss when questions are asked by their vendors.



\*Prior to October 30, 2021, this was the Department of Public Safety and Correctional Services (DPSCS). The 9-1-1 Board is now an autonomous agency under the jurisdiction of the Maryland Department of Emergency Management (MDEM).

To help the counties, the 9-1-1 Board, and other agencies, the Comptroller must bring better accountability into the payment process. The Commission recommends the creation of a procurement and payment portal.

## RECOMMENDATION

**Due to the ongoing challenges with delayed payments to vendors and the lack of visibility into the payment process, the Commission recommends the creation of a procurement and payment portal with support from the Comptroller, the Department of General Services (DGS), and the Department of Information Technology (DoIT). In addition to supporting Maryland's 24 PSAPs, the portal will provide clarity for all departments and agencies using the Comptroller's Office for financial transactions.**

#### 4.2.5 Expanding Workers' Compensation Benefits for 9-1-1 Specialists

In 1980, the American Psychiatric Association (APA) added Posttraumatic Stress Disorder (PTSD) to the third edition of its *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) classification scheme<sup>10</sup>. Although controversial when first introduced, the PTSD diagnosis has bridged an important gap in psychiatric theory and practice. The key to understanding the scientific basis and clinical expression of PTSD is the concept of "trauma."

The topic of PTSD and how it affects people, originally thought to primarily impact military personnel, has expanded since its initial classification. Police Officers, Firefighters, Emergency Medical Technicians (EMTs), Paramedics, 9-1-1 Specialists, health care workers and other First Responders may report higher than average occurrences of work-related PTSD due to the scenes of devastation they experience on a frequent basis.

9-1-1 Specialists, without warning, hear incidents of violence, tragedy, and suffering in their headsets.<sup>11</sup> The effects of trauma will only worsen in an NG911 environment. The exposure to an audible or visual adverse experience or series of experiences leaves 9-1-1 Specialists vulnerable to the risk of psychological trauma.

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"9-1-1 telecommunicators are exposed to duty-related trauma that may lead to the development of PTSD, and that direct, physical exposure to trauma may not be necessary to increase risk for PTSD in this population." (Lilly et al., 2012)<sup>12</sup>

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In response to this crisis, a growing number of states are codifying new laws, statutes, and provisions that allow First Responders to receive Workers' Compensation benefits for mental health conditions caused by an individual's job duties (including PTSD). Some states already allow for full coverage of "mental-only" injuries, while others offer limited benefits in certain circumstances. Several states have yet to address the issue at all, forcing First Responders and injured workers to face the long-term physical, emotional, and financial damages of PTSD unsupported.

Through extensive research on legislation both proposed and enacted in 22 states<sup>13</sup>, the F&S Subcommittee considered specific criteria for inclusion in Maryland legislation, including:

- Conditions must meet requirements set in the latest issue of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM);
- Cannot receive compensation for their mental illness unless examined and diagnosed by a licensed psychiatrist or licensed psychologist in the jurisdiction where treatment is rendered;

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<sup>10</sup> American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders*, (3rd ed.). Washington, DC.

<sup>11</sup> <https://www.911training.net/>

<sup>12</sup> [https://www.researchgate.net/publication/223980094\\_Duty-related\\_trauma\\_exposure\\_in\\_911\\_telecommunicators\\_Considering\\_the\\_risk\\_for\\_posttraumatic\\_stress/citation/download](https://www.researchgate.net/publication/223980094_Duty-related_trauma_exposure_in_911_telecommunicators_Considering_the_risk_for_posttraumatic_stress/citation/download)

<sup>13</sup> [Comparison of Workers' Compensation Precedent for PTSD/Mental Injuries](#)

- Mental injuries are covered in specific circumstances, but not if the mental injury results from disciplinary action, layoff, demotion, or similar action taken in good faith by the employer;
- Inclusion of First Responder allowances, to include 9-1-1 Specialists; and
- Rebuttable presumption that employees' mental health effects are an occupational injury.

Based on the subcommittee's analysis of the principles, each criterion was considered and coded for inclusion, further evaluation, or removal from the recommendation. An overview of the comparison can be found in [Appendix C](#).

#### 4.2.6 Research by the University of Maryland's Carey School of Law

In 2020, the Commission addressed the impact of the stresses encountered by 9-1-1 Specialists. A multitude of studies, surveys, and reports demonstrate that First Responders (law enforcement, EMS, fire, and 9-1-1) experience suicidal thoughts at a rate more than double the general population.<sup>14</sup> Alarming, nearly a quarter suffer from work-related depression or would meet the cut-off for probable PTSD.<sup>15</sup> This depression is the result of repeated exposure to traumatic events.<sup>16</sup> The Commission recommended including psychological resilience training, as encouraged by Jim Marshall, MA, industry expert and founder of the 9-1-1 Wellness Foundation<sup>17</sup>, and completion of a study addressing the need for awarding Workers' Compensation benefits to 9-1-1 Specialists.

Kathleen Hoke, J.D., a Law School Professor and Director of the Network for Public Health Law, Eastern Region and the Center for Tobacco Regulation at the University of Maryland Carey School of Law, and Brooke Kasoff, J.D. completed this research in 2021 for the F&S Subcommittee.

Professor Hoke teaches the Public Health Law Clinic through which she engages law students in the efforts of the Network and the Center. Under the supervision of Professor Hoke, Brooke Kasoff, J.D. investigated Maryland law not providing appropriate Workers' Compensation coverage for 9-1-1 Specialists who suffer from PTSD and other mental injuries because of doing their incredibly important job.

Hoke and Kasoff provided an overview of their report, [\*Narrow Workers' Compensation for 9-1-1 Specialists: The Role of the 9-1-1 Specialist\*](#), to the F&S Subcommittee to aid discussions related to Workers' Compensation. This report can be found in [Appendix D](#).

The F&S Subcommittee recommends that Maryland legislation be updated to assure the First, First Responders at the heart of the 9-1-1 system get the services they deserve. It is important that 9-1-1 Specialists are recognized for the essential service they provide and barriers to care are addressed and covered for proper protection.

<sup>14</sup> <http://fcop5000.org/wp-content/uploads/2019/08/2019-Fairfax-County-Police-Pilot-Survey-Summary.pdf>

<sup>15</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4792921/>

<sup>16</sup> <http://fcop5000.org/wp-content/uploads/2019/08/2019-Fairfax-County-Police-Pilot-Survey-Summary.pdf>

<sup>17</sup> <https://www.911training.net>

## RECOMMENDATION

**A 9-1-1 Specialist's daily job is demanding, harrowing, and essential to public health and safety. Maryland's 9-1-1 Specialists are the First, First Responders in an emergency. They regularly receive some of the most challenging and traumatizing appeals for help. Their courageous public service is essential to saving lives. Since 9-1-1 Specialists are routinely exposed to events causing PTSD during the course of their employment, and because of the severe nature and cumulative effect of PTSD, it is the duty of each county to provide coverage to 9-1-1 Specialists for their work-related injury. PTSD and other mental health conditions suffered by a 9-1-1 Specialist are presumed to be compensable injuries or occupational diseases when evidence indicates causation by an event or events arising out of and in the course of the 9-1-1 Specialist's employment.**

**Mental health conditions such as PTSD shall meet the criteria specified by the most recent edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*. The 9-1-1 Specialist must be examined and diagnosed with the mental health condition(s) by a psychologist or psychiatrist licensed to practice in the jurisdiction where treatment is rendered. No compensation shall be awarded when PTSD is a result of a personnel-related action including, but not limited to, disciplinary action, work evaluation, job transfer, layoff, involuntary demotion, termination, retirement, or similar action taken in good faith by the employer.**

**The Commission recommends any Workers' Compensation policy that provides coverage for a 9-1-1 Specialist to include coverage for PTSD and recognizes that the number of PTSD compensable claims may affect the Maryland Workers' Compensation system causing actual claim frequency to be slightly different than otherwise expected.**

### 4.2.7 Ongoing 9-1-1 Board Operations

Effective June 1, 2021, the Commission expanded the number of members on the 9-1-1 Board from 17 to 21 voting members as well as three nonvoting members. This change to the structure of the 9-1-1 Board was recommended to support NG911 and the expanded responsibilities of the 9-1-1 Board. The members added to the 9-1-1 Board allow for broader representation and reflect the changes presented by NG911 systems being planned or implemented in Maryland.

The F&S Subcommittee was concerned that there are seven vacancies (four pending appointment by the Governor) on the 9-1-1 Board. Once filled, half of the 9-1-1 Board will be new. The F&S Subcommittee and the Oversight and Accountability (O&A) Subcommittee discussed how best to ensure the important work of the 9-1-1 Board can continue. The Commission has three recommendations to strengthen the operations of the 9-1-1 Board.

#### 4.2.7.1 9-1-1 Board Member Handbook

The F&S Subcommittee researched methods used by other boards to educate members as to what is expected; the importance of the tasks done by the respective board; and supporting information regarding responsibilities. The consensus of the subcommittee was that the new board members would need to be onboarded quickly and that it was important for the information provided to be documented for future board member use.

#### RECOMMENDATION

**Because of the need to ensure that the important role of the 9-1-1 Board is documented and to help new members understand their obligations, the Commission strongly recommends that the 9-1-1 Board create a 9-1-1 Board Member Handbook with an emphasis on:**

- **Roles and responsibilities;**
- **9-1-1 Trust Fund project funding request process;**
- **Allowable funding guidelines;**
- **Key partners; and**
- **Leadership in improving emergency communications in 9-1-1.**

#### 4.2.7.2 9-1-1 Board Member Vacancies

The F&S Subcommittee discussed a list of potential candidates to fill the positions but wanted to ensure that in the future, vacancies on the 9-1-1 Board will be addressed in a timely manner. After joint discussions with the Oversight and Accountability (O&A) Subcommittee, it is recommended that the 9-1-1 Board work with MDEM to establish a method for recruiting and recommending new 9-1-1 Board members. Once identified, Board member appointments are run through the Governor's Appointments Secretary, who vets the nominee(s), the selected member is then appointed by the Governor and confirmed by the Maryland Senate. MDEM should also consider including 9-1-1 Board member job descriptions and a means for notifying potential candidates of vacancies.

#### RECOMMENDATION

**To support the important work of the newly expanded 9-1-1 Board and the increased funding, the Commission recommends the 9-1-1 Board, in coordination with MDEM, establish a protocol for quickly recommending candidates who have the appropriate expertise and are deeply committed to improving 9-1-1 emergency services in Maryland for vacant board positions.**

#### 4.2.7.3 9-1-1 Board Succession Plan

The F&S and O&A Subcommittees discussed various methods of succession planning in other Maryland boards. The subcommittees reviewed the current 9-1-1 Board practice of using a Vice Chair and the potential for that

position to fill in for the Chair if needed. The subcommittees strongly recommend this practice be formalized in legislation and ensure that the individual is selected from among the voting members of the 9-1-1 Board.

## RECOMMENDATION

**The Commission recommends that the position of Vice Chair be formalized in legislation. The 9-1-1 Board will nominate and select the individual from among its voting members. The appointee shall assume the roles and responsibilities in the Chair's absence.**

### 4.2.8 3-1-1 Implementation

3-1-1 is offered in six counties in Maryland and in various areas across the Nation. This three-digit number handles inquiries about non-emergency public service needs, such as questions about abandoned vehicles, noise complaints, graffiti, trash pickup, etc. Many times, people call 9-1-1 to ask these questions, taking valuable time away from responding to emergencies.

In 2020, the Commission discussed the benefits of implementing 3-1-1 and recommended the creation of a workgroup to outline the foundation of a statewide 3-1-1 system. [SB631](#) passed the Senate unanimously; however, the House determined that consensus could be reached without law. In 2021, Senator Cheryl Kagan; Russell Strickland, acting Secretary of MDEM; Quinton Askew, Chief Executive Officer (CEO) of 2-1-1 Maryland; and stakeholders from counties with and without 3-1-1 met several times to plan the implementation of 3-1-1.

While 3-1-1 is an initiative separate from 9-1-1, the beneficial impact it would have requires a strong partnership with the public safety community and the PSAPs in the state. The 3-1-1 workgroup shared the implementation strategies, included in [Appendix E](#), with the Commission with the understanding that developing legislation for a statewide 3-1-1 system will take time and involve:

- Ongoing guidance and funding, separate from 9-1-1, through MDEM;
- Identifying funding sources, including Federal grants;
- Creating a 3-1-1 Board;
- Building the technology infrastructure; and
- Developing policies and procedures for ongoing operations.

The Commission voted in favor of proceeding with legislation outlining the development and implementation of a statewide 3-1-1 system in Maryland.

## Recommendation

**The Commission recommends further action by the 3-1-1 workgroup to develop and implement a statewide 3-1-1 system in Maryland.**



## 5



## Oversight & Accountability

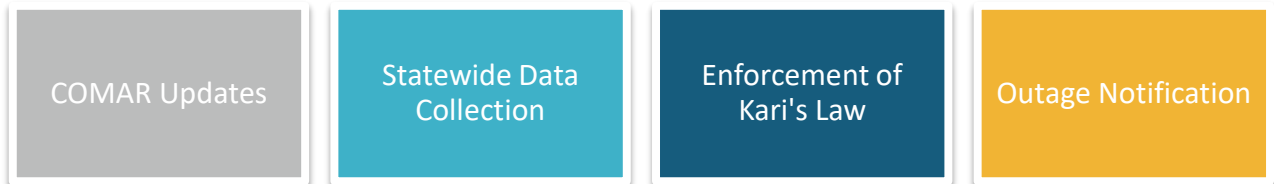
### 5.1 Background

Governance, policy, and proper protections at the state, local, and provider levels were the primary topics addressed by the Oversight and Accountability (O&A) Subcommittee in 2018 and 2019. In 2019, the subcommittee tackled the need for greater transparency and highlighted important elements needed from the 9-1-1 Board to support the effective implementation of NG911. In 2020, the O&A subcommittee focused on topics that would support the successful operation of a 9-1-1 system. The subcommittee had three priorities for the advancement of NG911:

- 9-1-1 Board positions (job classifications and salary)
- Enforcement of Kari's Law
- Outage notification

### 5.2 2021 Priorities

The need to ensure continuity of operations for the 9-1-1 Board requires well-defined and documented processes. The O&A Subcommittee prioritized topics to ensure, in this fourth and final year of the Commission, that the policies and processes are in place to support the 9-1-1 Board and its operations.



#### 5.2.1 NG911 Updates to COMAR

The [Code of Maryland Regulations \(COMAR\)](#) is the official compilation of all administrative regulations issued by agencies of the state of Maryland. While the Maryland General Assembly enacts laws, it is administrative agencies that adopt, amend, and repeal regulations under the authority granted to them by statutes.

COMAR is outdated; it still describes how 9-1-1 is to be managed and how funds are distributed in a legacy environment. The transition to NG911 creates the need to update COMAR to help close the requirements gap between previous 9-1-1 services and the NG911 technology and processes required with NG911. In addition, it includes terms, processes, and references that are no longer valid and may not align with the 9-1-1 Board's forward momentum and strategies. This is especially critical with the 9-1-1 Board's move to a new department.

The sections of COMAR related to 9-1-1 were last publicly revised in 2008; however, the document is reviewed annually. The O&A Subcommittee discussed and agreed on the need for an evaluation of COMAR as it relates

to accommodating NG911 terminology, processes, operational changes, updates to the 9-1-1 Board structure, and governance.

## RECOMMENDATION

**COMAR contains outdated language related to the parent organization of the 9-1-1 Board, legacy 9-1-1 systems, and operations, and requires revisions to be applicable for NG911. The Commission recommends that the 9-1-1 Board make necessary updates with input from interested parties.**

### 5.2.2 Collecting 9-1-1 Call Data

Developments in 9-1-1 technology over the past 50 years brought added features and functionality with Enhanced 9-1-1; broader mobility with Wireless 9-1-1; increased access with text-to-9-1-1; and more accurate location services to most of the Nation. With all these enhancements, the voice-centric 9-1-1 call remained the backbone of the emergency service request. Now, however, with Maryland 9-1-1 agencies moving toward NG911 to take advantage of innovative communication tools, 9-1-1 Specialists will need to access critical information and details in the moments that matter most.

These new technology-driven PSAPs will use location data from cell phones, media such as videos and text, and software integrations with vehicles to assist with the awareness of and response to incidents in a more innovative and rapid way.

The purpose of consistent, real-time data is to foster informed decisions that improve emergency response. Unfortunately, today's standard 9-1-1 management information systems (MIS) often fall short of this desired outcome -- especially when data is not collected in real-time. Most current MIS reports provide a limited, one-dimensional view of data and only deliver surface-level information about past events, and only by PSAP jurisdiction rather than statewide.

Every local government official managing a PSAP in Maryland knows that the goal of effective emergency response is to quickly and accurately respond to 9-1-1 requests for service and dispatch the correct services. Public safety agencies now understand that they should embrace and adopt innovative data collection systems designed with real-time data available at the core. Accessing data in real-time can expand situational awareness, improve response times, and enhance overall operational performance. It helps 9-1-1 directors, supervisors, 9-1-1 Specialists, and First Responders do their jobs more effectively. It can also assist with long-range planning by observing trends and patterns for all levels of the emergency response continuum.

The O&A Subcommittee discussed the benefits and need for improved data collection and information availability. Understanding the complexity of what data to collect, how to collect the data, security factors, costs, and how to harness large stores of data into usable information was acknowledged by the subcommittee.

While it is readily understood that a statewide data collection mechanism and repository for all 24 PSAPs is likely the most cost-effective approach, the specifics of what data is needed should be determined through a 9-1-1 Board facilitated effort with the PSAPs.

## RECOMMENDATION

**The Commission recommends that the 9-1-1 Board evaluate what information should be collected at a state level to monitor the operational health and security of the NG911 system and determine the best method for sharing and distributing the collected information to enhance situational awareness.**

### 5.2.3 Enforcement of Kari's Law

Maryland proactively adopted legislation, [SB576/HB1080](#), in 2015 to implement Kari's Law. Maryland was the first state in the nation to adopt this law. Nationally, Kari's Law Act of 2017, an amendment to the Communications Act of 1934, was signed into law on February 16, 2018—the 50th anniversary of the first 9-1-1 call in the United States. Under Kari's Law, multi-line telephone systems (MLTS) must have a configuration that permits users to directly initiate a call to 9-1-1 without dialing any additional digit, code, prefix, or post-fix.

In 2020, the Commission recognized the need to designate an enforcement authority for ensuring Kari's Law compliance. Some counties lacked the resources for enforcement, so through discussions with the State Fire Marshal, it agreed they would have enforcement authority in those areas needing support. Unfortunately, in 2021, counties that attempted to engage the Office of the State Fire Marshal were unsuccessful in securing assistance. This lack of cooperation was a concern for the Commission, and Senator Kagan sent a letter seeking an explanation. The Fire Marshal responded that he had included this as part of their existing inspections; however, he would not support inspections specifically to address Kari's Law compliance. See [Appendix F](#) for a copy of these letters. **As this report was going to print, we learned that the Fire Marshal may be conducting some inspections. We are hopeful that there will be continued progress.**

[SB714/HB989](#) addressed education and enforcement of Kari's Law in Maryland by advising counties and localities to:

- Check for adherence when granting usage and occupancy permits and as part of other inspection processes;
- Include certification in future State grant applications;
- Develop Kari's Law requirements public education initiatives; and
- Support the amendment of Maryland Law to contain penalties and fines for entities out of compliance with Kari's Law, with those collections being remitted to the inspecting agency.

## RECOMMENDATION

**Because of concern about whether the Office of the State Fire Marshal complies with Kari’s Law, it is recommended that the Commission send a letter to the Office of the State Fire Marshal asking how Kari’s Law is being enforced in each of the 24 jurisdictions.**

**Awareness and enforcement of Kari’s Law will ensure that Maryland residents and visitors can dial 9-1-1 without any additional digits to obtain an outside line from an MLTS (e.g., hotel, business, etc.). The Commission recommends that the 9-1-1 Board, with the support of key stakeholders, develop an educational campaign that can be distributed via Maryland associations.**

### 5.2.4 9-1-1 Outage Notification Filing

In 2020, the O&A Subcommittee reviewed existing Maryland policies and Federal Communications Commission (FCC) Part 4 Rules and Maryland Public Service Commission (PSC) rules. The O&A Subcommittee determined that PSAPs require timely and consistent notification of outages so they can react, implement alternative communications methods, and properly notify the public. As a result, [SB714/](#)[HB989](#) was updated to address the needs of Maryland PSAPs when outages impact 9-1-1 service, including:

- Notifying PSAPs of 9-1-1 service outages lasting more than 30 minutes and affecting more than 600,000 user minutes (calculated in accordance with FCC regulations);
- Reporting to the Maryland Joint Operations Center (MJOC) of any 9-1-1 service outage; and
- Issuing a report to the 9-1-1 Board after a 9-1-1 outage lasting longer than 30 minutes.

#### 5.2.4.1 FCC Filing

In 2021, the O&A Subcommittee reviewed the 2020 efforts and the FCC’s Third Notice of Proposed Rulemaking (NPRM). In that NPRM, the Federal Communications Commission (FCC) sought comment on whether modifications to the associated reporting requirements would help public safety while reducing impacts on regulated entities. In the NPRM, the FCC also proposed enhancing its regulatory framework for 9-1-1 outage notifications; improving outage messaging; requiring service providers to inform the public; and ensuring the accuracy of PSAP contact information.

Reliability of the 9-1-1 network is essential to all those involved in providing, overseeing, supporting, or needing 9-1-1. When an outage originating from any source results in the public being unable to contact 9-1-1, the 24 PSAPs in Maryland must be informed quickly and consistently. The Commission submitted testimony on enhancing public safety by ensuring timely notification of disruptions to 9-1-1. The proposed FCC filing was sent to the Commission for a vote on July 9, 2021, and submitted on July 27, 2021.

Because of the concern for all counties regardless of population to receive the same communication, the Commission spent significant time discussing possible legislative measures requiring a change to the notification rules for carriers. It was decided that the changes made in 2021 legislation, along with the processes set in place by the PSAPs, ensure that all receive the same communication. However, because of a desire for improved messaging from the carriers, it was decided that the ECC would collaborate with the PSAPs and carriers to further improve communications.

## RECOMMENDATIONS

**9-1-1 outages have a major impact on PSAPs and individuals seeking emergency assistance. On behalf of the Commission, Mission Critical Partners, LLC (MCP) filed comments with the FCC in response to the Third Notice of Proposed Rulemaking regarding 9-1-1 outage notifications.<sup>18</sup>**

### 5.2.5 Real-Time Text Enforcement Letter to FCC

In an emergency, EVERY SECOND COUNTS! Real-Time Text (RTT) provides PSAPs with text information as it is being typed; improves accessibility for those with disabilities; and conveys a conversational tone with the 9-1-1 caller. RTT is a reliable and interoperable universal text solution for people who are deaf, hard-of-hearing, deaf-blind, or speech-challenged. With RTT, text is transmitted instantly while being typed, generally character by character. In other words, RTT is a modern replacement for teletypewriter (TTY) communications and is backward-compatible with TTY technology.

In 2016, the FCC amended its rules to establish basic guidelines for RTT; allow wireless carriers and manufacturers to support RTT; and set a timeline for the transition from TTY to RTT.

The O&A Subcommittee discussed the implementation status of RTT, along with the number of waivers granted by the FCC to providers. The subcommittee stressed the need for RTT so that the deaf, hard-of-hearing, and speech-impaired communities are provided equal access to 9-1-1 service in the communication method of their choosing. In support of this important need, the Commission sent a letter to the FCC on September 13, 2021. See [Appendix H](#) for a copy of the letter.

## RECOMMENDATIONS

**To ensure equal access to 9-1-1 services for Marylanders with disabilities, it is important that carriers start providing RTT technology. The Commission sent a letter to the FCC requesting they halt granting waivers and begin enforcing deadlines outlined in Title 47, Chapter I, Subchapter B, Part 67 of the Electronic Code of Federal Regulations.**

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<sup>18</sup> See [Appendix G](#) for the full filing



## 6.1 Background

Each day in Maryland, more than 1,300 9-1-1 Specialists answer emergency requests for service. The Staffing and Training (S&T) Subcommittee's focus since 2018 has been to recognize the importance of these courageous 9-1-1 Specialists; address training required to deliver the highest standard of service; and enable occupational support systems focused on helping cope with the ongoing stress of the position. 9-1-1 Specialists are the lifeblood of the PSAP and an integral part of the public safety system. They are the First, First Responders, and the S&T Subcommittee has worked persistently to identify and ensure systems and recruiting policies are in place to protect our First, First Responders.

## 6.2 2021 Priorities

The nation is facing a staffing crisis, and it is difficult to recruit and retain 9-1-1 Specialists. Unfortunately, Maryland PSAPs are no different. In 2021, the S&T Subcommittee built upon the work completed in 2019 and 2020 to ensure the appropriate level of support and recognition for Maryland's 9-1-1 Specialists.



### 6.2.1 Reclassifying 9-1-1 Specialists

Year One Commission work led to the enactment of Maryland Public Safety Code § 1-302.1. As a result of this law, enacted on July 1, 2019, 9-1-1 Specialists are considered part of our public safety infrastructure. Furthermore, this legislative act encouraged jurisdictions to “appropriately classify 9-1-1 specialists in recognition of the training, knowledge, and skills that 9-1-1 specialists possess and demonstrate in answering and handling requests for emergency assistance ...”<sup>19</sup> While this was a good start, action is still needed to classify these vital individuals as First, First Responders.

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***According to the National 9-1-1 Program, “This reclassification would recognize the work 9-1-1 professionals do every day to protect and save the lives of both First Responders and the public.”***

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Over the years, as 9-1-1 call volumes have increased, so too has the complexity of processing a 9-1-1 request for assistance. Gone are the days of using simple equipment such as a “plain old telephone service” (POTS) line (wireline) to make and receive a 9-1-1 call; now, 9-1-1 Specialists must know how to operate complex tools and technologies. According to the National 911 Program’s *Guidelines for Developing a Public Safety*

<sup>19</sup> <https://mgaleg.maryland.gov/mgaweb/site/Laws/StatuteText?article=gps&section=1-302.1&enactments=false>

*Telecommunicator Job Description*, a 9-1-1 Specialist must have a vast array of knowledge, skills, and abilities and undergo comprehensive training. A list of requirements and responsibilities is included in Figure 2 below.

Figure 2: 9-1-1 Specialist Job Requirements and Responsibilities<sup>20</sup>

Knowledge	Skills	Abilities
<ul style="list-style-type: none"> <li>•Geography</li> <li>•Phone/Computer basics</li> <li>•Chain of command</li> <li>•Liability</li> <li>•Terminology</li> <li>•Roles and responsibilities</li> <li>•Agency</li> <li>•Performance standards</li> <li>•Laws, statutes, and codes</li> <li>•Incident management</li> <li>•Governmental standards</li> <li>•Technology</li> <li>•Risk assessment</li> <li>•Social media</li> <li>•Automated data</li> <li>•Video messaging</li> <li>•Incident command</li> </ul>	<ul style="list-style-type: none"> <li>•Keyboarding/Typing</li> <li>•Multitasking</li> <li>•Decision-making</li> <li>•Critical thinking</li> <li>•Verbal and written communications skills</li> <li>•Ability to work on a team</li> <li>•Active listening/hearing</li> <li>•Customer service</li> <li>•Computer</li> <li>•Telephony</li> <li>•Call control</li> <li>•Conflict resolution</li> <li>•Problem-solving</li> <li>•Analytical</li> <li>•Troubleshooting</li> <li>•Text messaging</li> <li>•Data Analytics</li> <li>•Language translations</li> <li>•Social media</li> </ul>	<ul style="list-style-type: none"> <li>•Quick decision-making</li> <li>•Empathy</li> <li>•Respect</li> <li>•Patience</li> <li>•Maturity</li> <li>•Even-tempered</li> <li>•Integrity</li> <li>•Ethical</li> <li>•Life-long learner</li> <li>•Dependable</li> <li>•Flexible</li> <li>•Efficient</li> <li>•Tolerant</li> <li>•Analytical</li> <li>•Detail oriented</li> <li>•Resilient</li> </ul>

9-1-1 Specialists must keep track of multiple activities, often protecting people in need of assistance. As the National 911 Program report emphasizes (emphasis added):

*The role of the PST is an intersection of critical intervention of lifesaving instructions for the caller and a conduit of essential communications for the field responder to improve outcomes. If a patient is not breathing and must wait two to three minutes, or longer, for an ambulance to arrive before initial treatment begins, for example, the outcome can be fatal. **The initial intervention by a PST to triage and provide life-safety instructions over the phone is clearly necessary to preserve lives.** Rendering direct care to callers has necessitated additional initial and continued training and certification for PSTs.*<sup>21</sup>

<sup>20</sup> National 911 Program *Guidelines for Developing a Public Safety Telecommunicator Job Description*. February 2020 [https://www.911.gov/pdf/Guidelines\\_for\\_Developing\\_a\\_Public\\_Safety\\_Telecommunicator\\_Job\\_Description.pdf](https://www.911.gov/pdf/Guidelines_for_Developing_a_Public_Safety_Telecommunicator_Job_Description.pdf)

<sup>21</sup> *ibid*

More and more states are recognizing the importance of this critical link in emergency response. **Research shows that ten states have classified their 9-1-1 Specialists as First Responders.**<sup>22</sup>

Table 6: States that Recognize 9-1-1 Specialists as First Responders

State	Bill	Year
California	AB1945	2020
Georgia	HR885	2020
Idaho	SB1028	2019
Iowa	SF2373	2020
Indiana	HB1198	2020
Kansas	SB40	2021
New York	SBS7121	2021
Oregon	SB425	2019
Texas	HB1090	2019
Washington	HB2758	2020

According to the National Emergency Number Association (NENA), many PSAPs around the country faced challenges during the COVID-19 pandemic—in addition to managing a stressful job; they faced staffing shortages and had to keep the workforce healthy so as not to face further shortages or possible shutdown.<sup>23</sup> Maryland’s PSAPs implemented new policies to keep their employees safe and ensure that all emergency requests for assistance were answered. The outdated classification of these First, First Responders left many during the pandemic with inequitable access to personal protective equipment (PPE), COVID vaccinations, and the ability to qualify for hazard pay equitable to other First Responders. A national NENA PSAP survey showed that 56.5% of respondents had trouble obtaining this essential equipment. Many reported that they were denied testing and supplies because they were not considered “First Responders.”<sup>24</sup> Yet, these individuals were still required to report to work no matter the circumstances.

In her report, *Indirect Exposure to the Trauma of Others: The Experiences of 9-1-1 Telecommunicators*, Roberta Troxell, University of Illinois Chicago, reported that 9-1-1 Specialists are “in fact, the **first link** in the chain of emergency response.”<sup>25</sup> **The Department of Homeland Security (DHS) includes 9-1-1 professionals on its list of essential personnel.** Both the Association of Public-Safety Communications Officials (APCO) International and NENA advocate that those who answer and dispatch 9-1-1 requests for assistance be recognized for the critical functions they perform. Not doing so only compounds the staffing crisis facing Maryland’s 24 PSAPs.

Turnover rates of up to 15% – 20% have left PSAPs in a constant state of hiring and training new employees, while tenured employees are having to work excessive amounts of overtime. This trend cannot continue, and accurate classification of 9-1-1 Specialists will help. Reclassification does not cost anything other than assuring

<sup>22</sup> [https://www.nena.org/page/reclassification\\_map](https://www.nena.org/page/reclassification_map)

<sup>23</sup> NENA Surveys Show How PSAPS Are Holding Up During the Pandemic. <https://www.govtech.com/em/safety/nena-surveys-show-how-psaps-are-holding-up-during-the-pandemic.html>

<sup>24</sup> *How 9-1-1 Is Changing in a COVID-19 World: 9-1-1 & COVID-19 Report Series*. May 8, 2020  
[https://cdn.ymaws.com/www.nena.org/resource/resmgr/covid/COVID-19\\_Report\\_2.pdf](https://cdn.ymaws.com/www.nena.org/resource/resmgr/covid/COVID-19_Report_2.pdf)

<sup>25</sup> Troxell, Roberta M. *Indirect Exposure to the Trauma of Others: The Experiences of 9-1-1 Telecommunicators*  
<https://www.agence911.org/wp-content/uploads/2019/09/Th%C3%A8se-de-doctorat-Illinois.pdf>



9-1-1 Specialists receive the recognition and appreciation they deserve. Therefore, the S&T Subcommittee recommends that Maryland law be updated to recognize the vital life-saving work that 9-1-1 Specialists perform.

## RECOMMENDATION

**9-1-1 Specialists are the first link in the chain of safety and survival—answering, triaging, and dispatching emergency requests for assistance and providing vital life-safety and life-saving instructions to those who live, work, and travel in Maryland. These essential employees are the First, First Responders and undergo comprehensive training; are certified in Emergency Medical Dispatch (EMD), Emergency Fire Dispatch (EFD), and Emergency Police Dispatch (EPD); and are the critical link between those in need and public safety responders (e.g., law enforcement, fire-rescue, and EMS personnel). 9-1-1 Specialists remain in constant contact with the emergency scene incident commander and other emergency responders throughout the incident, ensuring effective on-scene response, coordination, and timely resolution. Given the vital importance of our 9-1-1 Specialists, the Maryland General Assembly should reclassify 9-1-1 Specialists as public safety “First Responders.”**

### 6.2.2 9-1-1 Specialist Compensation

As previously indicated, 9-1-1 Specialists are the First, First Responders and perform critical, life-saving support while on shift. They undergo comprehensive training to develop the knowledge and skills needed to operate sophisticated equipment to receive and process 9-1-1 requests for assistance. Additionally, every Maryland 9-1-1 Specialist must complete ongoing training and maintain certification in scripted protocols that help facilitate life-saving and life-safety instructions:

- Emergency Medical Dispatch (EMD) – a system that requires specialized training and certification for a 9-1-1 Specialist to be able to provide life-saving scripted medical instructions and coordinate the appropriate dispatch of EMS resources.
- Emergency Police Dispatch (EPD) – a system that requires specialized training and certification for a 9-1-1 Specialist to assist callers and victims in gathering essential information to assist law enforcement in responding to incidents.
- Emergency Fire Dispatch (EFD) – a system that requires specialized training and certification for a 9-1-1 Specialist to help victims in distress; provide life-safety instructions; and coordinate the response of fire resources.

Maryland 9-1-1- Specialists no longer answer only “traditional” 9-1-1 calls (i.e., voice only); they are now responsible for text-to-9-1-1 and soon, other NG911 methods of receiving requests for assistance (i.e., multimedia, images, etc.).

Industry advocate Kevin Haight (Idaho State Police Captain) promotes that 9-1-1 Specialists be “appropriately recognized, compensated, and benefited commensurately with the life-safety services it performs ...”<sup>26</sup> Failure to do so results in a breakdown in the professionalism of the occupation. The job is becoming increasingly technical, but the pay is not proportionate with the skills required.

The 2021 MACo *Report of County Employee Salaries, Health Benefits & Pensions* reports that 9-1-1 Specialists’ annual salaries at an entry-level range from the low end of \$27,394 to a high of \$48,039.<sup>27</sup> These comparisons include base pay and not total compensation nor incentives, stipends, and differentials, which have an impact on net income. The average actual starting pay for a 9-1-1 Specialist is \$38,785, with some starting employees as low as \$31,000 to \$32,000 (See [Appendix I](#) for additional details). This is equivalent to approximately \$14.90 to \$15.38 per hour—only slightly higher than the average starting salary for hourly employees in less stressful retail positions for such companies as Amazon and Target. In addition, 9-1-1 Specialists only have an average earning potential after two years under the headset of \$42,871. **These salary ranges leave PSAPs unable to compete with the private-sector competition.** In turn, this leads to PSAPs struggling to recruit qualified candidates or retain experienced employees.

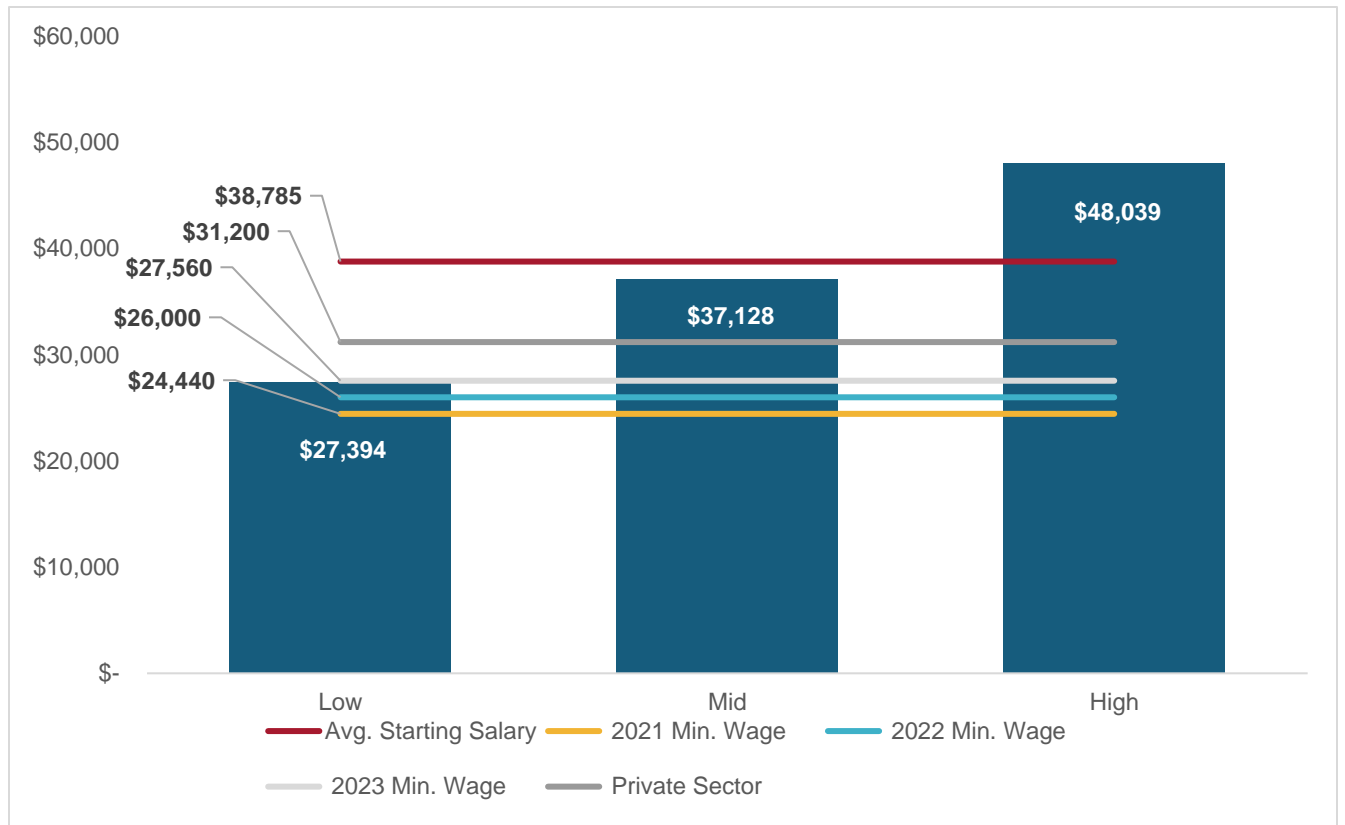
While the Commission recognizes the fact that there are variables in each county, as Maryland continues its progressive efforts to increase the minimum wage, 9-1-1 Specialist life-saving work is deserving of compensation well above the minimum wage.

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<sup>26</sup> Haight, Kevin Captain. *9-1-1: What’s our Emergency? Diagnosing a Struggling Occupation Serving a Neglected System* (March 2020). [https://calhoun.nps.edu/bitstream/handle/10945/64917/20Mar\\_Haight\\_Kevin.pdf?sequence=1&isAllowed=y](https://calhoun.nps.edu/bitstream/handle/10945/64917/20Mar_Haight_Kevin.pdf?sequence=1&isAllowed=y)

<sup>27</sup> Salary Survey of Maryland County Government, Fiscal Year 2021. <https://www.mdcounties.org/144/MACos-County-Salary-Survey>

Figure 3: 9-1-1 Specialist Entry Level Salary Ranges<sup>28</sup>



Source: The 2021 MACo *Report of County Employee Salaries, Health Benefits & Pensions*; <http://mdcounties.org/DocumentCenter/View/4384/Final-full-survey>

The S&T Subcommittee recommends that 9-1-1 Specialists' salaries align with the critical public safety function they perform.

## RECOMMENDATION

**Inadequate compensation is one of the leading causes of a jurisdiction's inability to recruit and retain qualified 9-1-1 Specialists. In keeping with the legislation (Maryland Public Safety Code An. 1-302.1), the Commission recommends that local jurisdictions compensate 9-1-1 Specialists in a manner that is commensurate with their responsibilities, training, knowledge, and skills. The minimum wage is not considered to adequately satisfy these criteria, resulting in underqualified applicants and turnover.**

### 6.2.3 Diversity in the Profession

#### 6.2.3.1 Implicit Bias Training

<sup>28</sup> Salary Survey of Maryland County Government, Fiscal Year 2021. <https://www.mdcounties.org/144/MACos-County-Salary-Survey>

Maryland's 9-1-1 Specialists are required to undergo comprehensive training and certification prior to independently processing a 9-1-1 request for assistance. Training, as well as continuing education, includes a wide variety of topics ranging from technical expectations (i.e., call-handling techniques) to professionalism, diversity, and emergency management. The training is designed to prepare 9-1-1 Specialists for the broad expectations of the profession.

Pursuant to [SB714/ HB989](#), the Commission is required to develop a plan to provide Implicit Bias Training to 9-1-1 Specialists. Prejudices can lead to damaging stereotypical behaviors.<sup>29</sup> To address this, the S&T Subcommittee recommends that the 9-1-1 Board adopt annual and onboarding training for 9-1-1 Specialists.

## RECOMMENDATION

**Per SB714 (2021), the Commission recommends that the 9-1-1 Board establish a plan to provide Implicit Bias Training to new and experienced 9-1-1 Specialists. This will help mitigate the potential impacts of discriminatory thinking and behavior. The 9-1-1 Board shall develop standards and criteria and approve initial and ongoing training curriculum. PSAPs shall be audited at each annual inspection. If a PSAP does not demonstrate compliance, the 9-1-1 Board shall collaborate with the PSAP to develop a remediation plan, including an implementation timeline. The 9-1-1 Board may impose sanctions for failure to comply.**

**In keeping with the legislative intent of SB714, 9-1-1 Specialist demographic information, including race and gender (listed by county and statewide), will be included in the 9-1-1 Board's annual report. The current summary of this information is included in Appendix J.**

### 6.2.3.2 Diversity in Recruitment

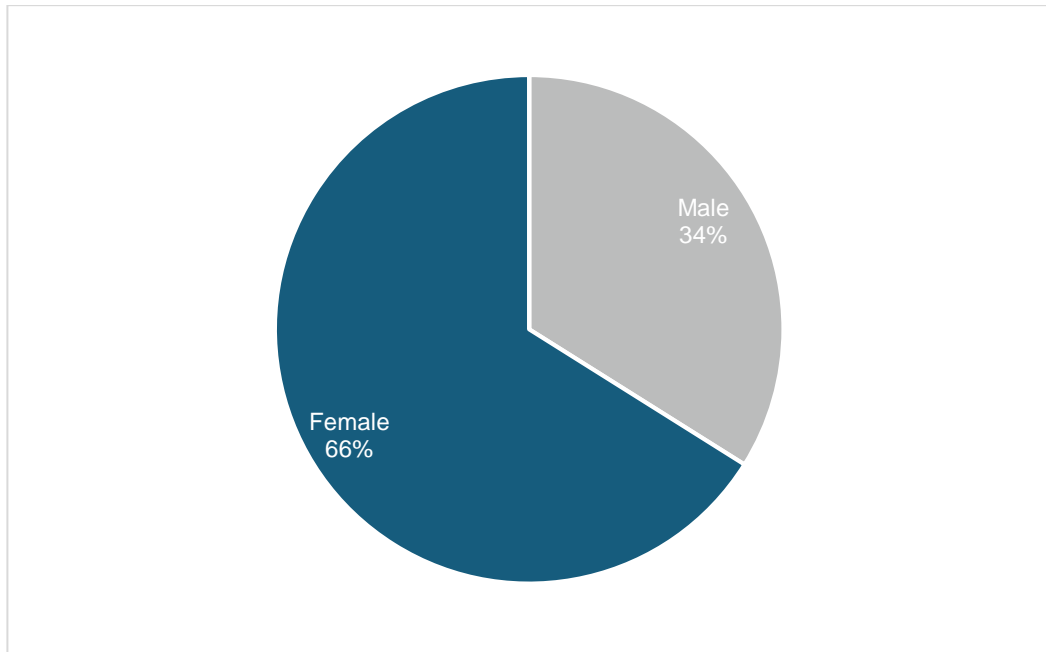
Different backgrounds and diverse staff enable PSAPs to understand the needs of the community they serve. Embracing the many characteristics that differentiate individuals helps to foster a positive working environment. To gain a better understanding of the demographics of 9-1-1 Specialists in Maryland, the Commission asked the 24 jurisdictions to provide detailed information about their 9-1-1 Specialist workforce.

There are 1,303 9-1-1 Specialists in Maryland. The information gathered, which can be found in [Appendix J](#), shows that two-thirds of 9-1-1 Specialists are female (65%).

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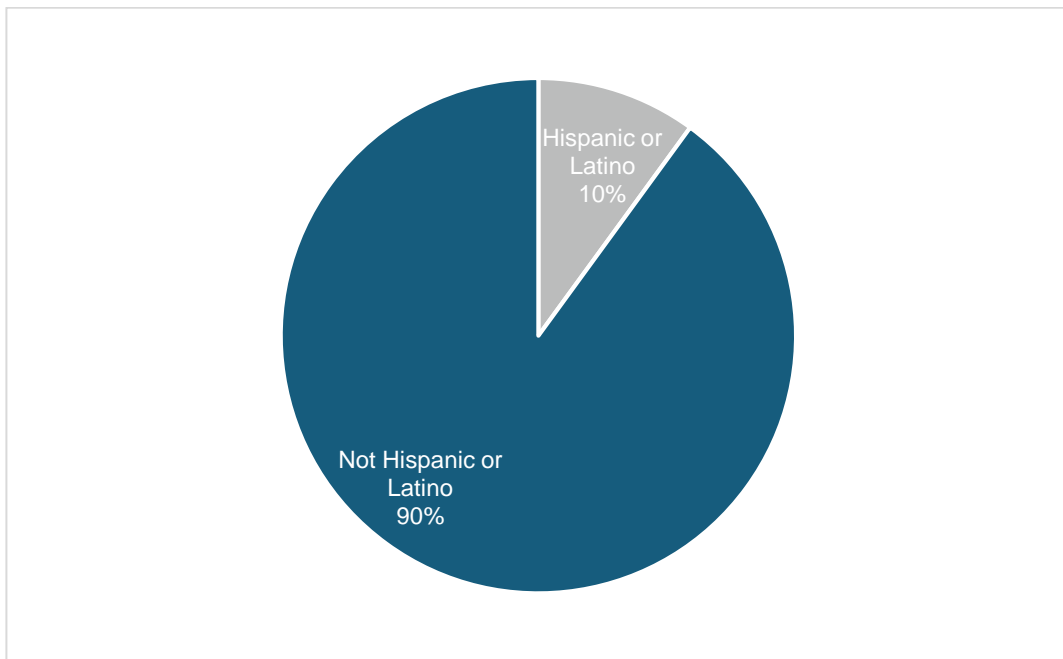
<sup>29</sup> Jackson, S. M., Hillard, A. L., Schneider, T. R. *Using Implicit Bias Training to improve attitudes toward women in STEM*. <https://www.uwo.ca/bmi/wwins/events/Jackson-et-al.-2014.pdf>

Figure 4: 9-1-1 Specialists by Gender



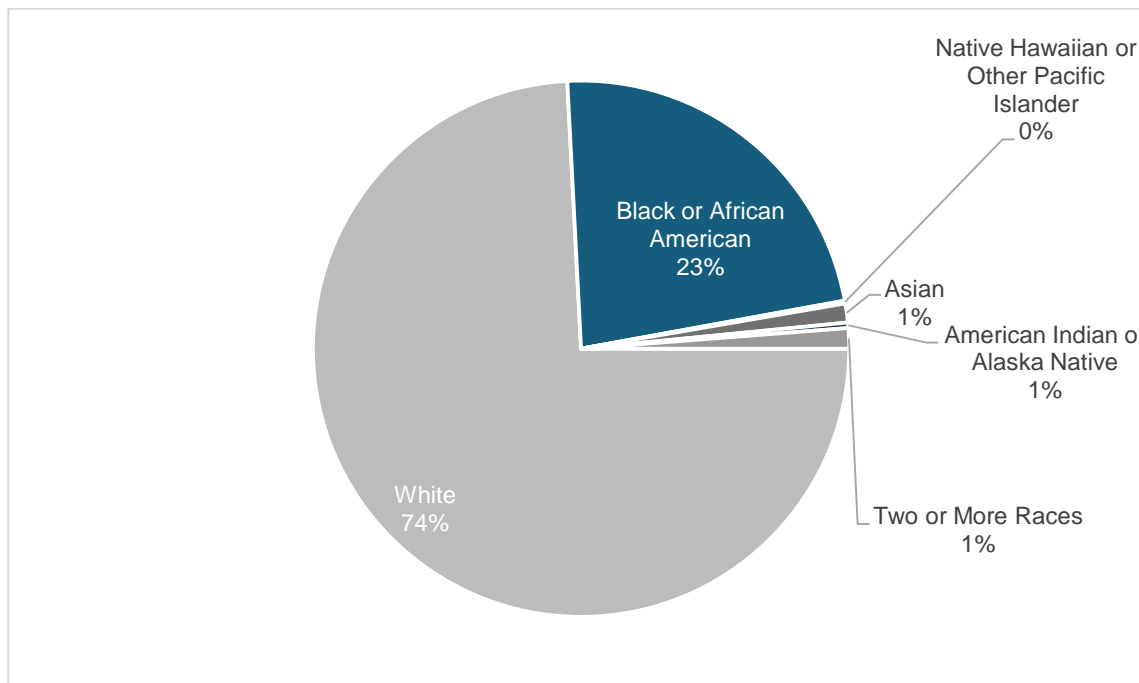
9-1-1 Specialists of Hispanic and Latino ethnicity represent 10% of the workforce, and non-Hispanic and Latino's represent 90% of the workforce.

Figure 5: 9-1-1 Specialists by Ethnicity



When reviewing the demographic breakdown by race, 74% of 9-1-1 Specialists are white, and 23% are Black or African American. Other races represent 3% of the workforce.

Figure 6: 9-1-1 Specialists by Race



The Commission recognizes the importance of diversity and understands that local demographics greatly influence employee statistics. By creating targeted recruitment messages, PSAPs can reach prospective employees who might not have considered a career in 9-1-1. The Commission anticipates the 9-1-1 Board will leverage the newly formed relationship with MDEM's Human Resources Division to support this initiative.

## RECOMMENDATION

**The 24 PSAPs and the 9-1-1 Board, in partnership with MDEM, shall create and share best practices for targeted recruitment efforts that will attract a broad applicant pool with the goal of diversifying the workforce.**

### 6.2.4 Best Practices for Hiring

Historically, 9-1-1 has faced staffing shortages. Many PSAPs find themselves in a cycle of continuously recruiting 9-1-1 Specialists. According to APCO's Project RETAINS, the average national retention rate in PSAPs is 71% annually. Many PSAPs are faced with increased demands and job complexity. Compounding this issue is

the fact that PSAPs are faced with recruiting a millennial workforce that tends to strive for work-life balance or desire to telework.<sup>30</sup>

As Maryland continues its transition to NG911, PSAPs will need a workforce that is well-suited for the skills and tasks associated with this new technology. Many PSAPs' hiring processes historically require detailed background checks—often taking six to nine months. The position then requires an ADDITIONAL six to nine months of training.

Creating efficient and effective hiring will provide PSAPs with tools to help screen candidates that are most qualified for the position. Successful hiring practices can save time; allow the onboarding of new employees faster; and may result in reducing employee turnover.

## RECOMMENDATION

**To assist Maryland's 24 PSAPs with the selection process for hiring personnel with the necessary skills, resilience, and adaptability to perform the tasks of a 9-1-1 Specialist, the 9-1-1 Board shall establish hiring best practices. Additionally, the 9-1-1 Board (in collaboration with MDEM) shall provide resources and relevant information to PSAPs to assist them in hiring the most qualified personnel.**

### 6.2.5 Occupational Wellness

Each year, Maryland's 9-1-1 Specialists handle an average of 4.5 million emergency requests for assistance. Many times, they do not know the outcome of these requests; resulting in a lack of closure. As technology advances, exposure to not just auditory stressors but visual stressors such as seeing graphic pictures or videos stands to further exacerbate the trauma to which they are exposed. These factors inherently put 9-1-1 Specialists at great risk for PTSD, clinical depression, and other stress-related conditions.<sup>31</sup>

A 2019 study conducted by Fairfax County Police showed that 14.5% of Public Safety Communications personnel who had responded to their survey had had suicidal thoughts within the last year<sup>32</sup>. By comparison, the rate of suicidal thoughts in the United States is only 3%. Suicidal thoughts are often linked to other problems, such as depression.<sup>33</sup> COVID-19 further increased the burdens on our 9-1-1 professionals. A NENA survey showed that 40% of 9-1-1 professionals felt more stressed due to the pandemic than before.<sup>34</sup>

It is vitally important that 9-1-1 Specialists have access to support systems. PSAP mental health expert Jim Marshall explains, "One of the greatest threats to the mental health and morale of these in the center is the

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<sup>30</sup> APCO Project RETAINS: Staffing and Retention in Public Safety Answering Points (PSAPs): A Supplemental Study <https://www.apcointl.org/services/staffing-retention/#study>

<sup>31</sup> Marshall, Jim. <https://www.911training.net/>

<sup>32</sup> 2019 Virginia Public Safety Mental Health Pilot Survey <http://fcop5000.org/wp-content/uploads/2019/08/2019-Fairfax-County-Police-Pilot-Survey-Summary.pdf>

<sup>33</sup> *ibid*

<sup>34</sup> NENA Surveys Show How PSAPs Are Holding Up During the Pandemic <https://www.govtech.com/em/safety/nena-surveys-show-how-psaps-are-holding-up-during-the-pandemic.html>

cumulative build-up of stress from the multitude of demands, frustrations, and irritations over the course of weeks, months, and years.”<sup>35</sup> Marshall has tirelessly promoted the importance of access to mental health services for 9-1-1 professionals.



**17% to 24% of telecommunicators in the United States exhibited symptoms of probable PTSD, and 23.9% exhibited symptoms of probable major depression.**

Recent studies of stress among 9-1-1 Specialists show that 17% to 24% of telecommunicators in the United States exhibited symptoms of probable PTSD, and 23.9% exhibited symptoms of probable major depression. According to Mental Health First Aid USA, “when facing a mental health ... challenge, a person can feel alone or afraid to ask for help.”<sup>36</sup>

The Commission has recognized, as noted in previous reports, the importance of ensuring the occupational wellness of these employees. Consequently, the S&T Subcommittee seeks to further advance that support by protecting the right of each 9-1-1 Specialist to confidentially seek treatment without requiring employer authorization or notification.

## RECOMMENDATION

**To address confidentiality and safeguard an employee’s ability to seek behavioral health care without impediment, and as part of the need for PSAPs to implement occupational wellness programs, it is critical that no county require a 9-1-1 Specialists seeking assistance to go through any chain of command to obtain care. Therefore, the Commission recommends as part of the county’s development of 9-1-1 Specialist occupational wellness programs, any support should be confidential between the employee and the provider.**

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<sup>35</sup> Marshall, Jim and Larorenza, Tracey. 2018. *The Resilient 9-1-1 Professional: A Comprehensive Guide to Surviving & Thriving Together in the 9-1-1 Center*.

<sup>36</sup> “Why Peer-to-Peer Support is Important.” Mental Health First Aid USA, September 23, 2019. <https://www.mentalhealthfirstaid.org/2019/09/why-peer-to-peer-support-is-important/>



## 7



## Technology &amp; Cybersecurity

## 7.1 Background

The advancement of NG911 technology in Maryland requires a broad focus, including updates to infrastructure, systems, and policies. The Technology and Cybersecurity (T&C) Subcommittee addressed various elements of these topics in 2018, 2019, and 2020 including Cybersecurity needs, Geographic Information System (GIS) data management, emerging technologies, and the reduction of call transfers. This is foundational, as nearly all counties in Maryland are in the process of implementing or procuring NG911 services.

## 7.2 2021 Priorities

Similar to this time last year, Maryland PSAPs are dealing with the COVID-19 pandemic, which now includes emerging variants; however, unlike in 2020, this has not been a major driver in the T&C Subcommittee's 2021 priorities. PSAPs have learned, adapted, and implemented processes and tools that have allowed them to function well—even during the ongoing pandemic. The single new priority—enhancing Z-axis data—is forward-thinking and should result in significant benefits to emergency response—especially in urban settings with multi-storied structures.

Z-Axis/Elevation  
Data

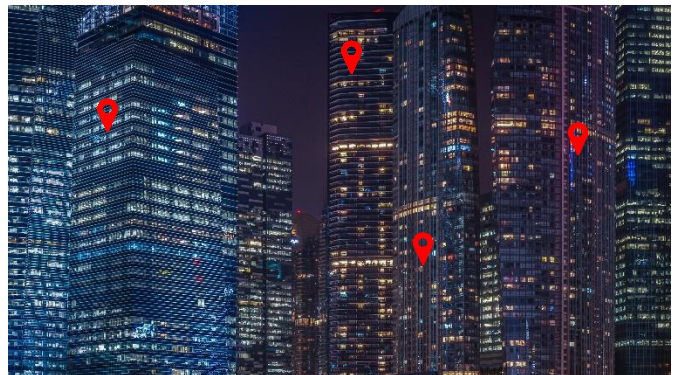
Remote Call-taking  
Capabilities

Cybersecurity  
Practices

Swatting Bill  
Clarification

## 7.3 Enhancing Z-axis Data

Call-routing in the existing legacy 9-1-1 environment is performed through referencing static information with no dynamic location capabilities. But the world is a sphere with three dimensions—two dimensions (horizontal “X”-axis and vertical “Y”-axis) that identify a location along the surface and a third dimension (“vertical” Z-axis) that identifies a location height above the surface. Cellular phone technology can capture and transmit a three-dimensional location. In the NG911 environment where GIS capabilities are leveraged, this information can be used to enable highly accurate and dynamic call-



routing. Just as the two dimensions along the surface must be assessed against a standard, so must the third dimension.

On April 3, 2021, the FCC implemented a vertical location accuracy benchmark, which requires nationwide cellular providers to deploy dispatchable location or Z-axis technology in the top 25 cellular market areas (CMAs) across the Nation. The Greater Washington, DC area, which includes parts of Maryland, consistently ranks in the top ten CMAs<sup>37</sup>.

The Commission, PSAPs, and GIS community in Maryland are taking advantage of existing partnerships between the 9-1-1 community and 24 PSAPs to collaborate on a standardized approach to translate Z-axis location data. System updates will be necessary to accurately represent location height that equates to a floor level within a multi-storied structure. When available, this information will provide the 9-1-1 Specialist valuable information that to help locate those in need of help.

Maryland's approach may require the integration of geospatial data to use the Z-axis value provided with a wireless request. Without this additional data, the raw Z-axis location data could be limited and provide onsite responders with only an estimation of the caller's location. Providing an accurate floor level for dispatching could potentially save valuable time as First Responders try to locate the individual in need.

## RECOMMENDATION

**9-1-1 systems that utilize a caller's location-based information shall have the ability to use solutions that meet the Z-axis metric and "Z" elevation if made available by the provider(s). The systems should be updated to use this information to assist accurately locating an individual in a multi-story building.**

### 7.4 Remote Call-taking Capabilities

As a result of the work done by Maryland's PSAPs over the past 18 months in response to the COVID-19 pandemic and continued progress with NG911 by the Commission, 9-1-1 Board, and ECC<sup>38</sup>, a continued focus on remote PSAP capabilities proceeded in 2021. Unlike 2020, when many unknowns existed in the early stages of the pandemic, proven and reliable solutions are now available.

As noted in the 2020 Commission report, some PSAPs separated 9-1-1 Specialists into pods, while others employed technical solutions, allowing individuals to work remotely from their homes. Some also dispersed 9-1-1 Specialists into areas not designed to support 9-1-1 operations, such as conference rooms—all to limit exposure and transmission of the virus. The 9-1-1 Board and ECC procured remote call-taking equipment for each PSAP. Due to the magnitude of the public health emergency, much of this was trial-and-error, and many months later, the public safety community can use the lessons learned to do better in the future.

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<sup>37</sup> FCC PS Docket No. 07-114, Indoor Location Accuracy Timeline and Live Call Data Reporting Template, <https://www.fcc.gov/public-safety-and-homeland-security/policy-and-licensing-division/911-services/general/location-accuracy-indoor-benchmarks>

<sup>38</sup> MDEM, Emergency Communications Committee

A survey of the 24 Maryland PSAPs was sent out for this report to gauge remote or altered 9-1-1 frontline staffing or operations due to the pandemic. Seventeen PSAPs responded. The responses are provided below.

Figure 7: Centers that adopted remote or altered operations

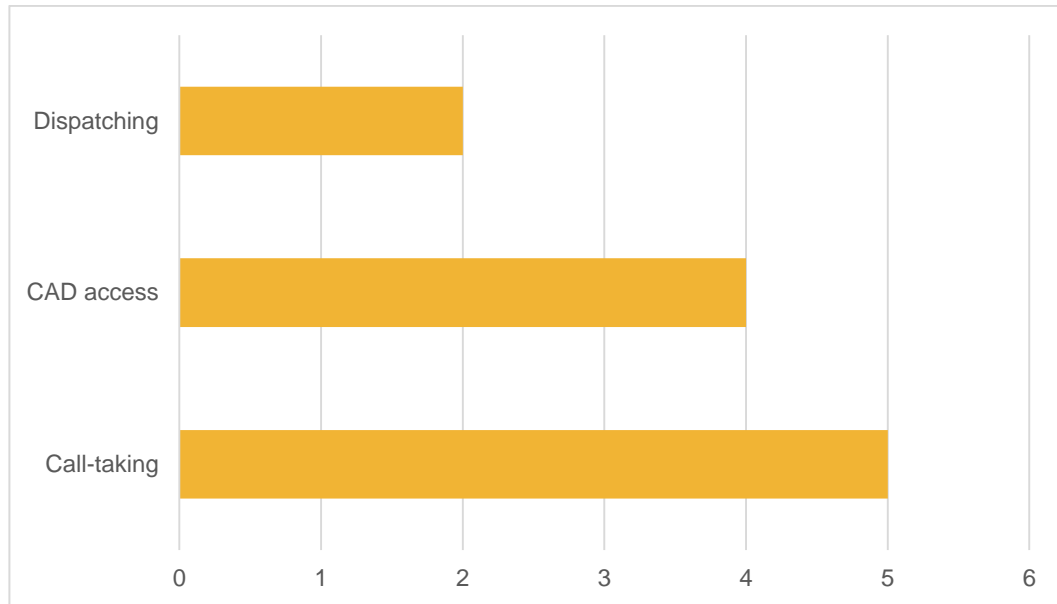
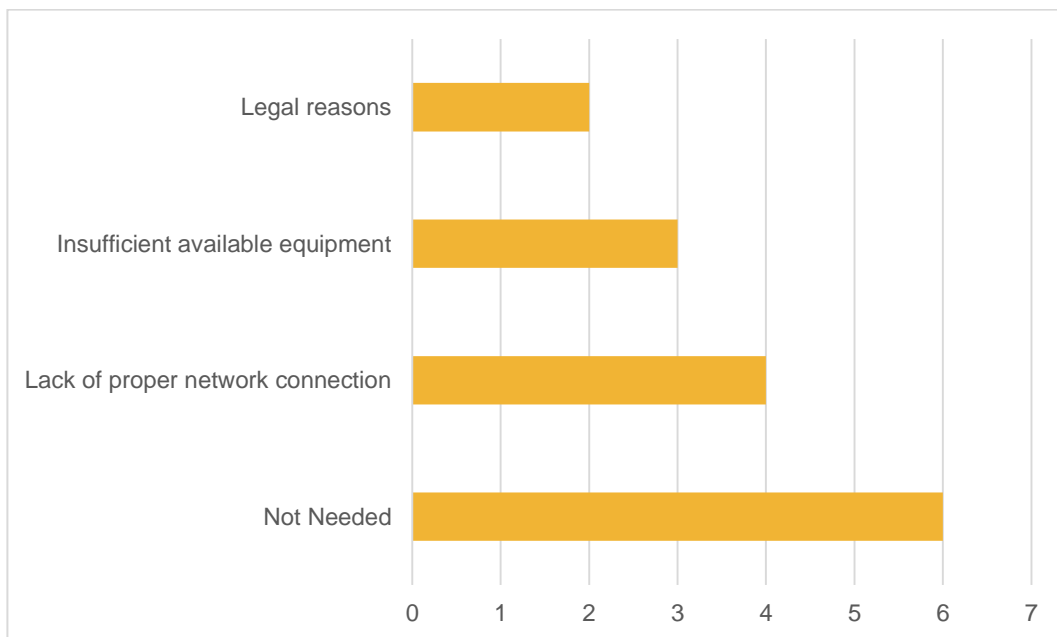


Figure 8: Centers that **did not** adopt remote or altered operations



## RECOMMENDATION

Because a PSAP evacuation or need for distributed staffing is a real possibility (e.g., COVID-19, system failure, etc.), remote call-taking, processing, and dispatching may be necessary as part of a PSAP's continuity of operations (COOP) plan. This requires many considerations, but the Commission has identified the following priorities and recommends that the 9-1-1 Board, ECC, and jurisdictions:

- Advocate for the expansion of broadband infrastructure to underserved areas to enable remote emergency support;
- Enhance resiliency and redundancy throughout the 9-1-1 call-taking, processing, and dispatching environment;
- Plan and implement dynamic call-routing as part of NG911 deployments;
- Update policies, procedures, and memoranda of understanding/agreement (MOU/MOA) with neighboring jurisdictions including municipalities, federal agencies, and college campuses to encompass these remote call-taking capabilities; and
- Develop best practices\* regarding the technical, confidentiality, liability, and human factors of working in a remote environment.

\*In developing best practices regarding confidentiality (including the Health Insurance Portability and Accountability Act [HIPPA]) in working in a remote environment, the 9-1-1 Board and ECC need the assistance of others regarding 9-1-1 Specialists accessing non-criminal history (e.g., Criminal Justice Information Services [CJIS]) information. The Commission requests that the State Police Superintendent and the Secretary of the Department of Public Safety and Corrections work with the Federal Bureau of Investigation's (FBI) CJIS office to grant 9-1-1 Specialists access, similar to the visibility law enforcement officers have from mobile data computers within squad cars.

### 7.5 Improving Cybersecurity Practices

Cybersecurity has been and remains a focal point for the Commission. In the 2018 Commission Report, the T&C Subcommittee recommended that all PSAPs "should review and adopt...national standards and best practices, at a minimum, for the prevention and protection from Cybersecurity threats." This recommendation was included in enacted legislation.<sup>39</sup>

Much progress has been made in the past three years, but more is needed. Cybersecurity risks have increased dramatically over the past several years—up to 600% since the beginning of the pandemic by some Cybersecurity experts' estimates<sup>40</sup>. As required by recently enacted legislation, the 9-1-1 Board established Cybersecurity standards<sup>41</sup> for PSAPs based on nationally accepted best practices. Additionally, the 9-1-1 Board has incorporated specific Cybersecurity inquiries into its annual PSAP inspections, which will aid in understanding the overall statewide security posture.

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<sup>39</sup> <http://mgaleg.maryland.gov/mgaweb/Legislation/Details/sb0339/?ys=2019rs>

<sup>40</sup> <https://purplesec.us/cyber-security-trends-2021/>

<sup>41</sup> Maryland 9-1-1 Board Policy Manual, Policy 2-205

PSAP Cybersecurity projects are funded through the 9-1-1 Trust Fund. As such, there is no reason for any county to fail to initiate proper procedures to protect its environment. The Commission recognizes that greater understanding and compliance with Cybersecurity expectations can be accomplished through outreach and education and recommends a more hands-on approach by the 9-1-1 Board to ensure statewide adherence.

## RECOMMENDATION

**With the increasing level of Cybersecurity risk, it is crucial that each PSAP in Maryland comply with the 9-1-1 Board's Cybersecurity policy. If a PSAP does not meet expectations during their annual inspection, the 9-1-1 Board shall work with the PSAP to develop an aggressive, consensus remediation plan and implementation timeline. Failure to adhere to the plan may result in the 9-1-1 Board deferring new, non-cybersecurity requests from the 9-1-1 Trust Fund until remediation is completed.**

### 7.6 Swatting Bill Clarifications

NG911 enhances 9-1-1 service while introducing the need for a greater focus on Cybersecurity. In 2019 and 2020, the T&C Subcommittee addressed the issue of telephone misuse by recommending legislation to help close gaps regarding telephony denial of service (TDoS) and distributed denial of service (DDoS) attacks; define issues with providing false information to a PSAP; and enhance penalties for such acts.

The T&C Subcommittee reviewed the language from the 2021 proposed bill and agreed with Senator Kagan's recommendation to reintroduce the bill by bisecting Swatting and TDoS/DDoS for clarity.

## RECOMMENDATION

**Misuse of the 9-1-1 system is detrimental to the reliability and availability of 9-1-1 and impacts a growing number of unsuspecting victims each year. The Commission recommends:**

- 1. Strengthening penalties for an individual found guilty of instigating a swatting incident and fraudulently sending public safety officers (special weapons and tactics [SWAT] teams) to the address of an innocent person.**
- 2. Increasing penalties for misuse of the 9-1-1 system include:**
  - **Telephony Denial of Service (TDoS):** flooding a 9-1-1 Center's voice lines, preventing legitimate emergency calls from getting through;
  - **Distributed Denial of Service (DDoS):** maliciously disrupting a 9-1-1 Center by overwhelming its Internet network; and
  - **Caller ID manipulation:** using a false identity when repeatedly making phone calls or sending texts.

## 8 Commission Recommendations

The efforts of the 2021 subcommittees resulted in 24 Commission-approved<sup>42</sup> recommendations. Each item underwent a thorough review and voting process that began in one or more subcommittees. Once approved there, recommendations were brought to the Commission, where members could question and amend the wording before a final vote.

Number	Category	Commission Recommendations
1*	County Authority to Set the 9-1-1 Fee	9-1-1 revenues have fallen short of expectations following the fee adjustments in Carl Henn’s Law (2019). Several counties have found it necessary to raise the county portion of the 9-1-1 fee to the maximum amount (\$1.50) allowed. The Commission recommends that all counties be authorized to set the local portion of the 9-1-1 fee to a level that will cover the eligible expenses of their PSAP.
2	Enhancing Comptroller Reporting	Because of the new and evolving 9-1-1 fee structure, it is necessary to ensure carrier compliance with the proper fee remittance. In addition to the annual report to the 9-1-1 Board, the Comptroller shall provide quarterly updates on carrier fee remittance audits and notify the 9-1-1 Board immediately of any deficiencies through December 31, 2024. After that, quarterly reports will be made available to the 9-1-1 Board upon request.
3	Payment Portal	Due to the ongoing challenges with delayed payments to vendors and the lack of visibility into the payment process, the Commission recommends the creation of a procurement and payment portal with support from the Comptroller, the Department of General Services (DGS), and the Department of Information Technology (DoIT). In addition to supporting Maryland’s 24 PSAPs, the portal will provide clarity for all departments and agencies using the Comptroller’s office for financial transactions.

<sup>42</sup> Individuals with a potential conflict of interest on a recommendation recused themselves from voting..

Number	Category	Commission Recommendations
4*	Workers' Compensation	<p>A 9-1-1 Specialist's daily job is demanding, harrowing, and essential to public health and safety. Maryland's 9-1-1 Specialists are the First, First Responders in an emergency. They regularly receive some of the most challenging and traumatizing appeals for help. Their courageous public service is essential to saving lives. 9-1-1 Specialists are routinely exposed to events causing posttraumatic stress disorder (PTSD) during the course of their employment. Because of the severe nature and cumulative effect of PTSD, it is the duty of each county to provide coverage to 9-1-1 Specialists for their work-related injury. PTSD and other mental health conditions suffered by a 9-1-1 Specialist are presumed to be compensable injuries or occupational diseases when evidence indicates causation by an event or events arising out of and in the course of the 9-1-1 Specialist's employment.</p> <p>Mental health conditions such as PTSD shall meet the criteria specified by the most recent edition of the American Psychiatric Association's <i>Diagnostic and Statistical Manual of Mental Disorders</i>. The 9-1-1 Specialist must be examined and diagnosed with the mental health condition(s) by a psychologist or psychiatrist licensed to practice in the jurisdiction where treatment is rendered. No compensation shall be awarded when PTSD is a result of a personnel-related action including, but not limited to, disciplinary action, work evaluation, job transfer, layoff, involuntary demotion, termination, retirement, or similar action taken in good faith by the employer.</p> <p>The Commission recommends a Workers' Compensation policy that provides coverage for a 9-1-1 Specialist to include coverage for PTSD and recognizes that the number of PTSD compensable claims may affect the Maryland Workers' Compensation system causing actual claim frequency to be slightly different than otherwise expected.</p>
5	9-1-1 Board Handbook	<p>Because of the need to ensure that the important role of the 9-1-1 Board is documented and to help new members understand their obligations, the Commission strongly recommends that the 9-1-1 Board create a 9-1-1 Board Member Handbook with an emphasis on:</p> <ul style="list-style-type: none"> <li>• Roles and responsibilities;</li> <li>• 9-1-1 Trust Fund project funding request process;</li> <li>• Allowable funding guidelines;</li> <li>• Key partners; and</li> <li>• Leadership in improving emergency communications in 9-1-1.</li> </ul>

Number	Category	Commission Recommendations
6	9-1-1 Board Vacancies	To support the important work of the newly expanded 9-1-1 Board and the increased funding, the Commission recommends the 9-1-1 Board, in coordination with MDEM, establish a protocol for quickly recruiting candidates to fill 9-1-1 Board vacancies with individuals who have the appropriate expertise and are deeply committed to improving 9-1-1 emergency services in Maryland.
7*	9-1-1 Board Leadership	To support the important work of the newly expanded 9-1-1 Board and the increased funding, the Commission recommends the 9-1-1 Board, in coordination with MDEM, establish a protocol for quickly recommending candidates who have the appropriate expertise and are deeply committed to improving 9-1-1 emergency services in Maryland for vacant board positions.
8*	3-1-1	The Commission recommends further action by the 3-1-1 workgroup to develop and implement a statewide 3-1-1 system in Maryland.
9	Updates to COMAR	COMAR contains outdated language related to the parent organization of the 9-1-1 Board, legacy 9-1-1 systems, and operations, and requires revisions to be applicable for NG911. The Commission recommends that the 9-1-1 Board make necessary updates with input from interested parties.
10	Statewide Data Collection and Reporting	The Commission recommends that the 9-1-1 Board evaluate what information should be collected at a state level to monitor the operational health and security of the NG911 system and determine the best method for sharing and distributing the collected information to enhance situational awareness.
11	Kari's Law Public Education Campaign	Awareness and enforcement of Kari's Law will ensure that Maryland residents and visitors can dial 9-1-1 without any additional digits to obtain an outside line from a Multi-line Telephone System (MLTS) (e.g., hotel, business, etc.). The Commission recommends that the 9-1-1 Board, with the support of key stakeholders, develop an educational campaign that can be distributed via Maryland associations.
12	Outage Notification	<p>9-1-1 outages have a major impact on PSAPs and individuals seeking emergency assistance.</p> <p>On behalf of the Commission, Mission Critical Partners (MCP) filed comments with the FCC on July 27, 2021, in response to the Third Notice of Proposed Rulemaking regarding 9-1-1 outage notifications (see <a href="#">Appendix G</a>).</p>



Number	Category	Commission Recommendations
13	Real-Time Text Enforcement	To ensure equal access to 9-1-1 services for all Marylanders with disabilities, it is important that carriers start providing RTT technology. The Commission drafted a letter to the FCC on September 13, 2021, requesting they halt granting waivers and begin enforcing deadlines outlined in Title 47, Chapter I, Subchapter B, Part 67 of the Electronic Code of Federal Regulations ( <a href="#">see Appendix H</a> ).
14*	9-1-1 Specialist Reclassification	9-1-1 Specialists are the first link in the chain of safety and survival—answering, triaging, and dispatching emergency requests for assistance and providing vital life-safety and life-saving instructions to those who live, work, and travel in Maryland. These essential employees are the First, First Responders and undergo comprehensive training; are certified in Emergency Medical Dispatch (EMD); Emergency Fire Dispatch (EFD); and Emergency Police Dispatch (EPD); and are the critical link between those in need and public safety responders (e.g., law enforcement, fire-rescue, and EMS personnel). 9-1-1 Specialists remain in constant contact with the emergency scene incident commander and other emergency responders throughout the incident, ensuring effective on-scene response, coordination, and timely resolution. Given the vital importance of our 9-1-1 Specialists, the Maryland General Assembly should reclassify 9-1-1 Specialists as public safety "First Responders."
15*	9-1-1 Specialist Compensation	Inadequate compensation is one of the leading causes of a jurisdiction's inability to recruit and retain qualified 9-1-1 Specialists. In keeping with the legislation (MD Public safety Code An. 1-302.1), the Commission recommends that local jurisdictions compensate 9-1-1 Specialists in a manner that is commensurate with their responsibilities, training, knowledge, and skills. The minimum wage is not considered to adequately satisfy these criteria, resulting in underqualified applicants and turnover.

Number	Category	Commission Recommendations
16*	Implicit Bias Training	<p>Per <a href="#">SB714</a> (2021), the Commission recommends that the 9-1-1 Board establish a plan to provide Implicit Bias Training to new and experienced 9-1-1 Specialists. This will help mitigate the potential impacts of discriminatory thinking and behavior. The 9-1-1 Board shall develop training standards and criteria and approve initial and ongoing training curriculum. PSAPs shall be audited at each annual inspection. If a PSAP does not demonstrate compliance, the 9-1-1 Board shall collaborate with the PSAP to develop a remediation plan, including an implementation timeline. The 9-1-1 Board may impose sanctions for failure to comply.</p> <p>In keeping with the legislative intent of SB714, 9-1-1 Specialist demographic information, including race and gender, listed by county and statewide (See <a href="#">Appendix J</a>), will be included in the 9-1-1 Board's annual report.</p>
17	Diversity in Recruitment	The 24 PSAPs and the 9-1-1 Board, in partnership with MDEM, shall create and share best practices for targeted recruitment efforts that will attract a broad applicant pool with the goal of diversifying the workforce.
18	Best Practices for Hiring	To assist Maryland's 24 PSAPs with the selection process for hiring personnel with the necessary skills, resilience, and adaptability to perform the tasks of a 9-1-1 Specialist, the 9-1-1 Board shall establish hiring best practices. Additionally, the 9-1-1 Board (in collaboration with MDEM) shall provide resources and relevant information to PSAPs to assist them in hiring the most qualified personnel.
19*	Occupational Wellness	To address confidentiality and safeguard an employee's ability to seek behavioral health care without impediment, and as part of the need for PSAPs to implement occupational wellness programs, it is critical that no county require a 9-1-1 Specialist seeking assistance to go through any chain of command to obtain care. Therefore, the Commission recommends as part of a county's development of 9-1-1 Specialist occupational wellness programs, any support is confidential between the employee and the provider.
20	Z-axis	9-1-1 systems that utilize a caller's location-based information shall have the ability to use solutions that meet the Z-axis metric and "Z" elevation if made available by the provider(s). The systems should be updated to use this information to assist accurately locating an individual in a multi-story building.

Number	Category	Commission Recommendations
21	Remote Call-taking	<p>Because a PSAP evacuation or need for distributed staffing is a real possibility (e.g., COVID-19, system failure, etc.), remote call-taking, processing, and dispatching may be necessary as part of a PSAP's Continuity of Operations (COOP) Plan. This requires many considerations, but the Commission has identified the following priorities and recommends that the 9-1-1 Board, ECC, and jurisdictions:</p> <ul style="list-style-type: none"> <li>• Advocate for the expansion of broadband infrastructure to underserved areas to enable remote emergency support;</li> <li>• Enhance resiliency and redundancy throughout the 9-1-1 call-taking, processing, and dispatching environment;</li> <li>• Plan and implement dynamic call-routing as part of NG911 deployments;</li> <li>• Update policies, procedures, and memoranda of understanding/agreement (MOU/MOA) with neighboring jurisdictions including municipalities, federal agencies, and college campuses to encompass these remote call-taking capabilities; and</li> <li>• Develop best practices regarding the technical, confidentiality, liability, and human factors of working in a remote environment.</li> </ul>
22*	Cybersecurity Practices	<p>With the increasing level of Cybersecurity risk, it is crucial that each PSAP in Maryland comply with the 9-1-1 Board's Cybersecurity policy. If a PSAP does not meet expectations during their annual inspection, the 9-1-1 Board shall work with the PSAP to develop an aggressive, consensus remediation plan and implementation timeline. Failure to adhere to the plan may result in the 9-1-1 Board deferring new, non-cybersecurity requests from the 9-1-1 Trust Fund until remediation is completed.</p>
23*	Swatting	<p>Misuse of the 9-1-1 system is detrimental to the reliability and availability of 9-1-1 and impacts a growing number of unsuspecting victims each year. The Commission recommends strengthening penalties for an individual found guilty of instigating a swatting incident and fraudulently sending public safety officers (special weapons and tactics [SWAT] teams) to the address of an innocent person.</p>
24*	9-1-1 System Misuse	<p>The Commission recommends increasing penalties for misuse of the 9-1-1 system, including:</p> <ul style="list-style-type: none"> <li>• Telephony Denial of Service (TDoS): flooding a 9-1-1 Center's voice lines, preventing legitimate emergency calls from getting through;</li> <li>• Distributed Denial of Service (DDoS): maliciously disrupting a 9-1-1 Center by overwhelming its Internet network; and</li> <li>• Caller ID manipulation: using a false identity when repeatedly making phone calls or sending texts.</li> </ul>

\* These recommendations require legislative change.

## 9 Conclusion

As the 9-1-1 Commission concludes its extraordinarily productive four-year term, it does so with appreciation and gratitude to all members of the Maryland General Assembly, staff, local government officials, 9-1-1 Specialists, 9-1-1 stakeholders, Marylanders, and many others.

The changes, legislative and administrative, have positioned Maryland well to address the challenges and opportunities presented by NG911 in the near-and-long term. The future of 9-1-1 in Maryland will be overseen by the appointed and expanded (from 17 to 24) 9-1-1 Board, now an autonomous organization contained within and supported by the newly restructured and renamed Maryland Department of Emergency Management (MDEM), a Cabinet-level Department. The routine management of the 9-1-1 system and the 9-1-1 Trust Fund, including the transition to NG911, will continue to be provided by the 9-1-1 Board.

It is widely recognized that the only thing about NG911 that will not change will be the number “9-1-1.” Virtually everything else has, is, or will be different. The 9-1-1 Commission urges that the “new” 9-1-1 Board take advantage of the opportunities provided by the changes enacted over the past four years to:

- Ensure that the initial and in-service training of Maryland’s 9-1-1 Specialists is provided in the most timely, efficient, and cost-effective manner, which may require adjustments as technology and service expectations evolve;
- Adopt technology to collect data for the delivery of 9-1-1 service in Maryland;
- Explore online means to serve the 9-1-1 community and residents of Maryland in a transparent manner;
- Use the press and social media to communicate with and inform the public, and 9-1-1 stakeholders, of all 9-1-1 related matters;
- Develop clear operational strategies to address the various responsibilities of the 9-1-1 Board's Office of the Executive Director (OED);
- Review all current operating procedures to ensure the OED utilizes the most efficient and cost-effective procedures possible;
- Enhance and redefine the responsibilities of all personnel positions;
- Identify any gaps in skills needed by the 9-1-1 Board and OED;
- Adjust position descriptions and compensation grades within the 9-1-1 industry, Maryland 9-1-1 Board, and OED to meet current and future needs;
- Utilize the most efficient and timely way to post, recruit, and recommend individuals to initiate the process for Governor appointments to fill vacancies in the OED and on the 9-1-1 Board;
- Collaborate with MDEM to update the Annotated Code of Maryland (ACM)/Code of Maryland Annotated Regulations (COMAR), related to 9-1-1; and
- Assume a forward-leaning, proactive business model for the 9-1-1 Board and PSAPs.

The work of the Commission would not have been possible without the dedication and vision of the Honorable Senator Cheryl Kagan, Commission Chair, and her trusted partner and advisor, Mr. Steve Souder, Commission Vice Chair and nationally respected 9-1-1 expert. Their passion and support encouraged open dialogue and debate over the important topics addressed by the subcommittees and Commission.

Each subcommittee was led by a designated Chair who was integral to facilitating the discussions and developing recommendations that were approved by the respective subcommittee, followed by the full Commission.

Table 7: Commission Subcommittee Chairs

Subcommittee Chair	Representing
The Honorable Senator Cheryl C. Kagan	<ul style="list-style-type: none"> <li>Commission Chair</li> <li>Finance &amp; Structure Subcommittee Chair</li> </ul>
Charlynn Flaherty, Deputy Director	<ul style="list-style-type: none"> <li>Staffing &amp; Training Subcommittee Chair</li> <li>Prince George's County Office of Homeland Security Public Safety Communications</li> </ul>
Randall Cunningham, Manager, Technical Services	<ul style="list-style-type: none"> <li>Technology &amp; Cybersecurity Subcommittee</li> <li>Harford County 9-1-1</li> </ul>
Captain Scott Brillman, Deputy Director Emergency Management	<ul style="list-style-type: none"> <li>Oversight &amp; Accountability Subcommittee Chair</li> <li>City of Baltimore Office of Emergency Management</li> </ul>

Contributing Commission members played an integral role in the discussions and recommendations to help further solidify the 9-1-1 system in Maryland.

Table 8: Appointed Commission Members

Appointed Commission Member	Representing
The Honorable Senator Cheryl C. Kagan, Chair	Maryland State Senate
Mr. Steve Souder, Vice Chair, National 9-1-1 Expert, and Former 9-1-1 Director	Mid-Eastern Chapter of the Association of Public Safety Communications Officials, International (APCO)
The Honorable Senator Edward "Ed" Reilly	Maryland State Senate
The Honorable Delegate Terri Hill	Maryland House of Delegates
The Honorable Delegate Susan W. Krebs	Maryland House of Delegates

Appointed Commission Member	Representing
Scott L. Brillman, Captain, Deputy Director, City of Baltimore Office of Emergency Management	Maryland 9-1-1 Board
Randall Cunningham, Public Safety Manager, Department of Emergency Services, Harford County	County Public Safety Answering Point*
Wayne Darrell, Kent County	Baltimore Metropolitan Council of Governments
Bryan Ebling, Retired Director of Emergency Service, Caroline County	Maryland 9-1-1 Board
Julia Fischer, Acting Chief of Applications and Maryland Geographic Information Officer (GIO)	Maryland Department of Information Technology (DoIT)
Charlynn Flaherty, Deputy Director, Office of Homeland Security Public Safety Communications, Prince George's County	County Public Safety Answering Point*
Tracy German, Emergency Communications Manager, Frederick County Emergency Communications	9-1-1 Public Safety Telecommunicators*
Sue Greentree, Retired 9-1-1 Specialist, Anne Arundel County	Maryland 9-1-1 Board
Tiffany Harvey, Former Director, State, Government, and Community Affairs, Verizon	Wireless Communications Industry^
Sean Looney, Vice President, State Government Affairs, Comcast NBC Universal	Broadband Industry^
Jack Markey, Director, Division of Emergency Management, Frederick County	County Public Safety Answering Point *
Anthony Myers, Executive Director	Maryland Public Service Commission (PSC)
Tammy Price, Chief, Baltimore County 9-1-1 Center	County Public Safety Answering Point*
Scott Roper, Executive Director	Maryland 9-1-1 Board
Tony Rose, Deputy Director, Emergency Services, Charles County	Metropolitan Washington Council of Governments
Robert Sandless, Director of Budget, Treasurer, Harford County	County Purchasing and Finance*

Appointed Commission Member	Representing
Anna Sierra, Former Director Caroline County Emergency Service; Current Chief Development Officer, Maryland Department of Emergency Management	Eastern Shore Communications Alliance
Cecilia Warren, Director of Emergency Preparedness Policy	Maryland Department of Disabilities
Bardona Woods, Emergency Medical Dispatch Instructor, Priority Dispatch Corporation and retired, Director of Communications, Division of Emergency Services, Washington County	Maryland Chapter of the National Emergency Number Association (NENA)

\*Denotes Commissioners appointed by MACo

^Denotes non-voting member

The Commission is transparent to all who are dedicated to improving Maryland's 9-1-1 system. The Commission would like to thank the following individuals and other key supporters who were integral to our conversations and provided valuable input.

Table 9: Contributing Commission Support

Contributor	Representing
Chief Richard K. Brooks, III, Retired Director of Department of Emergency Services, Cecil County	Public Safety Answering Point
Ross Coates, Communication Manager, Harford County	MACo Emergency Communications Committee
Bill Ferretti, Retired Director, Montgomery County	MACo Emergency Communications Committee
William (Ernie) Jenkins, Lieutenant/Executive Officer, Police Communications Support Division	Maryland State Police
Kevin Kinnally, Legislative Director	Maryland Association of Counties (MACo)
Sean Scott, Chief Technical Officer	SecuLore Solutions
Russell Strickland, Acting Secretary	Maryland Department of Emergency Management
Legislative Staff Support	Representing
Ryan Kirby, Chief of Staff	Senator Kagan's Office

Abigail Snyder, Legislative & Communications Director	Senator Kagan's Office
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The following individuals presented at Commission meetings and/or provided guidance to the Commission.

Table 10: Commission Experts

Commission Experts	Representing
Anthony Montani, Director – E911 Engineering and Operations Global Network & Technology, Verizon	Verizon
Brian Fontes, Chief Executive Officer	National Emergency Number Association (NENA)
Brian Geraci, State Fire Marshal	Office of the Maryland State Fire Marshal
Brooke Kasoff, J.D.	University of Maryland Carey School of Law
Chris Riley, Director, Comptroller's Compliance Division	Maryland Comptroller's Office
Dan Henry, Director of Government Affairs	National Emergency Number Association (NENA)
David Furth, Deputy Chief	Federal Communications Commission
Jeff Cohen, Chief Counsel and Director of Government Relations	Association of Public-Safety Communications Officials (APCO) International
Jim Marshall, Co-Founder and Director of 9-1-1 Training Institute	9-1-1 Training Institute
Kathleen Hoke, J.D. Law Professor and Director of Network for Public Health Law	University of Maryland Carey School of Law

Mission Critical Partners, LLC (MCP) provided consulting services and subject-matter expertise in support of the Commission. The following leaders were a valuable part of the Commission's proceedings and were assigned to specific subcommittees to facilitate discussions, complete research, and manage the project.



Table 11: MCP Personnel

Staff Member	Subcommittee Assignment
John Chiamonte, PMP, ENP	Subject Matter Expert
Molly Falls, ENP	Project Manager
Sherri Griffith Powell, ENP	Finance and Structure and Oversight & Accountability
Karyn Henry, J.D.	Oversight and Accountability
Robert Horne	Technology and Cybersecurity
Joshua Jack	Technology and Cybersecurity
Nancy Pollock, ENP	Oversight and Accountability
Kyra Pulliam	Technology and Cybersecurity and Staffing & Training
Nicki Tidey, ENP	Staffing and Training

Three full Commission meetings were held in 2021 and can be viewed by clicking on the dates below. Subcommittee meetings were not live-streamed.

Table 12: 2021 Commission Meeting Links

Meeting Date	Meeting Link
Wednesday, May 5, 2021	<a href="https://bit.ly/MDNG911May2021">https://bit.ly/MDNG911May2021</a>
Thursday, September 9, 2021	<a href="https://bit.ly/MDNG911Sept2021">https://bit.ly/MDNG911Sept2021</a>
Tuesday, October 12, 2021	<a href="https://bit.ly/MDNG911Oct2021">https://bit.ly/MDNG911Oct2021</a>

## Appendix A: Glossary of Terms

Term	Definition
9-1-1 Request for Assistance	The means by which the public communicates a need for help. With the current “legacy system,” such requests have been solely via telephone with NG911, individuals will also use other methods.
9-1-1 Specialists	Professionals responsible for answering, triaging, dispatching 9-1-1 requests for assistance and the Maryland Public Information Act (MPIA) redactions. With NG911, they will be asked to manage emergency requests for service via text, video, and voice. They are often the “First, First Responders” who provide the emergency response, either directly or through communication with the appropriate law enforcement, fire, or emergency medical services (EMS) agencies.
Association of Public-Safety Communications Officials ( <a href="#">APCO</a> )	APCO is the world’s oldest and largest nonprofit professional organization dedicated to the enhancement of public safety communications.
Critical Incident Stress Management (CISM)	Crisis intervention to provide support to those who have experienced traumatic events.
Computer-Aided Dispatch (CAD)	A computer-based system that aids 9-1-1 Specialists by automating selected dispatching and record-keeping activities.
Core Service	The specific and essential functions within the 9-1-1 community. Examples include call-routing, processing, dispatching, and logging.
County	Maryland’s 23 counties and the independent jurisdiction of Baltimore City.
Customer Premises Equipment (CPE)	Communications or terminal equipment located in PSAP facilities (e.g., the 9-1-1 telephone equipment at the PSAP).
Distributed Denial of Service (DDoS)	A cyber-attack where many unique Internet Protocol (IP) addresses are used to flood the bandwidth or resources of a targeted system blocking receipt of emergency requests for assistance.
Emergency Medical Dispatch (EMD)	Refers to a system that enhances services provided by 9-1-1 Specialists by allowing them to quickly assess the caller's medical

Term	Definition
	trauma situation to appropriately dispatch emergency services and provide quality instruction to the caller before help arrives.
Emergency Services Internet Protocol (IP) Network (ESInet)	An IP-based network dedicated to public safety operations. An ESInet can route 9-1-1 calls to a PSAP and support other methods of data-sharing between public safety agencies.
Federal Communications Commission ( <a href="#">FCC</a> )	An independent U.S. government agency overseen by Congress that is responsible for implementing and enforcing America’s communications law and regulations.
Geographic Information System (GIS)	A system for capturing, storing, displaying, analyzing, and managing data and associated attributes that are spatially referenced.
Legacy Technology	For this report, “legacy technology” is the traditional 9-1-1 infrastructure currently used by many PSAPs and 9-1-1 service providers.
Local Exchange Carrier (LEC)	A company that provides the traditional telephone services (e.g., Verizon, AT&T, and CenturyLink).
Maryland 9-1-1 Board [formerly known as the Emergency Number Systems Board [ENSB]]	The entity that distributes funding and coordinates installation and enhancement of county 9-1-1 emergency systems. It issues guidelines and evaluates county plans for these systems; supports training requests; performs PSAP inspections; oversees auditing of 9-1-1 Trust Fund accounts with the Comptroller; and sets criteria for reimbursing counties.
Maryland Association of Counties (MACo)	A nonprofit, nonpartisan organization that serves Maryland’s 23 counties and Baltimore City by advocating for the needs of local governments.
Maryland Department of Emergency Management (MDEM) [formerly known as Maryland Emergency Management Agency [MEMA]]	The new Cabinet level department that provides Maryland residents, organizations, and emergency management partners with expertise, programmatic activities, and leadership supporting resiliency across Maryland.
Maryland Joint Operations Center (MJOC)	A statewide communications hub for emergency responders and local emergency management run 24x7x365 by MDEM.

Term	Definition
National Emergency Number Association ( <a href="#">NENA</a> )	NENA is a nonprofit corporation established in 1982 to further the goal of “One Nation-One Number.” NENA is a networking source and promotes research, planning, and training. NENA strives to educate; develop standards; and provide certification programs; legislative representation; and technical assistance for implementing and managing 9-1-1 systems.
Next Generation 9-1-1 (NG911)	An Internet Protocol (IP)-based system comprised of managed Emergency Services IP networks (ESInets), hardware, software, and databases that replicate traditional 9-1-1 service and enables enhanced capabilities for PSAPs (i.e., data, video, images, text).
Public Safety Answering Point (PSAP)	A center that receives 9-1-1 requests for assistance and processes them according to established protocols and operational policies.
Public Service Commission (PSC)	The Commission regulates public utilities and certain passenger transportation companies doing business in Maryland.
Swatting	The action of making a false report of a serious emergency so that a Special Weapons and Tactics (SWAT) team—a group of officers trained to deal with dangerous situations—will go to a person's home. Persons who engage in swatting want to frighten, upset, or cause problems for the person being swatted.
Telecommunicator Emergency Response Taskforce (TERT)	A team of public safety telecommunicators who respond, relieve, assist, and/or augment PSAPs affected by natural or human-caused disasters.
Telephony Denial of Service (TDoS)	An illegal attack targeting the telephone network by generating numerous 9-1-1 calls, tying up the network and preventing legitimate calls from being answered.
Transmission Control Protocol/Internet Protocol (TCP/IP)	A set of rules for communication between computers; it is also used as a standard for transmitting data over networks.

## Appendix B: Maryland NG911 Vendor Contract Status by County

The table below provides an overview of NG911 progress as of November 23, 2021, for each county in Maryland and the City of Baltimore. The counties that have selected a vendor are either finalizing procurement or implementing NG911. Those that are planning will begin procurement and select a vendor in 2022.

County	Vendor Selected
Allegany	Implementing (Motorola)
Anne Arundel	Implementing (Motorola)
Baltimore City	Planning
Baltimore County	Planning
Calvert	Live (AT&T)
Caroline	Implementing (AT&T)
Carroll	Planning
Cecil	Implementing (AT&T)
Charles	Live (AT&T)
Dorchester	Implementing (AT&T)
Frederick	Implementing (Motorola)
Garrett	Implementing (Motorola)
Harford	Planning
Howard	Implementing (Motorola)
Kent	Implementing (AT&T)
Montgomery	Live (AT&T)
Prince George's	Live (Motorola)
Queen Anne's	Implementing (AT&T)
St. Mary's	Implementing (AT&T)
Somerset	Implementing (AT&T)
Talbot	Implementing (AT&T)
Washington	Implementing (Motorola)
Wicomico	Implementing (AT&T)
Worcester	Implementing (AT&T)

## Appendix C: Workers' Compensation State Comparison and Subcommittee Measures

Based on the F&S subcommittee analysis of the principles, each criterion was color-coded “green” for inclusion, “yellow” for further evaluation, or “red” for removal from the Commission’s recommendation.

**Comparison of Workers' Compensation Precedent for Posttraumatic Stress Disorder and Mental Injuries**

STATE	Legislation includes first responder exceptions	Rebuttable presumption that employee's mental health effects are an occupational injury	Must prove injury was the result of a work-related <u>physical</u> injury	For a mental or nervous injury arising out of the employment that is not accompanied by any physical injury, only medical benefits are available	Limits benefits arising from a mental/emotional injury to:  law enforcement officers who use or are the target of deadly force in the line of duty and/or firefighters diagnosed with PTSD caused by witnessing another firefighter die in the line of duty	Mental injuries are covered in specific circumstances, but not if the mental injury results from disciplinary action, layoff, demotion or similar action was taken in good faith by the employer	Cannot receive compensation for their mental illness unless examined and diagnosed by: licensed psychiatrist or licensed psychologist	Conditions must meet requirements set in the latest issue of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM)
AL			X		X			X
CA	X	X					X	
CO						X	X	
CT					X		X	
FL	X		X	X			X	X
ID	X		X			X	X	X
KY	X					X	X	X
LA	X	X					X	X
MD		X	X					
MN	X	X				X	X	X
NH	X		X			X		
NM	X					X	X	
NY	X	X					X	
OH	X							
OR	X		X					
SC	X	X						
TX	X					X		
UT						X		
VT	X						X	
VA		X			X		X	X
WA	X	X						X
WV	X		X				X	X

## Appendix D: Hoke/Kasoff Report

### ***NARROW WORKERS' COMPENSATION FOR 9-1-1 SPECIALISTS***

#### ***THE ROLE OF THE 9-1-1 SPECIALIST***

A 9-1-1 specialist's daily work is demanding, often-harrowing, and essential to public health and safety; far more than simply relaying messages to field responders and communicating with callers.<sup>1</sup> Rather, as the first, first responder in an emergency, the 9-1-1 professional is tasked with "coding" the often ambiguous, confusing, and perhaps misleading information they receive on calls with the end goal of dispatching the information.<sup>2</sup> The 9-1-1 professional's job is to build a bridge between two distinct worlds: the every-day world in which real people unexpectedly deal with catastrophic events and the "official world" of the well-structured, highly trained, professional institutions, such as law enforcement agencies, fire departments, and emergency medical facilities.<sup>3</sup> A 9-1-1 specialist successfully and effectively bridges the two worlds by remaining a patient, empathetic, skilled, and decisive conversationalist during a caller's most vulnerable and helpless moments.<sup>4</sup>

The 9-1-1 specialist's intense engagement with both callers and field responders makes them susceptible to secondary traumatization, also known as "vicarious traumatization." Vicarious traumatization refers to the psychological impacts experienced by professionals, like therapists, who engage with the traumatized person. 9-1-1 specialists may be vicariously exposed to the trauma as it is unfolding or shortly thereafter.<sup>5</sup> Humans tend to activate the same full-blown stress response, even when their own lives are not at risk, as the person experiencing the direct trauma.<sup>6</sup> In *The Resilient 9-1-1 Professional*, Jim Marshall and

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<sup>1</sup> JIM MARSHALL & TRACEY LAORENZA, *THE RESILIENT 9-1-1 PROFESSIONAL: A COMPREHENSIVE GUIDE TO SURVIVING & THRIVING TOGETHER IN THE 9-1-1 CENTER* 15 (2018).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.* at 17.

<sup>5</sup> *Id.* at xxi.

<sup>6</sup> *Id.* at 27.

Tracey Laorenza identified the nine unique 9-1-1 risk factors that every dispatcher faces. These risks include: (1) no warning before a potentially traumatic call; (2) a lack of closure after dispatching responders to high-risk scenes; (3) telecommunicators are psychologically on-scene but physically unable to reach individuals in peril; (4) specialists “send their own” into the front line, where they may return home injured or dead; (5) limited sensory engagement with individuals on the scene; (6) high call volume and frequency; (7) the need to multi-task; (8) little to no downtime to de-stress; and (9) lack of appreciation and professional respect.<sup>7</sup> Given that many 9-1-1 specialists serve their own communities, they may take calls that involve their own family, friends, or neighbors. These risk factors negatively affect the psychological wellbeing and thus the physical health of telecommunicators.<sup>8</sup>

A 9-1-1 specialist’s continued vicarious exposure to trauma increases their risk for both depression and post-traumatic stress disorder (hereinafter “PTSD”).<sup>9</sup> PTSD is a mental health problem “triggered by a terrifying event” experienced either directly by the patient or through observation.<sup>10</sup> Onset can occur within a month after the event or sometimes even years later.<sup>11</sup> Symptoms of PTSD may include intrusive memories, including flashbacks during which an individual relives the event; avoidance of mental or verbal focus on the event or of things that bring it to mind; a negative change in feelings and beliefs; and changes in “arousal symptoms,” like irritability, overwhelming shame, self-destructive behavior, easily reacting with fear.<sup>12</sup> In fact, the prevalence of symptoms of PTSD and depression were much greater in a sample size of 171 9-1-1 telecommunicators compared to a sample of 142 trauma-

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<sup>7</sup> *Id.* at 28-37.

<sup>8</sup> *Id.* at 37.

<sup>9</sup> Lilly, M. M., & Pierce, H., *PTSD and Depressive Symptoms in 911 Telecommunicators: The Role of Peritraumatic Distress and World Assumptions in Predicting Risk*, Psychological Trauma: Theory, Research, Practice, and Policy, (Jan. 2019), 262, 262.

<sup>10</sup> Post-traumatic stress disorder (PTSD), Patient Care & Health Information, Mayo Clinic, <https://www.mayoclinic.org/diseases-conditions/post-traumatic-stress-disorder/symptoms-causes/syc-20355967> (last visited June 18, 2021).

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*; See also MARSHALL & LAORENZA, *supra* note 1 at 6.



exposed firefighters (6.4% and 3.5%, respectively).<sup>13</sup> Despite the mental health risks associated with 9-1-1 specialists, Maryland does not explicitly afford these professionals workers' compensation for mental injuries. While we expect these professionals to remain calm, composed, and execute their responsibilities in protection of the public, we fail to treat them like other first responders with respect to workers' compensation coverage.

### **MARYLAND WORKERS' COMPENSATION LAW**

Workers' Compensation Law provides a way for employees who are injured at work to receive payment for lost wages and medical expenses related to the injury.<sup>14</sup> In Maryland, an injury is covered by Workers' Compensation Law if the harm suffered by the employee was caused by an "accidental [personal] injury that arises out of and in the course of employment."<sup>15</sup> An accidental personal injury includes an "occupational disease," which is a disease contracted by a covered employee "(1) as the result of and in the course of their employment" and "(2) that causes the covered employee to become temporarily or permanently, partially or totally incapacitated."<sup>16</sup> The Act does not further define "occupational disease," but the Court in *Foble v. Knefely* further delineated the term "as some ailment, disorder, or illness which is the expectable result of working under conditions naturally inherent in the employment and inseparable therefrom."<sup>17</sup> Currently, Maryland law does not provide a presumption for mental injuries as occupational diseases. Despite 9-1-1 specialists being the first, first responders, there are no current presumptions for which telecommunicators are listed.

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<sup>13</sup> Lilly & Pierce, *supra* note 9; Meyer, E. C., Zimering, R., Daly, E., Knight, J., Kamholz, B. W., & Gulliver, S. B., *Predictors of posttraumatic stress disorder and other psychological symptoms in trauma-exposed firefighters*, Psychological Services, (2019), 1, 9.

<sup>14</sup> Humza Kazmi, Esq., *Workers' Compensation*, The People's Law Library of Maryland, <https://www.peoples-law.org/workers-compensation> (last visited June 15, 2021).

<sup>15</sup> Md. Code Ann. Lab. & Empl. § 9-101(b)(1).

<sup>16</sup> Md. Code Ann. Lab. & Empl. § 9-101(g)(1)-(2).

<sup>17</sup> 176 Md. 474, 486 (1939).

Although the Maryland Labor and Employment Code does not explicitly cover mental injuries, such as depression and PTSD, there have been cases in which the Maryland Court of Appeals determined that PTSD could be a compensable occupational disease. In *Belcher v. T. Rowe Price Foundation, Inc.*, the Court held that a mental condition can be compensable under the Workers' Compensation Act where there is no physical injury.<sup>18</sup> Belcher was employed as a secretary for T. Rowe Price Foundation, located in the top floor in downtown Baltimore's IBM building.<sup>19</sup> In 1991, a three-ton beam being hoisted by a construction crane broke loose and tumbled approximately twenty feet, crashing without warning through the thick concrete roof over Belcher's head.<sup>20</sup> The beam landed five feet from where Belcher sat at her desk. Belcher compared the sound of the crash to a bomb exploding.<sup>21</sup> As a result of the occurrence, Belcher suffered sleep disturbances, nightmares, heart palpitations, chest pain, and headaches and subsequently sought the care of a psychiatrist, who diagnosed her with PTSD as a result of the work-related incident.<sup>22</sup> The Court determined that an injury under the Workers' Compensation Act may be psychological in nature if the mental state for which recovery is sought is capable of objective determination.<sup>23</sup>

Similarly, in *Means v. Baltimore County*, the Court decided whether a claimant's PTSD, unaccompanied by physical disease, may be compensable as an occupational disease.<sup>24</sup> The Court held that if the claimant could successfully prove that her PTSD met the statutory requirements, the injury could be compensable. PTSD is not as a matter of law excluded from compensable occupational diseases and that the nonphysical nature of the claimant's injury did not per se exclude her from coverage under the Act.<sup>25</sup> The Court further explained that for the PTSD to be compensable, the disease must be (1) in accordance

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<sup>18</sup> 329 Md. 709, 711-712 (1993).

<sup>19</sup> *Id.* at 713.

<sup>20</sup> *Id.* at 714.

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* at 745-746.

<sup>24</sup> 344 Md. 661, 662 (1997).

<sup>25</sup> *Id.*

with the definition of “occupational disease” under Md. Code Ann. Lab. & Empl. § 9-101(g) and (2) the disease must be due to the nature of an employment in which the hazards of the occupational disease exist, as required by Md. Code Ann. Lab. & Empl. § 9-502(d)(1)(i). The limitations imposed by § 9-502(d) seek to ensure that only those diseases directly caused by the employment are compensable.<sup>26</sup> The Court concluded that the claimant’s alleged PTSD may be reasonably characterized as due to the general character of her employment as a paramedic.<sup>27</sup> Means had to prove that the mental injury she suffered was due to the nature of her profession as a paramedic and that employment as a paramedic entails the risk of developing PTSD.<sup>28</sup>

As exemplified in *Means v. Baltimore County*, Maryland Workers’ Compensation law does not have a *presumption* that a first responder’s PTSD arose out of and occurred in the course of their employment. A presumption has “the effect of placing upon the opposing party the burden of establishing the nonexistence of the presumed fact, once the party invoking the presumption establishes the basic facts giving rise to it.”<sup>29</sup> Instead, first responders in the majority of states are required to provide specific evidence of the causal relationship between their PTSD and their job.<sup>30</sup> The obligation to provide specific evidence of the causal relationship leads to litigation, which is costly, risky, and time-consuming. Establishing a presumption for mental injuries in the Maryland Labor and Employment Code for 9-1-1 specialists would give them the support they need to focus on recovery and would relieve some of the financial burden the telecommunicator and their family may experience at that time.<sup>31</sup>

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<sup>26</sup> *Davis v. Dyncorp*, 336 Md. 226, 236 (1994).

<sup>27</sup> *Means*, 344 Md. at 671.

<sup>28</sup> *Id.* at 675 (1997)

<sup>29</sup> FRE 301, Presumptions in Civil Cases Generally, (Pub. L. 93-595, §1, Jan. 2, 1975, 88 Stat. 1931; Apr. 26, 2011, eff. Dec. 1, 2011.)

<sup>30</sup> Caitlin Dryden, PUTTING MENTAL HEALTH ON THE FRONTLINE: WHY MENTAL INJURIES IN FIRST RESPONDERS SHOULD BE COVERED THROUGH WORKERS’ COMPENSATION, Drexel L. Rev., (Sept. 2020)

<https://drexel.edu/law/lawreview/blog/overview/2020/September/putting-mental-health-on-the-front-line/>.

<sup>31</sup> Dr. John Violanti, *PTSD among Officers: Impact on Critical Decision Making*, U.S. DEP’T OF JUSTICE: DISPATCH (May 2018), <https://cops.usdoj.gov/html/dispatch/05-2018/PTSD.html>.

### ***OTHER STATES' WORKERS' COMPENSATION LAWS***

In light of the evidence of trauma caused by the 9-1-1 specialists' job, these professionals should have broader access to workers' compensation benefits for the mental injuries they often suffer. To achieve this, Maryland should model its Workers' Compensation Laws after Colorado and Oregon. In 2018, Colorado expanded workers' compensation benefits to employees suffering PTSD and who witnessed certain kinds of traumatic events, even when they're part of the employee's usual work experience.<sup>32</sup> In 2020, the State extended those benefits to workers who endured a "psychologically traumatic event," which was "within a worker's usual experience only when the worker is diagnosed with post-traumatic stress disorder by a licensed psychiatrist or psychologist after the worker experienced exposure to one or more of the following events:

[1] The worker visually or audibly, or both visually and audibly, witnesses a death, or the immediate aftermath of the death, of one or more people as the result of a violent event; or [2] The worker repeatedly and either visually or audibly, or both visually and audibly, witnesses the serious bodily injury, or the immediate aftermath of the serious bodily injury, of one or more people as the result of the intentional act of another person or an accident."<sup>33</sup> This clearly could apply to 9-1-1 specialists.

The Oregon Revised Statute, § 656.802, defining "occupational disease" as applied to workers' compensation benefits was amended to provide a presumption of compensability for diagnosed PTSD or acute stress disorder sustained by first responders. First responders are defined as a full-time paid firefighter, emergency medical services provider, police officer, corrections officer or youth corrections officer, emergency dispatcher or a 9-1-1 emergency operator.<sup>34</sup> Therefore, the presumption does not apply to part-time first responders. As defined in the statute, "occupational disease" means "any disease or

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<sup>32</sup> Joyce Famakinwa, *Colorado Senate passes bill expanding workers comp for PTSD*, Business Insurance, <https://www.businessinsurance.com/article/00010101/NEWS08/912312987/Colorado-Senate-passes-bill-expanding-workers-comp-for-PTSD> (last visited June 7, 2021).

<sup>33</sup> Colo. Rev. Stat. § 8-41-301(3)(b)(II)(B) (2021).

<sup>34</sup> Or. Rev. Stat. § 656.802(7)(B)(i) (2020).

infection arising out of and in the course of employment caused by substances or activities to which an employee is not ordinarily subjected or exposed other than during a period of regular actual employment therein, and which requires medical services or results in disability or death.”<sup>35</sup> An occupational disease which “requires medical services or results in disability” includes “[a]ny mental disorder, whether sudden or gradual in onset.”<sup>36</sup> Further, the statute states that “if a covered employee establishes through a preponderance of persuasive medical evidence from a psychiatrist or psychologist that the covered employee has more likely than not satisfied the diagnostic criteria in the DSM-5 for post-traumatic stress disorder or acute stress disorder, any resulting death, disability or impairment of health of the covered employee shall be presumed to be compensable as an occupational disease.”<sup>37</sup> Maryland should aim to model its workers’ compensation law after O.R.S. § 656.802, because of the language that explicitly provides a presumption for covered employees, though this should extend to part-time 9-1-1 specialists as well.

## CONCLUSION

Current Maryland law does not provide appropriate workers’ compensation coverage for 9-1-1 specialists who suffer from PTSD and other mental injuries as a result of doing their incredibly important job. Although a 9-1-1 specialist may be able to demonstrate that PTSD or other mental injury was caused by performing their duties, the burden of proof is significant, and the litigation can prove lengthy and expensive. A simple change in Maryland law could reflect and respect the nature of the 9-1-1 specialists’ job. The General Assembly should create a presumption that PTSD, depression, and similar mental injuries have been caused by the specialists’ work, creating a fair path to compensation.

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<sup>35</sup> *Id.* § 656.802(1)(a).

<sup>36</sup> *Id.* § 656.802(1)(a)(B).

<sup>37</sup> *Id.* § 656.802(7)(b).

*This document was prepared by Brooke Kasoff, J.D., under the supervision of Professor Kathleen Hoke, J.D., at the University of Maryland Carey School of Law.*

*June 21, 2021*

## Appendix E: 3-1-1 Documentation

The 3-1-1 Subcommittee completed important documentation that illustrates the uses of 3-1-1 and possible implementation options. These documents were discussed in NG911 Commission subcommittee meetings and were endorsed by the Commission during the September 9, 2021, meeting.

### Document 1: 3-1-1 Implementation Questions (Draft – July 2021)

1. Why does Maryland need a statewide 3-1-1 System?
  - a. Some residents and many visitors struggle to identify local government services by phone or email. 3-1-1 would provide a simple resource for use anywhere, anytime within Maryland.
2. What services would 3-1-1 provide?
  - a. Access to government services (see the list of Reasons to Call X-1-1) as well as police non-emergency calls.
3. How would 3-1-1 be different from 2-1-1
  - a. 2-1-1 focuses on health and human service needs.
  - b. 3-1-1 will focus on non-emergency public safety as well as ALL other governmental services.
4. In which Department or agency will 3-1-1 be placed?
  - a. The Maryland Department of Emergency Management (MDEM) will be the primary department overseeing this new service with critical support from the Department of Technology (DoIT).
5. What if a county already has a 3-1-1 Center?
  - a. Counties with existing 3-1-1 systems can choose to continue operating with their current platform until it is due for lifecycle replacement. This can be no more than three years after the State system launches.
  - b. Counties could continue to fund and operate their own 3-1-1 Centers in existing space utilizing the state 3-1-1 platform. They must comply with State standards.
  - c. Alternatively, these counties can shutter their centers and shift to the State-run operation, thereby eliminating or reducing their fiscal obligations.
6. Who will hire the 3-1-1 Specialists?
  - a. The State will establish hiring standards.
  - b. The State will hire and/or counties will hire personnel for their respective centers.
7. Who will train the 3-1-1 Specialists?
  - a. The State will establish minimum training standards incorporating best practices from other 3-1-1 systems and general customer service/call center practices.
  - b. The State and/or counties will train personnel for their respective centers.
8. How many 3-1-1 Centers will there be?
  - a. This is contingent on the drafting and passage of legislation for the Governor's signature, as well as the number of counties that prefer to remain autonomous.
  - b. The model, as determined by the 3-1-1 Board, should provide for survivability and sustainability.
9. What factors will be used to determine the location of State-operated 3-1-1 Centers?
  - a. Consideration will be given for office space that is already available to the government, depending on the number and location of local government partners. Telework should also be an

available option.

10. What happens to current 3-1-1 employees if a County chooses to fully join the State's 3-1-1 operations?
  - a. A transition plan will need to be developed by any County that chooses to join the State system.
11. How might this be a career path for 3-1-1 and 9-1-1 Specialists?
  - a. This will provide career enhancements for 3-1-1 Specialists who aspire to be 9-1-1 Specialists, and it provides a new opportunity for 9-1-1 Specialists.
  - b. The 3-1-1 Board should explore professional pathways between 2-1-1, 3-1-1, 5-1-1, and 9-1-1.
12. How will the State collect all of the information from each County?
  - a. The State would hire and supervise knowledge managers to verify & supplement information provided by the Counties to the statewide platform.
  - b. Counties may hire & supervise their own knowledge managers who meet statewide certification and collaborate with State knowledge managers.
13. What if 3-1-1 Specialists don't have an immediate answer to a query?
  - a. Research will be handled with follow-up to be delivered as soon as possible.
  - b. The 3-1-1 Board will set standards for response times.
14. How will we maintain quality control?
  - a. Just as the 9-1-1 Board (formerly the Emergency Number Systems Board) oversees funding and operations of our 24 emergency centers, a 3-1-1 Board would provide oversight and accountability.
15. When might 3-1-1 be available statewide?
  - a. Depending on State and Federal funding, MDEM would hope to implement and launch statewide 3-1-1 service by Fiscal Year 2025.
  - b. This would include procurement, installation, hiring, training, public education, and more.
  - c. It is anticipated that phased-in service could begin significantly earlier. (This could include 3-1-1 calling access to police non-emergency numbers and/or an information portal online prior to telephone services becoming available.)
16. Will there be an online option as well?
  - a. Yes, most 3-1-1 systems have a robust app/web form portal.
17. How will residents or visitors learn about the new statewide number and portal?
  - a. MDEM will develop and lead a coordinated public awareness campaign with local governments.
18. What if somebody calls 3-1-1 with an emergency?
  - a. Based on the situation, the caller will be directed to hang up and call 9-1-1. Alternatively, the 3-1-1 operator will perform an immediate, warm transfer to 9-1-1. (There are advantages and disadvantages to each of these two options.)
19. What happens when someone dials the wrong X-1-1 number? Can the call be transferred?
  - a. Yes. This already happens today between 2-1-1 and 9-1-1.
20. How will implementation and operation of this new service be funded? Will there be an additional fee on my phone bill?
  - a. The State is responsible for all 3-1-1 costs for the statewide program. If a County chooses to be independent, it would be responsible for the implementation and operational costs (as defined in the proposed Statewide 3-1-1 Options chart).
  - b. Federal funding may also be available.
  - c. There would be no additional fee on your phone bill.
21. How will we protect the 3-1-1 system from cyber attacks?
  - a. The 3-1-1 system will use state-of-the-art software and user training, following the guidance as



provided by the DoIT/Cyber Information Security Officer and any additional considerations from local jurisdictions' cyber officers.

- b. A backup location(s) and telework will ensure that the system is always available.

## Document 2: Statewide 3-1-1 Options (July 2021)

Nearly Final Draft Statewide 3-1-1 Options (July 2021)		
	Option A: Statewide 3-1-1 Centers	Option B: County 3-1-1 Centers within a State 3-1-1 Ecosystem
Platform (APP, Database, Primary Phone Switch, Routers)	Established and maintained by the State.	Established and maintained by the State (updating/replacing existing technology for 3-1-1 centers that currently exist at the time their current systems are due for lifecycle replacement).
Technology (End-user equipment)	State-provided equipment.	Counties must use equipment that meets State standards.
Cybersecurity	State (MDEM in partnership with DoIT**) establishes minimum standards for Cybersecurity protection and oversees training and implementation.	State (MDEM in partnership with DoIT**) establishes minimum standards for Cybersecurity protection and oversees training and implementation. Counties could enact additional Cybersecurity protections.
Personnel	Hired and funded by the State.	Counties would be responsible for hiring and funding their own 3-1-1 Specialists and 3-1-1 administrative staff.
Training	Establish minimum statewide standards.	Counties must meet minimum statewide standards but could enact more stringent requirements.
Knowledge Managers	The State would hire and supervise individuals to verify & supplement information provided by the Counties.	Counties may hire & supervise their own knowledge managers who meet statewide certification and collaborate with State knowledge managers.
Location	The State would provide sufficient space for the 3- 1-1 Specialists (Could include options for remote working).	Counties would provide sufficient space for the 3-1-1 Specialists (Could include options for remote working).
Funding	The State is responsible for all 3-1-1 costs.	Counties would pay operational costs. They would not be responsible for the platform, State knowledge managers, or other State employees.

Nearly Final Draft Statewide 3-1-1 Options (July 2021)		
	Option A: Statewide 3-1-1 Centers	Option B: County 3-1-1 Centers within a State 3-1-1 Ecosystem
Governance/ Oversight	Create a 3-1-1 Board within MDEM* to establish and maintain minimum requirements for training, equipment, interoperability, etc. The Board would ensure compliance in all 3-1-1 Centers.	MDEM* would create a 3-1-1 Board to establish and maintain minimum requirements for training, equipment, interoperability, etc. The Board would ensure compliance in all 3-1-1 Centers.

\* MDEM = Maryland Department of Emergency Management

\*\* DoIT = Maryland Department of Information

### Document 3: Reasons to Call X-1-1 (July 2021)

Reasons to Call X-1-1 (July 2021 DRAFT)			
2-1-1	3-1-1		9-1-1
<i>I need assistance.</i>	<i>I need to access government services (routed to 3-1-1 lines).</i>	<i>I need to file a police report (routed to police non-emergency lines).</i>	<i>I need emergency help now!</i>
Eviction	Trash/recycling pick-up	Noise complaint	Medical emergency
Hungry/need food	Public bus schedule	You are a victim of a crime not currently in progress	Fires
Suicide prevention	Appeal a parking ticket	Disabled vehicles	People trapped
Access to health care	Local park & recreation services	Blocked or flooded	Personal injury
Employment information	Streetlight outage	Property Damage traffic collision where there is no personal injury	Robbery/burglary
Disability assistance	Tree down in the road	To report a suspicious person, vehicle, or situation	Downed power line
Aging resources	COVID testing/vaccine site	To notify police of missing persons not thought to be in immediate or critical danger	Shooting/stabbing
Utility assistance	Pay a water bill		Gas leak
Legal & tax services	Municipality/county gov't		Bomb threat

Reasons to Call X-1-1 (July 2021 DRAFT)			
2-1-1	3-1-1		9-1-1
<i>I need assistance.</i>	<i>I need to access government services (routed to 3-1-1 lines).</i>	<i>I need to file a police report (routed to police non-emergency lines).</i>	<i>I need emergency help now!</i>
Housing/shelter information	Information on composting		Assault
Substance abuse	Requesting a new recycling bin		Active shooter
Services for veterans	Voting information		Report a drunk
Financial programs	Library hours		Suicide
Mental health services	Special event information		Report lost persons or missing persons in potential immediate danger
Housing	School closures		Found a dead body
Access to	Fireworks licenses		

## Appendix F: Senator Kagan Letter to the Fire Marshal and Fire Marshal Reply Re: Kari's Law Enforcement

The letters included in this Appendix document correspondence between Senator Kagan and Fire Marshal Geraci regarding support of Kari's Law inspections.

**CHERYL C. KAGAN**  
*Legislative District 17*  
Montgomery County

*Vice Chair*  
Education, Health, and  
Environmental Affairs Committee

Joint Audit Committee  
Joint Committee on Federal Relations



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**THE SENATE OF MARYLAND**  
ANNAPOLIS, MARYLAND 21401

September 24, 2021

Brian S. Geraci, State Fire Marshal  
Office of the State Fire Marshal  
1201 Reisterstown Road  
Pikesville, Maryland 21208

Dear Fire Marshal Geraci:

As you know, I chair the Next Generation 9-1-1 Commission which has recommended enhancements to Kari's Law. The General Assembly enacted [SB714/ HB989](#) during the 2021 session, which requires the Office of the State Fire Marshal to enforce Kari's Law in the absence of a county- or municipality-based enforcement unit. In our fourth and final year, the Commissioners want to ensure that inspections are being conducted so that anyone can dial an outside line without a prefix. I was informed that your office has not been inspecting all buildings as required by this vital public safety law.

Kari's Law was inspired by a tragic event when a mother, Kari Hunt, was murdered by her husband in Texas. Her nine-year-old daughter tried to call 9-1-1 from the hotel room, but she did not know she needed to dial 9 to get an outside line. Maryland was the first state in the nation to adopt [Kari's Law](#) in 2015. As a result, anyone, anywhere in the state (including multiline telephone systems), should be able to dial 9-1-1 without a prefix.

You stated that you were inspecting new buildings, but what are your plans for existing buildings? How are you tracking the counties that have the capacity to do it themselves, and those that need your help with inspections? What is the process for a county to request your assistance?

I would appreciate a response by September 30, 2021, with a 24 jurisdiction chart. Many thanks for your consideration and reply.

Best,

**Cheryl**

Cheryl C. Kagan  
Chair, Next Generation 9-1-1 Commission  
Vice Chair, Education, Health, and Environmental Affairs Committee  
District 17 (Rockville & Gaithersburg)

cc: President Bill Ferguson, Maryland Senate  
Sen. Edward Reilly, Maryland Senate & Next Generation 9-1-1 Commissioner  
Del. Susan Krebs, Maryland House of Delegates & Next Generation 9-1-1 Commissioner Del. Terri Hill,  
Maryland House of Delegates & Next Generation 9-1-1 Commissioner Vice Chair Steve Souder,  
Maryland Next Generation 9-1-1 Commission  
Capt. Scott Brillman, MD Next Generation 9-1-1 Commission, Oversight & Accountability Executive  
Director Scott Roper, Maryland 9-1-1 Board  
Chair Anthony Myers, Maryland 9-1-1 Board  
Director Russell Strickland, Maryland Emergency Management Agency



STATE OF MARYLAND

DEPARTMENT OF STATE POLICE

OFFICE OF THE STATE FIRE MARSHAL



Larry Hogan  
*Governor*

Boyd K. Rutherford  
*Lt. Governor*

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Pikesville, MD 21208  
410-653-8980  
Fax 410-653-8988  
Toll Free 800-525-3124

Colonel Woodrow W. Jones III  
*Secretary*

Brian S. Geraci  
*State Fire Marshal*

September 28, 2021

Senator Cheryl C. Kagan Miller  
Senate Office Building 11  
Bladen Street, Suite 2 West  
Annapolis, Maryland 21401

Dear Senator Kagan:

I am in receipt of your letter dated September 24, 2021 regarding inspections as it pertains to Kari's Law. The OSFM is responsible for fire code enforcement in 13 out of the 24 jurisdictions across the state. When we first discussed this with Richard Brooks I noted that we would add Kari's Law to the list of items we look for during an inspection for fire code compliance. I was clear at the time that inspections of facilities just to look for violations of Kari's Law would not be possible.

The OSFM does not track fire code inspections in jurisdictions outside of the responsibility of the OSFM that responsibility rests with that jurisdiction's fire marshal's office or code enforcement section. At the current time the OSFM is conducting fire code inspections of new occupancies and fire protection systems along with some existing facilities and ensuring that the phone system is compliant with Kari's Law.

To date the OSFM has conducted a total of 6,629 fire code enforcement inspections of new and existing facilities. Inspections of existing facilities are done when time permits, at the current time we do not have enough inspectors to have a regular schedule of inspections for existing facilities. The OSFM needs 10 new inspectors in order for existing buildings to be inspected on a regular basis. Any assistance you could provide in obtaining these positions would be greatly appreciated.

We do not see any requests from the other jurisdictions for assistance with fire inspections only for large scale fire investigations. Should a jurisdiction need our assistance all they have to do is call us. I have heard from some jurisdictions and know that they are enforcing Kari's Law when they are conducting fire code enforcement inspections. The OSFM is doing the best it can do at this time with the resources it has in place.

In closing, I can assure you that these inspections are being completed by my personnel if you have other information to the contrary please provide that to me so we can get that corrected. Should you have any other questions please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script, reading "Brian S Geraci".

Brian S Geraci  
State Fire Marshal



## Appendix G: Commission FCC Outage Notification Comments

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

In the Matter of	)	
	)	
Amendments to Part 4 of the Commission’s	)	PS Docket No. 15-80
Rules Concerning Disruptions to Communications	)	
	)	
Improving 911 Reliability	)	PS Docket No. 13-75
	)	
New Part 4 of the Commission’s Rules	)	ET Docket No. 04-35
Concerning Disruptions to Communications	)	

**To: The Federal Communications Commission**

**COMMENTS OF  
THE COMMISSION TO ADVANCE NEXT GENERATION 9-1-1 (NG911) ACROSS MARYLAND**

The Commission to Advance Next Generation 9-1-1 (NG911) Across Maryland (“Maryland Commission”) hereby submits its Comments in response to the Third Notice of Proposed Rulemaking (Notice)<sup>1</sup>. The Notice seeks input to guide the Federal Communications Commission (“FCC”) as it prepares to enhance the regulatory framework governing notifications of disruptions to 9-1-1 service by harmonizing notification requirements, improving the usefulness of outage notification content,<sup>2</sup> requiring service providers to keep the public informed during periods of 9-1-1 unavailability, and ensuring the accuracy of Public Safety Answering Point (PSAP) contact information.

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<sup>1</sup> See Amendments to Part 4 of the Commission’s Rules Concerning Disruptions to Communications, PS Docket No. 15-80; Improving 911 Reliability, PS Docket No. 13-75; New Part 4 of the Commission’s Rules Concerning Disruptions to Communications, ET Docket 04-35; Third Notice of Proposed Rulemaking, FCC 21-45 (2021).

<sup>2</sup> See 47 CFR § 4.5(a) (defining an “outage” as “a significant degradation in the ability of an end user to establish and maintain a channel of communications as a result of failure or degradation in the performance of a communications provider’s network”); *see also* 47 CFR § 4.5(e) (defining an outage that potentially affects 911 as an outage that meets at least one of four criteria, as described in further detail below). In this Notice, we use the terms “911 outage” and “outages that potentially affect 911” interchangeably.

The FCC also seeks comment on whether modifications to the associated reporting requirements would enhance public safety while reducing burdens on regulated entities. Section 1 of the Communications Act, as amended (Act), charges the FCC with “promoting safety of life and property through the use of wire and radio communications.”<sup>3</sup> This statutory objective and statutory authorities support the FCC’s network outage reporting and 9-1-1 reliability rules, including the proposals here.<sup>4</sup> The Maryland Commission acknowledges that in adopting this Notice, the FCC would continue its commitment to ensuring that rules—including those governing covered 9-1-1 service providers—are sufficient, necessary, and technologically appropriate,<sup>5</sup> therefore the Maryland Commission urges the FCC to move forward as soon as practical to enforce the outage notification requirements and implement an Order to allow state and local access to these vital planning and response tools.

## **I. THE COMMISSION TO ADVANCE NG911 ACROSS MARYLAND**

In June 2018, the Commission to Advance NG911 Across Maryland was authorized by the Maryland General Assembly.<sup>6</sup> With the knowledge that NG911 technology provides more accurate location information and more efficient response, the Maryland Commission became charged with studying and making recommendations about the development and implementation of a NG911 statewide emergency communications system. The Maryland Commission also examines costs for planning, testing, and operating a NG911 system using best practices, policies, and procedures for public safety telecommunications. Authorization for the Maryland Commission was slated to end June 30, 2020 but has been extended to June 30, 2022.<sup>7</sup>

Modernizing Maryland’s 9-1-1 system to include new and evolving capabilities of broadband voice and data communications is essential for the safety and security of the public as well as First Responders. Accelerated implementation of NG9-1-1 will increase compatibility with emerging communications trends, enhance the

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<sup>3</sup> 47 U.S.C. § 151.

<sup>4</sup> See *id.* §§ 154(i), 154(j) 154(o), 201(b), 214(d), 218, 251(e)(3), 301, 303(b), 303(g), 303(r), 307, 309(a), 316, 332, 403, 615a-1, and 615c. See also *Mozilla Corp. v. FCC*, 940 F.3d 1, 59-60 (D.C. Cir. 2019); *Nuvio Corp. v. FCC*, 473 F.3d 301 (D.C. Cir. 2007) (Kavanaugh, J., concurring) (citing “broad public safety and 911 authority Congress has granted the FCC” and concluding that “adequate 911 service is vital to the personal security of American citizens and the homeland security of our Nation”).

<sup>5</sup> Improving 911 Reliability; Reliability and Continuity of Communications Networks, Including Broadband Technologies, PS Docket Nos. 13-75 and 11-60, *Report and Order*, 28 FCC Rcd 17476, 1733, para. 159 (2013) (*911 Reliability Report and Order*).

<sup>6</sup> See An Act concerning Commission to Advance Next Generation 9-1-1 Across Maryland - Establishment, H.B. 634, Chapter 301 (2018).

<sup>7</sup> See An Act concerning Commission to Advance Next Generation 9-1-1 Across Maryland – Extension and Alteration, S.B. 47, Chapter 506 (2020).

flexibility and reliability of Maryland’s 9-1-1 system during major incidents, improve emergency response for the public and emergency responders, and may reduce the overall cost of operating systems across the state.

## **II. INTRODUCTION**

With over 200 million emergency calls to 9-1-1 in 2019,<sup>8</sup> systems are plausibly susceptible to outages occurring in the underlying communications network. The reliability of the 9-1-1 network is essential to all those involved in providing, overseeing, or supporting 9-1-1. When an outage originating from any source results in subscribers being unable to contact 9-1-1, the 24 PSAPs within Maryland must be informed quickly and consistently. Unfortunately, it has been their experiences that notifications are not always provided in a timely manner—if at all. The Maryland Commission is committed to enhancing public safety by ensuring that PSAPs and the public are provided with proper notification of disruptions to 9-1-1.

Currently, the FCC has different outage notification rules for carriers that serve PSAPs as covered 9-1-1 service providers, and the wireless, wireline, and Voice over Internet Protocol (VoIP) carriers that individuals use to call 9-1-1 as originating service providers. 9-1-1 outages impact the public’s ability to reach emergency responders during a crisis, and despite the local efforts and preceding FCC rules, Maryland PSAPs are not provided with what they need from most or a majority of covered 9-1-1 service providers or originating service providers. Inconsistent notification practices of telecommunications providers cause operational and communications challenges as PSAPs require expeditious and steady notification so they can react, implement alternative communications methods, and properly notify the public.

## **III. BACKGROUND**

The mission of the Maryland Commission is to strengthen 9-1-1 service within the State. For the past three years, the Maryland Commission has been working on improvements to best practices, policies, and procedures related to 9-1-1. During recent discussions, events of yet another 9-1-1 service outage again raised concerns about the timely notification to PSAPs when disruptions occur. The Maryland Commission applauds the FCC’s efforts

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<sup>8</sup> FCC, Twelfth Annual Report to Congress on State Collection and Distribution of 911 and Enhanced 911 Fees and Charges, 12-14, para. 11, Table 3 (2020), <https://www.fcc.gov/files/12thannual911feereport2020pdf>.

to consider expanding the frameworks of the Network Outage Reporting System (NORS) and the Disaster Information Reporting System (DIRS) in order to share critical communication outage information with state and applicable local 9-1-1 authorities, as appropriate; however, this system access highlights the need for enforcement of the thirty (30) minute carrier notification requirement as PSAPs are not consistently receiving immediate notification of outages impacting 9-1-1 service from wireless and VoIP carriers.

To harmonize the timing, means, and frequency of PSAP notifications for originating service providers and covered 9-1-1 service providers, all available material information—whether deemed germane or not—is required at the time of the initial notification and at the times of subsequent updates. Notwithstanding, the Maryland Commission expands our discussion to alternative requirements the FCC should consider minimizing probable burdens, if any, on PSAPs and service providers.

#### **IV. DISCUSSION**

##### **A. INADEQUATE OUTAGE INFORMATION JEOPARDIZES THE PSAP AND INCREASES RISK TO FIRST RESPONDERS AND TO THE PUBLIC**

The Maryland Commission believes the requirement for wireless and VoIP carriers to notify public safety within thirty (30) minutes of an outage is essential to protecting the public and should be required for all communities.

Without current information on the impact, mitigation efforts, anticipated time to restore, extent of the service disruption, etc. PSAPs are unaware and cannot adequately inform or prepare First Responders or the public. Unless the PSAP knows and understands the extent of impact, or what to inform their citizens, they are operating in a proverbial vacuum. Misinformation is almost as dangerous and confusing as no information.

Messaging to properly inform constituents and First Responders of the extent of the service disruption can protect responders and improve response services.

##### **B. ACCESS TO NORS AND DIRS HAS SIGNIFICANT PUBLIC SAFETY BENEFITS**

The Maryland Commission agrees with the FCC that sharing NORS and DIRS information with state and federal agencies—in a manner that preserves the confidentiality of that information—would provide important public safety benefits.

Increased situational awareness assists local communities in maintaining continuity of service and ensures their public has confidence in the ability to contact emergency services.

**C. SERVICE DISRUPTION INFORMATION HAS OPERATIONAL IMPACTS FOR 9-1-1**

DIRS filings contain timely information about the operational status of service providers' networks and the associated infrastructure equipment needed by PSAPs during disaster conditions.

DIRS filings reflect a snapshot of whether specific service provider infrastructure equipment is running on backup power or out of service, as well as the operational status of PSAPs. This is critical information supports PSAP efforts to plan and prepare for continued operations.

As experienced in past communications outages situations, information indicating which counties have a large percentage of cell towers out of service can provide local and state authorities the situational awareness needed to appropriately address 9-1-1 communications needs in the affected areas while keeping all informed.

**D. DELAYED OR PARTIAL INFORMATION ON OUTAGES RESTRICTS THE ABILITY OF THE PSAP TO EFFECTIVELY ADDRESS THE OUTAGE FOR ALL POPULATIONS, PARTICULARLY FOR VULNERABLE RESIDENTS**

When the PSAP does not get timely or complete notification of outages, they cannot effectively initiate alternate means of communication and provide access for those populations impacted by the outage.

Public service messaging, crisis communications options, and back-up operations all require time to activate. When the PSAP is not informed in a thorough or punctual manner, their ability to trigger alternative methods for their populations to contact emergency services is severely compromised.

**E. NEED TO SAFEGUARD CONFIDENTIAL DATA**

NORS filings contain timely information on communications service disruptions or outages impacting a provider's network and may include useful information about the operational status of communications services or 9-1-1 elements that have been affected, as well as incident date, time, and location details.

Public safety should be required to meet all requirements with appropriate and sufficient safeguards to protect confidentiality of information and the protection of the carrier's data.

## **V. CONCLUSION**

One of the ways the FCC oversees the integrity of 9-1-1 communications infrastructure is by requiring service providers to report network outages to the FCC and PSAPs. The Maryland Commission supports establishing consumer notification procedures for 9-1-1 unavailability but permitting that notification up to sixty (60) minutes after determining the outage—by providing information on service provider websites and internet-related applications—is unsatisfactory. While concurring with the FCC’s finding that sharing NORS and DIRS data with state, local, and federal agencies would best serve the public interest, the Maryland Commission asks the FCC for notification enforcement, with swift action in making access obtainable, so the public and 9-1-1 community can be adequately protected.

**Respectfully submitted,**

**The Commission to Advance NG911 Across Maryland**

**By: /s/ Cheryl C. Kagan  
Sen. Cheryl C. Kagan  
(District 17)  
Chair, Maryland NG911 Commission**

**/s/ Steve Souder  
Steve Souder  
Member at-Large, Maryland 9-1-1 Board  
Vice Chair, Maryland NG911 Commission**

**Date: July 20, 2021**

## Appendix H: Commission Letter to FCC Supporting Real-Time Text

**CHERYL C. KAGAN**  
*Legislative District 17*  
Montgomery County

*Vice Chair*  
Education, Health, and  
Environmental Affairs Committee

Joint Audit Committee  
Joint Committee on Federal Relations



**THE SENATE OF MARYLAND**  
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September 13, 2021

Ms. Marlene H. Dortch  
Federal Communications Commission  
Office of the Secretary  
45 L Street NE  
Washington, DC 20554

Dear Ms. Dortch:

Maryland's Next Generation 9-1-1 Commission has reviewed the transition from Teletype to Real-Time Text Technology. As Chair of the Commission, I would like to offer our unanimous support for the use of Real-Time Text Technology to ensure that anyone has access to this critical service.

### **BACKGROUND**

In Title 47, Chapter I, Subchapter B, Part 67, the FCC<sup>1</sup> established rules to support the transition from Teletype (TTY) to Real-Time Text Technology (RTT) by allowing, but not requiring, action in cases where TTY technology was not technically feasible to accomplish RTT.

RTT is a reliable and interoperable universal text solution over wireless Internet Protocol (IP) enabled networks for people who are deaf, hard-of-hearing, deaf-blind or have speech challenges.<sup>2</sup> RTT allows text characters to be sent as they are being created and can be sent simultaneously with voice, permitting the use of off-the-shelf end-user devices to make text telephone calls. In other words, RTT is a modern replacement for TTY communications and is backward-compatible with TTY technology.

Through its rulemaking, the FCC took a major step toward enabling a universal and integrated text solution for people with disabilities who rely on text communications for emergency services as well as everyday communications. It also gave hope to the disability community that its communications needs were going to be addressed and setting them on a path to benefit from the features and functionality of NG911 technology. Despite deadlines imposed by the FCC for wireless service providers and device manufacturers to support RTT, carrier implementation of the network infrastructure necessary to deliver RTT has not been completed. Progress has been slow, with too many waivers granted, which has delayed equitable services.

### **REQUIREMENTS ESTABLISHED with PHASED DEADLINES**

The FCC established deadlines and a phased approach for carrier compliance based on service type allowing smaller carriers more time to implement RTT support on their networks and larger carriers, with ever-changing and improving networks a more aggressive, while totally reasonable, timeline.

Sensitivity to the need to manage expectations that allowed for phasing-in requirements as well as a “Safe Harbor” for carriers to manage priorities and investment in infrastructure was admirable. But, now most RTT deadlines have passed; demonstrated progress by carriers is not as robust as was anticipated or hoped.

### **TIMELINES, WAIVERS, AND PERMISSIONS VS. REQUIREMENTS**

Wireless Service Providers that do not currently support RTT communications over IP networks and those that have been granted waivers to the rules must continually inform their customers, through effective and accessible channels of communication, that: 1) TTY communications are not supported on IP networks; 2) the date by which RTT will be usable on their network for calls to 9-1-1; 3) alternative public switched network (PSTN)-based and IP-based accessibility solutions for people with communication disabilities to reach 9-1-1 services.

The waiver recipients must provide regular reporting regarding their progress and status of the availability of RTT calls to 9-1-1. This regularly updated notification to the public should be mandatory to provide transparency and establish greater public visibility into when widespread support for RTT will occur.

**In the Commission’s<sup>3</sup> opinion, RTT must become a priority so that the deaf, hard-of-hearing, and speech-impaired community are provided true parity of service in the communication method of their choosing.**



## **SUMMARY AND REQUEST OF THE COMMISSION**

The Commission is committed to ensuring equal access to 9-1-1 services for all Marylanders. We acknowledge that RTT is a superior accessibility technology to TTY communication services; s compatible with NG911 and telecommunications relay services; and, unlike TTY, functions over IP based networks.

Clearly, RTT allows instant transmissions and the improved delivery of messages, and it is the text alternative that is the most functionally equivalent to voice communication.

RTT messages are immediately conveyed to and received by the recipient as the message is being composed, as compared to all other text-based messaging services, which require parties to press a key to transmit the message, wait for the transmission, and then wait for the receiver of the message to compose a reply. This functionality enables the RTT user to see what the other person is typing and begin developing a response before the entire message has been conveyed. This capability also lets an RTT user know that the other party is indeed responding to the message, which allows for a more direct exchange of information and avoids confusion, crossed answers, and errors. These features are particularly compelling in the context of emergency calls to 9-1-1, and for this reason, we urge the Commission to take action to advance progress toward RTT implementation now that five years have been allowed for the transition.

Specifically, the Commission urges the FCC to:

- Stop granting waivers and start enforcing deadlines. The list of waivers is long, and little progress has been identified.
- Require a statement from the carriers on when they will be ready to comply with requirements to support RTT.

In closing, we eagerly await word from the FCC on the changes to ensure equitable access to life-saving services. Thank you for your consideration of this critically important issue.

Best,

***Cheryl***

Cheryl C. Kagan  
Maryland State Senator, District 17  
Vice Chair, Education, Health, and Environmental Affairs Committee  
Chair, Next Generation 9-1-1 Commission

cc: Lisa M. Fowlkes, Bureau Chief, FCC Public Safety and Homeland Security Bureau  
David Furth, Deputy Chief, FCC Public Safety and Homeland Security Bureau

<sup>1</sup> Federal Communications Commission

<sup>2</sup> In the FCC proceeding, they refer to people who are deaf, hard of hearing, deaf-blind, or have a speech disability collectively as “people with disabilities” or “text-reliant users”

<sup>3</sup> Maryland Next Generation 9-1-1 (NG911) Commission

## Appendix I: 9-1-1 Specialist Salary for Each Maryland County

County/City	Starting Salary	Salary After Two (2) Years on the Job	Actual Average Salary
Allegany County	\$ 34,234.00	\$ 37,648.00	\$ 38,796.00
Anne Arundel County	\$ 41,891.00	\$ 43,992.00	\$ 47,601.00
Baltimore City	\$ 46,074.00	\$ 48,194.00	\$ 50,001.00
Baltimore County	\$ 43,584.00	\$ 48,050.00	\$ 43,254.00
Calvert County	\$ 36,920.00	\$ 45,760.00	\$ 51,206.00
Caroline County	\$ 34,438.00	\$ 36,288.00	\$ NA
Carroll County	\$ 39,604.00	\$ 43,160.00	\$ 38,406.00
Cecil County	\$ 31,761.91	\$ 35,018.45	\$ 30,755.00
Charles County	\$ 40,824.00	\$ 45,869.00	\$ 47,363.00
Dorchester	\$ 36,960.56	\$ 38,831.69	\$ 36,640.00
Frederick County	\$ 42,141.00	\$ 46,155.00	\$ 55,796.00
Garrett County	\$ 34,320.00	\$ 36,376.00	\$ 39,041.00
Harford County	\$ 33,415.00	\$ 38,046.00	\$ 33,415.00
Howard County	\$ 45,449.00	\$ 49,992.00	\$ 53,373.00
Kent County	\$ 42,380.00	\$ 46,810.00	\$ 38,135.00
Montgomery County	\$ 41,971.00	\$ 54,402.00	\$ 68,236.00
Prince George's Co	\$ 38,324.00	\$ 40,240.00	\$ 49,092.00
Queen Anne’s Co	\$ 40,813.00	\$ 46,464.00	\$ 43,366.00
St. Mary's County	\$ 41,433.60	\$ 48,651.20	\$ 44,158.00
Somerset County	\$ 37,406.00	\$ 40,283.00	\$ 35,664.00
Talbot County	\$ 42,656.51	\$ 44,332.81	\$ 35,513.00
Washington County	\$ 39,055.00	\$ 43,196.00	\$ 61,131.00
Wicomico County	\$ 33,075.00	\$ 33,975.00	\$ 36,724.00
Worcester County	\$ 32,115.00	\$ 37,170.00	\$ 38,434.00
Average	\$ 38,785.23	\$ 42,871.01	\$ 44,094.00

Source: The 2021 MACo *Report of County Employee Salaries, Health Benefits & Pensions*;  
<http://mdcounties.org/DocumentCenter/View/4384/Final-full-survey>

# Appendix J: Maryland 9-1-1 Specialist Demographic Information

The table below provides demographic information for 9-1-1 Specialists in each of Maryland’s 24 PSAPs as of September 30, 2021.

9-1-1 Specialists by PSAP	Number of Employees (Report employees in only one category)														
	Hispanic or Latino		Not Hispanic or Latino												
	Male	Female	Male						Female						
			White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	Total
Allegany County			11						9	1					21
Anne Arundel County	1		14	2					47	9	1	1			75
Baltimore City		1	2	12					7	60					82
Baltimore County		1	48	4					81	41		2	2		179
Calvert County	1		4						20	1					26
Caroline County			13						7						20
Carroll County			23						17		1				41
Cecil County	14	20	14						17	1		1		1	68
Charles County	18	35	18						32	3					53
Dorchester County			8						8	1				1	18
Frederick County	1	1	26						48	1				2	79
Garrett County			4						6						10
Harford County			21			1			46	1					69
Howard County		1	18						32	12		1		1	65

9-1-1 Specialists by PSAP	Number of Employees (Report employees in only one category)														
	Hispanic or Latino		Not Hispanic or Latino												
	Male	Female	Male						Female						
			White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	Total
Kent County	8	5	8						5						26
Montgomery County	3	14	20	10		4		1	39	29		2			122
Prince George’s County	3	4	24	16				3	48	66		2	2	4	172
Queen Anne’s County			15						6						21
Somerset County			4	3					5	1					13
St Mary’s County		2	14	2					14	1					33
Talbot County	1		11						12						24
Washington County	2		15						29	1					47
Wicomico County			8					1	9	1				1	20
Worcester County			6						12	1					19
<b>Totals</b>	<b>52</b>	<b>84</b>	<b>349</b>	<b>49</b>		<b>5</b>		<b>5</b>	<b>556</b>	<b>291</b>	<b>2</b>	<b>9</b>	<b>4</b>	<b>10</b>	<b>1303</b>