



**EMERGENCY
NUMBER
SYSTEMS BOARD**

9-1-1

**ANNUAL REPORT
2016**

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DEPARTMENT OF PUBLIC SAFETY AND CORRECTIONAL SERVICES



STATE OF MARYLAND

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May 1, 2016

Secretary Stephen T. Moyer
Department of Public Safety and Correctional Services
300 East Joppa Road - Suite 1000
Baltimore, MD 21286

Dear Secretary Moyer:

I am pleased to provide you with the Annual Report of the Emergency Number Systems Board (ENSB or Board) for Fiscal Year 2016. The Board has convened monthly, and more frequently in sub-committees, to consider a variety of 9-1-1 related issues and projects. The attached report outlines the collective efforts of the Board and the larger 9-1-1 community in making Maryland a safer place for its residents, businesses and visitors.

Maryland continues to benefit from an effective 9-1-1 system. Recent Board statewide efforts include working with Verizon, Maryland PSAP personnel and the Maryland Public Service Commission to review the implementation of policies and standards adopted by the Federal Communications Commission and ENSB to minimize disruptions to 9-1-1 service caused by power outages and network failures. Ongoing Board activities include providing a vigorous 9-1-1 training program throughout the state, working with vendors to improve 9-1-1 service delivery, and continuing research, planning and implementation of "Next Generation" technologies.

The Board remains focused on the enhancement of 9-1-1 and the critical role it plays in public safety. On behalf of the members of the Emergency Number Systems Board and the more than nine hundred call takers around the State, I thank you for your support and the diligent assistance your staff routinely provides.

The attached document and appendices constitute the 2016 Annual Report of the Emergency Number Systems Board as required by the Public Safety Article.

Sincerely,



Anthony Myers, Chairman
Emergency Numbers Systems Board

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INTRODUCTION

ENSB MISSION STATEMENT

THE EMERGENCY NUMBER SYSTEMS BOARD WORKS COOPERATIVELY WITH THE COUNTIES TO PROVIDE AN EFFECTIVE AND EFFICIENT MARYLAND 9-1-1 SYSTEM THROUGH THE ADMINISTRATION OF THE 9-1-1 TRUST FUND REVENUES.

The Board achieves its goals through implementation of the following principles:

ENSB VISION STATEMENT

THE EMERGENCY NUMBER SYSTEMS BOARD IS DEDICATED TO ENSURING MARYLAND'S 9-1-1 SYSTEM REMAINS ROBUST AND RESPONSIVE TO THE PUBLIC-SAFETY NEEDS OF OUR CITIZENS AND VISITORS. THE BOARD IS COMMITTED TO PROVIDING FISCALLY RESPONSIVE FUNDING TO MAINTAIN A TECHNOLOGICALLY ADVANCED 9-1-1 SYSTEM STAFFED WITH APPROPRIATELY TRAINED EMERGENCY OPERATORS. THROUGH A PARTNERSHIP WITH THE 9-1-1 COMMUNITY, THE BOARD WILL PROVIDE LEADERSHIP AND GUIDANCE FOR MARYLAND TO BE RECOGNIZED NATIONALLY FOR EXCELLENCE IN PROVIDING 9-1-1 SERVICE.

The Emergency Number Systems Board's (ENSB or Board) duties are defined by Sections §1-301 through §1-314 of the Public Safety Article of the Annotated Code of Maryland. Further clarity of direction and explicit responsibilities of the Board are provided in the Code of Maryland Regulations (COMAR) Title 12, Subtitle 11, Chapter 03. Those duties include coordinating the enhancement of County 9-1-1 systems and the oversight of the 9-1-1 Trust Fund. This report details the activities of the Board during calendar year 2016 and Trust Fund expenditures of fiscal year 2016 (July 1, 2015 to June 30, 2016).

The Public Safety Article requires that the following six topics be included in the annual report:

1. Types of 9-1-1 Systems in Operation	Page 16
2. Total State and County Fees Charged	Page 24
3. Funding Formula in Effect by County	Page 23
4. Statutory or Regulatory Violations by County	None Noted
5. Efforts to Establish an Enhanced 911 System	Page 16
6. Any Suggested Changes to this Subtitle	Page 9

This report goes significantly beyond these six areas in an effort to provide additional understanding into the work of the Emergency Number Systems Board. As the communications industry introduces new technological enhancements, Maryland's 9-1-1 system continues to evolve to ensure that Maryland's citizens and visitors are afforded a robust and responsive system when they call 9-1-1.

The current direction of the Board is to evaluate and fund local, regional, and statewide plans for enhancements consistent with the Public Safety Article, Board guidelines, the availability of 9-1-1 Trust Fund dollars, and technological advancements. The Board is examining the following current issues:

- Integrating "Next Generation (NG)" Internet Protocol (IP) based 9-1-1 service delivery of voice, text, data, and video messaging into the 9-1-1 System;
- Examining current local and national policies, standards, and legislation to identify best practices evolving from governance, planning, regulatory, policy, and funding issues arising from a statewide transition to a NG 9-1-1 environment;
- Working with our 9-1-1 System service providers to establish standards, policies and procedures that will enhance the redundancy, resiliency and survivability of 9-1-1 service in Maryland;
- Funding emergency dispatch protocol training and software enhancements that promote the standardization of 9-1-1 call processing throughout the state;
- Exploring advancements in geographical information systems (GIS) to enhance 9-1-1 related mapping, caller location, prioritized call answering, and emergency response routing methodologies;
- Implementing remote 9-1-1 workstations at secondary PSAPs to provide enhanced caller information associated with transferred 9-1-1 calls; and
- Examining technological advancements that permit regional sharing of 9-1-1 related equipment for call delivery to primary, back-up, and secondary PSAPs in an IP network environment.

The engagement of local leadership has created a positive and constructive working relationship among Maryland's PSAP community, its legislative delegations, its first responder community, and the Department of Public Safety and Correctional Services to collectively address these issues.

Questions regarding this report and its content should be forwarded to the ENSB Office of the Executive Director at 300 E. Joppa Road – Suite 1000, Towson, Maryland 21286.

The ENSB web site is: www.dpscs.maryland.gov/ensb

EXECUTIVE SUMMARY

Maryland's Public Safety Article §1-305 defines the membership of the seventeen member Emergency Number Systems Board. Board members are drawn from private and public sectors representing various aspects of public safety and the people they serve. The current membership of the Board includes a diverse group of police, fire, emergency management, regulatory, and communications industry professionals. The members serve a Governor appointed, Senate confirmed four-year term without compensation. While only required to meet quarterly, the ENSB meets at least monthly to examine current trends and funding needs of Maryland's Public Safety Answering Points (PSAP).

The existing 9-1-1 infrastructure has performed admirably for decades; however, new data rich communications devices and services are driving the existing 9-1-1 infrastructure towards its operational limits. Consumers are increasingly relying on enhanced wireless and IP-based communications technologies, which offer expanded data capabilities such as text, picture and video messaging. Many public-safety related service providers are also seeking to share crash notification data, personal health, family, and other pertinent records with emergency responders utilizing the 9-1-1 system.

The Board continues to monitor and study national standards surrounding the development of Next Generation 9-1-1 system elements that would capture the benefits of expanding mobile and data communications technologies, as well as continuing to provide or enhance existing 9-1-1 functionality.

Some of the more prominent achievements and current activities of the ENSB include:

- Developing technical requirements and defining the costs associated with the delivery and processing of Next Generation 9-1-1 services (NG 9-1-1) to our primary and secondary PSAPs;
- Working with PSAP personnel, Verizon and other carrier representatives to review circumstances surrounding 9-1-1 service disruptions, augment notification procedures, improve customer service issues, and seek enhancements that will improve Maryland's 9-1-1 Systems;
- Providing funding to upgrade and refresh 9-1-1 enhanced IP enabled phone systems for four (4) primary PSAPs and four (4) back-up PSAPs;
- Providing back-up power equipment (generator and/or UPS) for two (2) primary PSAPs;
- Requiring and funding "power monitoring systems" for PSAPs, which will provide PSAP personnel with a visual and audible alert when changes occur affecting the PSAP's current power source (commercial, generator or UPS battery power).
- Providing ongoing training on new 9-1-1 technologies and evolving 9-1-1 service delivery techniques by offering 91 training sessions attended by 1613 students;
- Securing statewide regulatory compliance through annual PSAP inspections;

- Interacting with federal agencies and national organizations to study evolving 9-1-1 issues, develop service standards, understand the impact of social media, and explore funding resources;
- Encouraging counties to secure additional funding resources to augment the 9-1-1 Trust Fund; and
- Assisting Maryland counties to update and maintain the accuracy of their mapping capacity by providing new ortho-photography, which is being renewed on a three year cycle.

To further facilitate the execution of the mission of the ENSB, the Board established several sub-committees comprised of Board members and supporting consultative membership from outside the Board. These subcommittees include:

- **Training and Education** – to provide and enhance entrance level and in-service training opportunities for 9-1-1 call takers;
- **Policy/Standards** – to recommend policy and funding guidance for ENSB membership and PSAP Directors and to make recommendations for Legislative changes; and
- **Technology** – to investigate and educate the Board on current and future technological advancements impacting the delivery of 9-1-1 services.

By statutory requirement, the Board also enjoys membership and actively participates on the following Maryland Board:

- **Statewide Emergency Medical Systems Advisory Council (SEMSAC)** – to assist the SEMSAC Board, comprised of representatives from organizations involved in providing emergency medical care services.

The ENSB remains committed to enhancing Maryland’s 9-1-1 system and taking advantage of proven technological advances in service delivery. Maryland continues to be a national leader in providing enhanced emergency wireline, wireless, and VoIP services. With the advancements made in IP based telephony equipment, Maryland is again poised to embrace a new technology and work towards a smooth transition as Next Generation 9-1-1 system and related service is realized.

PUBLIC SAFETY ARTICLE

The Maryland Public Safety Article (Title-1, Subtitle-3) is the enabling legislation that established the 9-1-1 Trust Fund and the Emergency Number Systems Board. It was originally crafted to create a funding mechanism and oversight Board to provide for the orderly installation, maintenance and operation of 9-1-1 systems in Maryland, and to establish the three-digit number, 9-1-1, as the primary emergency telephone number to summon emergency assistance. The Public Safety Article remains responsive to the needs of the Maryland's citizens.

The legislation established the Maryland 9-1-1 Surcharge, derived from a monthly surcharge levied on each telephone bill, to provide a constant funding source for enhancing and maintaining Maryland's 9-1-1 system. The 9-1-1 Surcharge was initially comprised of two separate fees designated to offset 9-1-1 related capital and operational costs. The first portion of the Maryland 9-1-1 Surcharge is the "9-1-1 State Fee." The State Fee is distributed to the Maryland counties at the discretion of the Emergency Number Systems Board in response to county 9-1-1 system enhancement requests. The level of the second portion of the "Additional Charge" is determined by each county through local resolution. The Public Safety Article limits the Additional Charge to a maximum of \$0.75. Legislation requires that the amount of the Additional Charge received may not exceed a level necessary to cover the total eligible maintenance and operation costs of the county. The Public Safety Article further defines that maintenance and operation costs may include telephone company charges, equipment costs, equipment lease charges, repairs, utilities, personnel costs, and appropriate carryover costs from previous years. To ensure compliance, the Board provides for an audit of each county's expenditures for the maintenance and operation of the county's 9-1-1 system. All Maryland counties have taken advantage of this legislative authority and have passed local resolutions establishing an Additional Charge.

In 2003, the Public Safety Article was updated to provide the mandate and fiscal support for Maryland's 9-1-1 call takers to receive the callback phone number and location information of wireless callers (defined as "enhanced wireless 9-1-1"). This milestone was achieved in June 2005 when Maryland became only the eighth state in the nation to receive and display enhanced wireless information at all primary Maryland PSAPs when available from a wireless carrier.

The 2003 revisions also expanded the definition of "9-1-1 accessible service" to include "telephone service or another communications service that connects an individual dialing the digits 9-1-1 to an established public safety answering point." This new definition expanded the communication service providers required to collect and remit the 9-1-1 surcharge to include carriers utilizing Voice over Internet Protocol technology (VoIP) for voice connectivity to 9-1-1 centers.

In 2008, this legislation was revised to increase the membership of the Board from 15 to 17 members. Responding to technological advancements in geographical information

systems (GIS) and the integration of wireless location technology into the 9-1-1 system, this legislation established a new Board position to represent Maryland's GIS community. Since 2001, the role and capacity of local emergency management services (EMS) and nationwide homeland security efforts have increased significantly. Because 9-1-1 plays a vital role in identifying incidents where emergency management services are to be deployed, the Public Safety Article was amended to increase the emergency management services representation on the Board from one to two positions.

In 2012, this legislation was expanded to include a definition of Next Generation 9-1-1 services as an Internet Protocol (IP) based system comprised of hardware, software, data, and operational policies and procedures, that:

- provides standardized interfaces from emergency call and message services to support emergency communications;
- processes all types of emergency calls, including voice, text, data, and multimedia information;
- acquires and integrates additional emergency call data useful to call routing and handling;
- delivers the emergency calls, messages, and data to the appropriate public safety answering point and other appropriate emergency entities;
- supports data or video communications needs for coordinated incident response and management; and
- provides broadband service to public safety answering points or other first responder entities.

This legislative change also tasked the Board with establishing planning guidelines for next generation 9-1-1 services system plans and deployment of next generation 9-1-1 services in accordance with this subtitle.

In 2012, Senate Bill 1301 changed how 9-1-1 Trust Fund interest is to be accrued. The new language amended the State Finance and Procurement Article Section §6-226 to include that "net interest on all State money allocated by the State Treasurer under this section to special funds or accounts, and otherwise entitled to receive interest earnings, as accounted for by the Comptroller, shall accrue to the General Fund of the State."

In 2013, Senate Bill 745 codified a third portion of the fee by extending the collection of the Maryland 9-1-1 Surcharge Fee (\$0.60 per transaction) to the sales of pre-paid wireless service to be collected at the point of sale (Maryland Pre-Paid Wireless E9-1-1 Fee). The amounts collected in this manner, minus a processing fee retained by retailers (3%), are deposited to the State's 9-1-1 Trust Fund. The Maryland Pre-Paid Wireless E9-1-1 Fees collected will be utilized to fund 9-1-1 enhancement projects and offset PSAP recurring operational and maintenance costs in the same fashion as currently collected 9-1-1 fees.

In 2015, Senate Bill 576 (cross-filed with House Bill 1080) required those who own or maintain a multi-line telephone system (MLTS) allow for the direct dialing of 9-1-1 without having to take an additional step to access the public switch telephone network

(PSTN). On December 1, 2013 Kari Rene Hunt was ambushed and murdered in a Texas hotel room by her estranged husband. When Kari's nine year old daughter attempted to call 9-1-1 from the hotel room's telephone, which part of the hotel's MLTS, she could not reach help because she was not aware of the requirement to dial "9" for an outside line. As a result, she was unable to obtain lifesaving assistance for her mother. According to the National Association of State 9-1-1 Administrators, Maryland is the first state to pass this legislation, which is known nationally as "Kari's Law."

The Public Safety Article is sufficient in its current content to be responsive to the needs of Maryland's 9-1-1 community and no further changes are recommended.

THE CODE OF MARYLAND REGULATIONS

The Code of Maryland Regulations (COMAR) Title 12, Subtitle 11, Chapter 03 further codifies the activities of the Board, and describes in detail its essential functions, responsibilities and training standards. Previous recommendations made by the Emergency Number Systems Board's Policy Subcommittee for updating COMAR were adopted. Significant updates include:

- Redundant wording of items appearing in COMAR that were verbatim to the Public Safety Article were removed and language added to reference the reader back to the appropriate section of the Public Safety Article;
- The Board requires a majority of confirmed members to be present at a meeting to constitute a quorum;
- PSAPs shall provide access to services for individuals who do not speak or understand the English language¹;
- PSAPs shall have sufficient call takers and equipment to consistently answer incoming calls on a daily average of 10 seconds or less²;
- Within six months of hiring a Public Safety Answering Point call taker, a county shall train the new call taker using a curriculum adopted or approved by the Board³;
- A county shall provide a Public Safety Answering Point call taker with yearly in-service training using a curriculum adopted or approved by the Board²; and
- In requesting funding from the Board, the county shall ensure that the county's procurement laws and policies are followed.

COMAR is sufficient in its current content to be responsive to the needs of Maryland's 9-1-1 community and no further changes are recommended.

¹ All PSAPs provide immediate language assistance to persons who are limited in English proficiency through contractual translation services.

² Through the annual inspection process, all PSAPs were found to be compliant.

HISTORY OF 9-1-1 IN MARYLAND

1970s and 1980s

- In March 1973, the White House's Office of Telecommunications issued a national policy statement that recognized the benefits of 9-1-1, encouraged the nationwide adoption of 9-1-1, and provided for the establishment of a Federal Information Center to assist units of government in planning and implementation.
- In 1972, Charles County was the first county in Maryland to adopt 9-1-1, followed by Prince George's County in 1973 and Montgomery County in 1974.
- In 1979, Maryland became the second state in the nation to adopt 9-1-1 as the statewide universal number for emergency services access. The Emergency Number Systems Board was established to coordinate 9-1-1 implementation efforts.
- The emergency communications industry established standards for automatic number information (ANI) and automatic location information (ALI) to be presented with each 9-1-1 call. This automatic ANI/ALI data delivery to 9-1-1 call takers was designed to streamline the information gathering/dispatch processes and allow locating persons who are unable to identify their location or to verbally communicate with the 9-1-1 call taker.
- Maryland established a \$0.10 phone bill surcharge to fund 9-1-1 development efforts.
- The statute enabling the ENSB was amended to include the authority for counties to charge an "Additional Fee" assessed on monthly phone bills to offset 9-1-1 operational expenses.

1990s

- By 1995, all Maryland counties had implemented enhanced wireline 9-1-1 service with ANI/ALI displayed for each 9-1-1 call.
- The 9-1-1 Surcharge fee was modified to encompass wireless telecommunication services, and the ENSB was expanded to include a member of the wireless industry.
- The ENSB Training Sub-Committee and the Dundalk Community College developed a standardized 40-hour entrance level training course for 9-1-1 dispatchers.

2000 - 2010

- In 2002, Anne Arundel County is selected as the State's test site for providing enhanced wireless service and becomes Wireless Phase I operational (call back number displayed).
- In 2003, the 9-1-1 Surcharge is increased to \$0.25 per bill per month and the County "Additional Fee" is increased from a maximum of \$0.50 per bill per month to \$0.75. Board membership increased to 15 by adding representatives from the Maryland Emergency Number Association (MENA), a large county (population greater than 200,000), and a small county (population less than 200,000), while deleting a public-at-large position.
- By 2004, more than 50 percent of all 9-1-1 calls originated from wireless callers in most Maryland counties.
- By June 2005, all of Maryland's primary PSAPs are Wireless Phase II operational (ANI/ALI with all wireless calls), making Maryland the eighth state in the nation to reach this milestone³.
- In response to Homeland Security Core Goals established by the Governor, the Board established "back-up" PSAP criteria in the event that a primary PSAP not be able fulfill its role due to power outages, telephone system interruptions, building evacuations, or other natural or manmade disasters. The Board began providing funding for each county PSAP to have a viable back-up facility that met Board established standards.
- The Board encourages and funds the utilization of Emergency Dispatch Protocol Systems to provide a standardized means to consistently query and process information from 9-1-1 callers. Currently, all Maryland primary PSAPs utilize emergency medical dispatch protocols, while 96% of primary PSAPs use emergency fire and/or police dispatch protocols.
- In 2008, Board membership is increased to 17 members, adding a representative from the Geographical Information Systems (GIS) community, and an additional representative from Emergency Management Services.
- In 2009, Board established a policy to fund remote workstations at Maryland's secondary PSAPs, which receive transferred 9-1-1 calls. The Frederick City Police Department completed the first installation utilizing the Frederick County PSAP phone equipment and IP connectivity between the two facilities. Through this effort, the Board intends to advance the dissemination of enhanced 9-1-1 data to secondary PSAPs.

³ Source: The National Emergency Number Association (NENA).

- In 2009, the Harford County PSAP became the first PSAP in the nation to be recognized by the National Academies of Emergency Dispatch as an accredited “Center of Excellence” in all protocol disciplines (police, fire, and medical).

2011 - Present

- In 2012, the enabling legislation was amended to include a definition of Next Generation 9-1-1 services and tasking the Board with developing guidelines for NG 9-1-1 deployment.
- In 2013, the enabling legislation was amended providing for the 9-1-1 Surcharge to be applied to the sale of pre-paid wireless service to be collected at the point of sale (Maryland Pre-Paid Wireless E9-1-1 Fee).
- In 2013, Frederick County participated in a national pilot and offered text-to-9-1-1 services to Verizon Wireless customers located within Frederick County. Texts were sent to the Frederick County PSAP via a web-portal system provided by TeleCommunication Systems (TCS), a Maryland based company.
- In 2015, Maryland became the first state to require those who own or maintain a MLTS allow for the direct dialing of 9-1-1 without having to take an additional step to access the PSTN.

BOARD MEMBERSHIP

The membership of the ENSB includes a diverse and technically astute group of professionals from the emergency services, communications and public safety industries, as well as the public-at-large. The members serve a Governor appointed, Senate confirmed four-year term. While only required to meet quarterly, the ENSB has met at least monthly to examine current trends and needs of the twenty-four county managed PSAPs.

The Board enjoys the support of the Department of Public Safety and Correctional Services (DPSCS or Department) fiscal offices in providing auditing and accounting support. In recognition of time demands, the ENSB through DPSCS has employed a full time fiscal coordinator and an accountant to support the ENSB's efforts in administering the 9-1-1 Trust Fund.

The Board recognizes the need for entrance-level and in-service training for 9-1-1 call takers and supervisors. The Department established an administrative assistant position, working directly for the Office of the Executive Director, to advance the training efforts described in COMAR, and for handling special projects as assigned.

The following page outlines Board membership and the organization each member represents.

DEPARTMENT OF PUBLIC SAFETY AND CORRECTIONAL SERVICES

Emergency Number Systems Board

Board Member Listings

Representing	Member Name
Public Service Commission	Anthony Myers
MIEMSS ⁴	Richard Berg
Volunteer Fire Service	Bryan C. Ebling
Career Fire Service	Captain Colleen O'Neill
Public-At-Large	J. Scott Whitney
Emergency Management Systems	Scott Brillman
Telephone Utility	E. Colton O'Donoghue, Jr.
APCO ⁵	Susan E. Greentree
Maryland State Police	Lt. Colonel Laura L. Herman
Police Services	Major Peter Lazich
Public-At-Large	Roderick W. Hart
Large County	Andrew M. Johnston
Wireless Industry	Vacant
Small County	Steve Marshall
NENA ⁶ – Local Chapter	William A. Frazier
Emergency Management Systems	John E. Markey
Geographical Information Systems	Ken Miller

⁴ Maryland Institute for Emergency Medical Services Systems

⁵ Association of Public-Safety Communications Officials

⁶ National Emergency Number Association

TYPES OF 9-1-1 SYSTEMS

In the mid-1990s, all Maryland PSAPs achieved “enhanced” capability when each became able to display Automatic Number Information (ANI) and Automatic Location Information (ALI) for wireline 9-1-1 calls. Previously, emergency services were requested through unique local phone exchanges to police and fire service agencies, or by dialing “0” for the telephone company operator. The caller’s phone number and address were not displayed to the call taker.

The advent and proliferation of wireless communications caused the public safety community to demand the same “enhanced” capability provided by their wireline counterparts. The Federal Communications Commission (FCC) required the wireless industry to provide the ANI/ALI data of a wireless caller to the PSAP. Today, the wireless industry is in compliance with the FCC regulations and has been able to provide enhanced wireless service to technologically capable PSAPs. In June 2005, Maryland became only the eighth state in the nation to have all 24 primary PSAPs receive and display the ANI and ALI information from wireless 9-1-1 calls.

During 2016, the Board continued to approve project funding to upgrade various PSAP phone systems and mapping capacity to receive and display enhanced wireless data. The caller location information (ALI) provided through enhanced wireless service is received at the PSAP in measurements of latitude and longitude. Mapping of this information is required to facilitate meaningful application in processing the 9-1-1 call. The Board obtained statewide aerial-photography to assist Maryland counties to update and maintain the accuracy of their mapping capacity. This cooperative effort of providing current statewide aerial-photography to PSAPs is anticipated to be an ongoing project.

In coordination with the Board, Voice over Internet Protocol (VoIP) and Telematics emergency 9-1-1 services are now being directed through the Verizon selective router to the appropriate PSAP in the same fashion as traditional communication services, with caller related emergency information displayed to the call taker.

Next Generation 9-1-1

The Emergency Number Systems Board (Board) is currently developing procurement requirements for migrating to an IP network-based 9-1-1 system for receiving voice, data, text, pictures and video messaging; known as Next Generation 9-1-1 (NG 9-1-1). NG 9-1-1 is a system that includes network, hardware, software, database services, and operational policies and procedures. Each of these parts needs to be fully vetted, established and, most importantly, funds need to be identified to provide for the initial capital expenditures and for the ongoing expenses.

In anticipation of this transition, all of the phone system hardware currently being funded by the Board is IP-enabled and ready for transitioning to an established NG 9-1-1 environment. These NG 9-1-1 phone systems provide the ability to geo-diversely locate

core hardware connected via an IP network to share operational data and functionality with remotely connected workstations that can be located at multiple sites using a common network. These technologically advanced phone systems provide greater resiliency, redundancy and back-up facilities for Maryland's 9-1-1 System.

It is also the goal of the Board that as these new phone systems are locally implemented, the counties with secondary PSAPs that receive transferred 9-1-1 calls from a primary PSAP be eligible to receive funding for the purchase and installation of remote 9-1-1 workstations. These workstations will be connected via an IP network to the local 9-1-1 phone system core and receive all the functionality and data that is available at the primary PSAP. Eventually, this local IP network connectivity from primary PSAPs to their local secondary PSAPs will be incorporated into the overall statewide Emergency Service IP Network (ESInet).

In March 2013, Frederick County was selected as part of a national pilot to provide texting-to-9-1-1 services. Frederick County worked with Verizon Wireless, TeleCommunication Systems (TCS) and the Board to become the first jurisdiction in the State of Maryland, and one of the first in the nation, to be able to provide text-to-9-1-1 service to county residents and visitors that subscribe to Verizon Wireless services. The pilot project's success helped the State of Maryland determine the impact of texting on a 9-1-1 center, identify operational "best practices," and provide the framework for other wireless carriers to implement text-to-9-1-1 solutions. This pilot has also discovered location accuracy issues surrounding 9-1-1 texting, and the impact of providing 9-1-1 texting services on the deaf community (Frederick County is home to the Maryland School for the Deaf, and has a large speech and hearing impaired population).

By May 2014, the FCC ordered that all major wireless carriers (Verizon, T-Mobile, Sprint and AT&T) be able to provide text-to-9-1-1 services for all of their customers and to provide delivery to those PSAPs requesting to receive text-to-9-1-1 messages. Although text-to-9-1-1 will be offered by the wireless carriers by May 2014, it will take some time for the wireless carriers to implement the service as it will need to be rolled out on a PSAP by PSAP basis to account for PSAP boundaries and the routing of the messages. The Board is working with DPSCS and DoIT to develop a request for proposals (RFP) to implement consistent text-to-9-1-1 service in Maryland.

Network infrastructure with the capacity, resiliency and redundancy to transport 9-1-1 calls and related data in a cost effective manner is the greatest challenge to the implementation of NG 9-1-1 services. The current legacy system that delivers 9-1-1 calls has been reliable and sufficient to handle the demands of providing 9-1-1 emergency call delivery. It is critical that before transitioning to a Next Generation environment, the IP network delivery of emergency calls and data provides the same "five-nines" (99.999%) of service reliability, redundancy, and sufficient bandwidth capacity experienced today. To this end, the Board has developed a set of requirements for a NG 9-1-1 service provider that will be the basis of a RFP for an ESInet. The procurement of the ESInet may be done statewide, regionally or county-by-county. The Board is working with a consultant to refine those RFP requirements and form a procurement strategy.

Efforts by the federal government to create a nationwide public safety network, identified as the FirstNet Project, are also being monitored. The Board has participated in regional FirstNet efforts but it is still to be determined by FirstNet partners if 9-1-1 call delivery to PSAPs will be part of this data transport scheme.

NG 9-1-1 delivery of services will be geographically based and will require a transition from current address based data to new geo-based location technology. The Board and local counties are working with DoIT and its GIS department to coordinate the creation of this required geographic database. This process is on-going.

The Board is discovering that a significant impediment to implementing NG 9-1-1 in Maryland will be the recurring cost associated with securing an IP network with sufficient bandwidth, reliability, and redundancy for transport of 9-1-1 calls and data. Because of its design, NG 9-1-1 will cause a significant shift in one-time up-front (capital) and recurring monthly (expense) costs. Today, the ENSB funds capital projects while the PSAPs fund recurring expenses. At this point, it has not been determined what those recurring costs may be, or how local government will absorb a potential increase in network related costs.

The NG911 NOW Coalition was formed in 2016, and is made up of leading 911 associations in the country, such as the National Emergency Number Association (NENA), the National Association of State 911 Administrators (NASNA) and the Industry Council for Emergency Response Technologies (iCERT). The coalition is working in cooperation with the NG9-1-1 Institute and experts in government and academia to achieve the goal of deploying NG 9-1-1 across the United States by 2020.

Nationally, the standards and policies surrounding the transmission and delivery of pictures and video have not yet been established, nor has the FCC directed the carriers to provide that service by any identified date. Once available, PSAPs will need to interface this new data in their computer-aided dispatch (CAD) and recording systems before receiving photos and video. PSAPs will also need to develop policies on handling these ancillary call resources.

Utilizing the current legacy 9-1-1 system, PSAPs are able to receive 9-1-1 related calls, data, and eventually text messaging without having to transition to an IP Network. The capital and recurring costs associated with the current Maryland 9-1-1 System are known and are part of local and state ongoing budgetary projections. The cost associated with providing NG 9-1-1 services must be clearly identified and implemented with fiscal input from county and state entities. For fiscal planning, the Board and PSAP management must demand that a cost-benefit analysis be conducted for all requested and planned changes.

The Board will continue its strategy of adhering to standards adopted and recommended by the National Emergency Number Association (NENA) and the Association of Public Safety Communications Officials, International (APCO). Both organizations represent 9-

1-1. It is expected that these organizations will continue their leadership role in defining NG 9-1-1 services. The Board's strict adherence to national standards will assist in the avoidance of unnecessary expenses that could be associated with the replacement of non-standard software and hardware when transitioning to a NG 9-1-1 environment.

Considering the change in funding resources required in a NG 9-1-1 environment, the Board has begun the process of evaluating Maryland's current funding structure established by legislation. The current legislation may need to be amended to address fiscal deficiencies once recurring network related costs are identified.

In summary, the Board will continue to plan for NG 9-1-1. Shortly, we will be working with wireless carriers to deliver text-to-9-1-1 services to all Maryland PSAPs. It is anticipated that we will be looking for opportunities to utilize Network Maryland in a test environment to examine its network viability for 9-1-1 purposes. The Board is following the efforts of the Metropolitan Washington Council of Governments (COG) as it moves forward with its procurement of an ESInet. Lessons learned and best practices identified through these efforts will better prepare Maryland as we migrate to NG 9-1-1 services.

Maryland 2016 PSAP Statistics⁷

9-1-1 Calls

County	Director	Wireline	Wireless	Total
Allegany	Roger Bennett	10,671	32,269	42,940
Anne Arundel	Lt. John McAndrew	120,142	288,391	408,533
Baltimore City	Scott Brillman	435,774	884,312	1,320,086
Baltimore	Marie Whisonant	166,842	447,868	614,710
Calvert	Yvette Myers	5,083	26,223	31,306
Caroline	Bryan Ebling	2,896	12,502	15,398
Carroll	Jack Brown	17,002	39,643	56,645
Cecil	Richard Brooks	10,114	48,417	58,531
Charles	Tony Rose	21,717	57,005	78,722
Dorchester	Kim Vickers	3,660	16,020	19,680
Frederick	John Woelfel	16,372	92,771	109,143
Garrett	Kenneth Collins	5,332	9,770	15,102
Harford	W. Mitch Vocke	24,806	81,088	105,894
Howard	Lt. Edward Sprinkle	26,165	107,817	133,982
Kent	Wayne Darrell	2,656	7,071	9,727
Montgomery	Bill Ferretti	116,992	344,386	461,378
Prince George's	Charlynn Flaherty	129,583	1,078,689	1,208,272
Queen Anne's	Scott Haas	5,266	21,126	26,392
Somerset	Yvette Cross	2,433	11,333	13,766
St. Mary's	Robert Kelly	11,629	35,308	46,937
Talbot	Clay Stamp	6,842	12,632	19,474
Washington	Bardona Woods	21,842	74,068	95,910
Wicomico	David Shipley	13,129	59,372	72,501
Worcester	Fred Webster	8,438	31,696	40,134

Maryland Total 9-1-1 Calls 1,185,386 3,819,777 5,005,163

⁷ As reported by each County's PSAP Director

PSAP INSPECTIONS

In 2016, the Office of the Executive Director inspected each of Maryland's 24 PSAPs. Inspections are conducted annually to ensure each county's compliance with COMAR, to determine what areas need to be improved, and to learn about new trends in call handling that may have statewide implications.

Areas reviewed during the inspection process:

- The state of each county's mapping of wireless 9-1-1 calls;
- A review of each county's back-up power capabilities (uninterruptable power supply (UPS) and generator), electrical grounding and remote power monitoring/alarming;
- A review of each county's Continuity of Operations Plans;
- A review of Verizon service issues and concerns;
- A review of each county's Verizon *9-1-1 System Outage Notification List* to ensure that all contacts are up to date;
- A discussion of disaster planning exercises offered by Verizon;
- A discussion of 9-1-1 call delivery issues resulting from other service providers;
- A discussion of ongoing efforts to implement Next Generation 9-1-1 technologies;
- A review of the Frederick County text to 9-1-1 pilot;
- Other sources of funding the counties may have used for communications related projects (radio, CAD, 9-1-1, mapping, etc.);
- A check of PSAP equipment at both the primary and back-up (if applicable) locations to make certain that the equipment at each site meets COMAR requirements;
- A review of 9-1-1 call metrics to see if each county meets the COMAR requirement of answering 9-1-1 calls on a daily average of 10 seconds or less on a consistent basis;
- A discussion of staffing concerns;
- A review of each county's three-year plan;
- A review of training records to determine if each county meets the COMAR standards for entrance-level and annual in-service training;
- A review of ENSB funded Emergency Telecommunicator Course (ETC) certifications of 9-1-1 operators;
- Any suggestions by the county to improve ENSB processes and training offered.

No deficiencies were noted at any of Maryland's 24 PSAPs during the inspection process.

FUNDING

The Maryland Public Safety Article (§1-310 & §1-311) initially established two funding streams that support 9-1-1. The first is the State “9-1-1 Fee,” which is \$0.25 per subscriber per month. The second is the County “Additional Fee” in an amount determined by each county, through local ordinance, up to maximum of \$0.75 per bill per month. All Maryland counties and Baltimore City currently have passed local ordinances establishing the “Additional Fee” at \$0.75. Telephone companies, wireless carriers, and other 9-1-1 accessible service providers, collect and remit both portions of the 9-1-1 Surcharge to the State Comptroller, monthly, for deposit into the 9-1-1 Trust Fund. A third funding source was codified, effective July 1, 2013, when the Maryland Public Safety Article was amended extending the collection of the Maryland 9-1-1 Surcharge Fee to the sales of pre-paid wireless service (\$0.60 per transaction), collected at the point of sale (Maryland Pre-Paid Wireless E9-1-1 Fee).

Quarterly, the county “Additional Fee” and the county portion of the Maryland Pre-Paid Wireless E9-1-1 Fee remittances are distributed to each county prorated in accordance with the level of fees collected in each jurisdiction (*Public Safety Article §1-309 & §1-313*). Annually, the Secretary of the Department of Public Safety and Correctional Services requests a budget appropriation from the 9-1-1 Trust Fund in an amount sufficient to carry out the purposes of the enabling legislation, pay administrative costs, and reimburse counties for the cost of enhancing their 9-1-1 system (*Public Safety Article §1-309*). Through this budget appropriation process, the State “9-1-1 Fee” is distributed from the 9-1-1 Trust Fund to the Maryland counties at the discretion of the Emergency Number Systems Board in response to county 9-1-1 enhancement requests.

Maryland has established written criteria identifying the allowable uses of all 9-1-1 related funds collected. Money collected from the State “9-1-1 Fee” and 25% of all collected Maryland Pre-Paid Wireless E9-1-1 Fee may be used to reimburse counties for the cost of enhancing Maryland’s 9-1-1 system through payment to a third party contractor (*Public Safety Article §1-308*). COMAR (12.11.03.12) further defines equipment qualifying for funding or reimbursement. Money distributed quarterly to the counties from the collection of the county “Additional Fee” and Maryland Pre-Paid Wireless E9-1-1 Fee may be spent on the installation, enhancement, maintenance, and operation of a county or multi-county 9-1-1 system. Maintenance and operation costs may include telephone company charges, equipment costs, equipment lease charges, repairs, utilities, personnel costs, and appropriate carryover costs from previous years (*Public Safety Article §1-312*).

The following chart indicates the 9-1-1 Surcharge fees associated with each jurisdiction and the date of resolution modifying the county fee (i.e., additional fee).

Maryland 9-1-1 Surcharge Fees

County	State Fee ⁸	County Additional Fee ⁹	Pre-Paid Wireless ¹⁰	Effective Date ¹¹
Allegany	\$0.25	\$0.75	\$0.60	October 1, 2003
Anne Arundel	\$0.25	\$0.75	\$0.60	July 1, 2005
Baltimore City	\$0.25	\$0.75	\$0.60	June 23, 2004
Baltimore	\$0.25	\$0.75	\$0.60	April 23, 2004
Calvert	\$0.25	\$0.75	\$0.60	June 15, 2004
Caroline	\$0.25	\$0.75	\$0.60	November 9, 2004
Carroll	\$0.25	\$0.75	\$0.60	June 8, 2004
Cecil	\$0.25	\$0.75	\$0.60	October 1, 2003
Charles	\$0.25	\$0.75	\$0.60	January 1, 2004
Dorchester	\$0.25	\$0.75	\$0.60	October 1, 2003
Frederick	\$0.25	\$0.75	\$0.60	July 1, 2004
Garrett	\$0.25	\$0.75	\$0.60	October 1, 2003
Harford	\$0.25	\$0.75	\$0.60	May 4, 2004
Howard	\$0.25	\$0.75	\$0.60	July 1, 2007
Kent	\$0.25	\$0.75	\$0.60	January 30, 2004
Montgomery	\$0.25	\$0.75	\$0.60	October 1, 2003
Prince George's	\$0.25	\$0.75	\$0.60	March 5, 2004
Queen Anne's	\$0.25	\$0.75	\$0.60	October 1, 2003
Somerset	\$0.25	\$0.75	\$0.60	February 10, 2004
St. Mary's	\$0.25	\$0.75	\$0.60	July 1, 2004
Talbot	\$0.25	\$0.75	\$0.60	May 11, 2004
Washington	\$0.25	\$0.75	\$0.60	October 21, 2003
Wicomico	\$0.25	\$0.75	\$0.60	January 1, 2004
Worcester	\$0.25	\$0.75	\$0.60	October 1, 2003

⁸ The State fee is deposited to the State 9-1-1 Trust Fund for ENSB approved funding of capital projects

⁹ The County Additional Fee is disbursed quarterly to Counties to offset operational costs

¹⁰ The Maryland Pre-Paid Wireless E9-1-1 Fee (enacted July 1, 2013) is disbursed 25% to the 9-1-1 Trust Fund (similar use as the State Fee) and 75% to be disbursed quarterly in the same proportion as the County Additional Fee to each County

¹¹ Effective date of the County Additional Fee, passed by local ordinance

The chart below reflects the Fiscal Year 2016 distribution of the collected “Additional Charge” fees and interest.

FY 2016 Additional Fee Payments to the Counties and Baltimore City

County	Population ¹²	Additional Fee Disbursement	Percent of Total ¹³
Allegany County	75,087	\$370,160.98	0.91%
Anne Arundel County	537,656	\$4,131,508.44	10.14%
Baltimore City	620,961	\$3,400,116.95	8.35%
Baltimore County	805,029	\$6,139,385.14	15.08%
Calvert County	88,737	\$615,658.68	1.51%
Caroline County	33,066	\$175,252.65	0.43%
Carroll County	167,134	\$1,088,028.80	2.67%
Cecil County	101,108	\$604,133.02	1.48%
Charles County	146,551	\$1,105,606.76	2.71%
Dorchester County	32,618	\$177,921.60	0.44%
Frederick County	233,385	\$1,597,201.10	3.92%
Garrett County	30,097	\$191,973.90	0.47%
Harford County	244,826	\$1,734,007.69	4.26%
Howard County	287,085	\$2,283,975.44	5.61%
Kent County	20,197	\$130,741.12	0.32%
Montgomery County	971,777	\$7,358,479.21	18.07%
Prince George's County	863,420	\$6,513,717.87	15.99%
Queen Anne's County	47,798	\$316,834.60	0.78%
Somerset County	26,470	\$107,335.40	0.26%
St. Mary's County	105,151	\$616,158.50	1.51%
Talbot County	37,782	\$271,724.27	0.67%
Washington County	147,430	\$821,317.51	2.02%
Wicomico County	98,733	\$549,693.71	1.35%
Worcester County	51,454	\$424,392.82	1.04%
TOTALS	5,773,552	\$40,725,326.16	100.00%

¹² 2010 Actual Census (Maryland Manual)

¹³ Percent of total disbursement - used to calculate disbursement of Wireless Pre-Paid funds

ENSB EXPENDITURES

The Department of Public Safety and Correctional Services FY 2016 annual budget appropriation for the Emergency Number Systems Board is approximately \$14.4 Million.

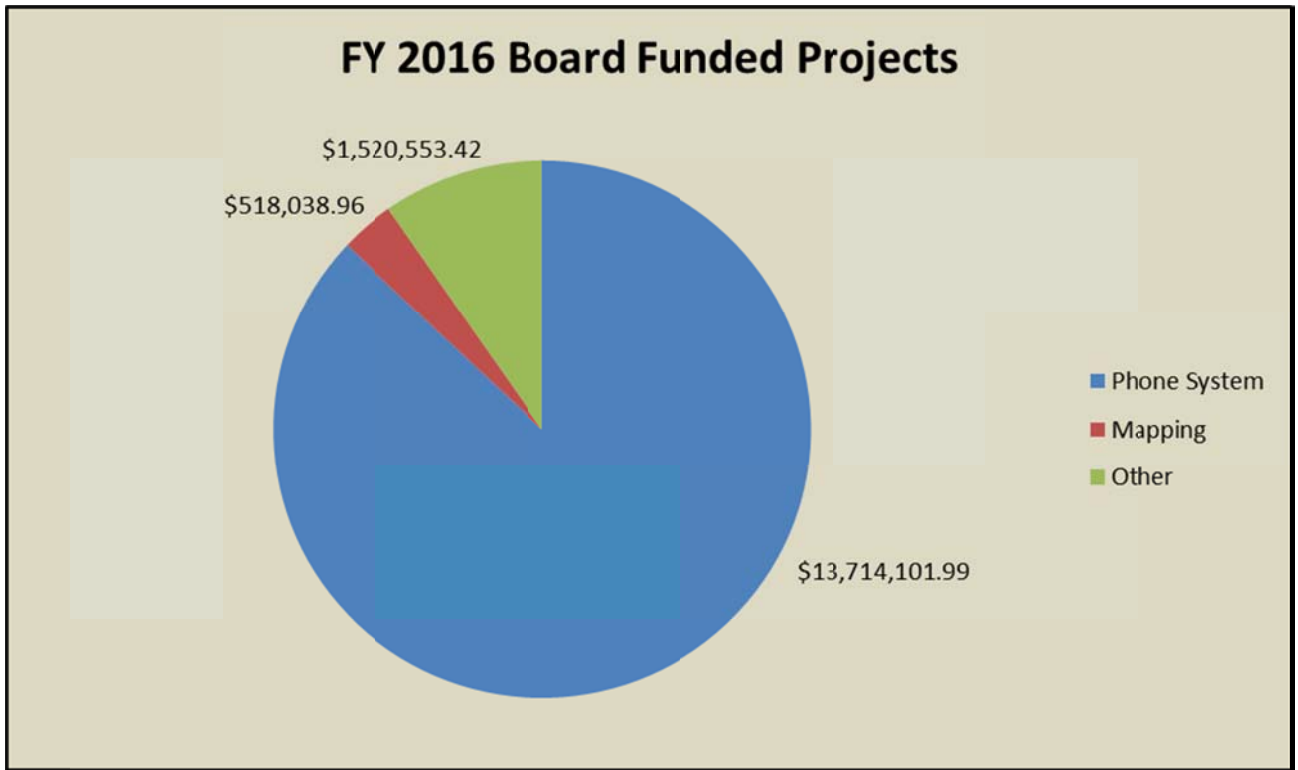
The technical nature of 9-1-1 communications has evolved over time to include the advent of computer-aided dispatch, multiple agencies providing emergency response, national standard setting organizations, wireless telephone communications, and most recently, IP based communication and telematics (automatic crash notification) services. These have brought about fundamental changes in the 9-1-1 infrastructure, and added training and equipment challenges.

Historically, the vast majority of funds are allocated to upgrading phone systems, keeping current with technological advances, providing adequate backup facilities, and enhancing mapping capacity. Current phone systems funded by the Board must be IP capable and ready to accept NG 9-1-1 data once national delivery and presentation standards have been established. All Maryland PSAPs now have the capability of mapping the position of 9-1-1 callers, when location information is received by the call taker.

Should circumstances arise that prevents a PSAP from receiving or processing emergency calls, it is critical that back-up 9-1-1 service and relocation strategies are in place and regularly exercised. During 2016, the Board funded several projects for PSAPs to enhance or establish capacity for back-up service and emergency relocation procedures. Referring to the Board's back-up PSAP guidelines, the Board works with noncompliant 9-1-1 Centers to establish approved back-up facilities with appropriate service functionality.

Utilizing technological advances in 9-1-1 phone systems and IP connectivity, the Board began the process of expanding the 9-1-1 system to encompass secondary PSAPs. Through the use of remote workstations, linked directly to the primary PSAP via IP network connectivity, secondary PSAP call takers experience the same functionality, mapping capacity and data delivery on all transferred 9-1-1 calls.

The chart below reflects FY 2016 Board expenditures



**** Other Funding:**

Other funding is comprised of capital expenditures related to 9-1-1 call processing or its enhancement. Some examples of these capital expenditures are listed below:

- 9-1-1 center security;
- Backup power systems;
- Redundant/diverse 9-1-1 call routing;
- Training – entry-level, in-service and supervisory/administrative;
- Lightning/surge protection; and
- Protocol-based call processing systems.

PHONE SYSTEM PROJECTS – FISCAL YEAR 2016

Receiving and processing 9-1-1 calls requires specialized phone system equipment to optimize voice, data and location technologies. These complex phone systems leverage advances in communication equipment to provide responsive 9-1-1 call handling, data management and mapping capacity, while maintaining enhanced 9-1-1 services with legacy systems. The NG 9-1-1 phone systems the Board is currently funding provide the ability to geo-diversely locate core hardware, connect the cores via an IP network to share operational data and functionality, and remotely connect workstations at multiple sites to one system using a common IP network to answer 9-1-1 calls. In response to technological advances in the communication industry, the Board anticipates updating PSAP phone equipment in five to six year cycles. During FY 16, the Board provided funding to upgrade and refresh 9-1-1 enhanced geo-diverse phone systems and workstations for four (4) primary PSAPs and four (4) backup PSAPs.

HIGHLIGHTED FISCAL YEAR 2016 PHONE SYSTEM UPGRADES

In fiscal year 2016, the Board funded geo-diverse IP enabled phone systems for **Garrett (primary)**, **Montgomery (primary and backup)**, **Worcester (primary and backup)** and **Baltimore Counties (primary and backup)**. In each of these installations, the A-Side of the core system was located at the primary PSAP while the B-Side of the core system was located at their back-up PSAP facilities. Each of these phone system cores (A & B) were connected via an IP network to provide real-time sharing of data and operations. Once linked and sharing data, the A or B Side can independently provide 9-1-1 service should the other core side fail or both sides can work in tandem, thus affording PSAPs with enhanced redundancy and increased capacity.

Should circumstances arise that prevents a PSAP from receiving or processing emergency calls, it is critical that back-up 9-1-1 service and relocation strategies are in place and regularly exercised. In 2016, the Board funded phone equipment at the designated back-up PSAP facilities in **Carroll County**. Each is exercised on a regular basis and can augment their primary PSAP to significantly increase call answering capacity during emergency conditions.

COUNTY AUDITS

The Public Safety Article requires each county to annually report to the Board how the monies received from the State 9-1-1 Trust Fund were spent. The Board is charged with the responsibility of evaluating the expenditures for compliance with applicable laws and regulations. To this end, the Board funds independent audits of county expenditures.

All of the audits for FY 16 were received and auditors compensated. The audits were reviewed and each county found in compliance with the spending limits articulated in the Public Safety Article. Operational expenses typically include 9-1-1 related personnel salaries/benefits, recurring maintenance and service fees, mapping maintenance/updating, network associated fees, and capital expenditures not covered by the Board.

COUNTY	COUNTY 9-1-1 FEE REVENUES	COUNTY 9-1-1 EXPENSES¹⁴	% of 9-1-1 FEE OFFSET
Allegany County	\$370,160.98	\$2,429,009.00	15.24%
Anne Arundel County	\$4,131,508.44	\$6,956,026.00	59.39%
Baltimore City	\$3,400,116.95	\$9,440,736.58	36.02%
Baltimore County	\$6,139,385.14	\$10,860,890.00	56.53%
Calvert County	\$615,658.68	\$2,732,130.14	22.53%
Caroline County	\$175,252.65	\$1,012,556.89	17.31%
Carroll County	\$1,088,028.80	\$2,725,308.00	39.92%
Cecil County	\$604,133.02	\$2,052,732.00	29.43%
Charles County	\$1,105,606.76	\$2,413,538.00	45.81%
Dorchester County	\$177,921.60	\$1,493,678.00	11.91%
Frederick County	\$1,597,201.10	\$6,465,002.00	24.71%
Garrett County	\$191,973.90	\$1,332,731.00	14.40%
Harford County	\$1,734,007.69	\$6,135,994.00	28.26%
Howard County	\$2,283,975.44	\$6,210,100.00	36.78%
Kent County	\$130,741.12	\$971,980.00	13.45%
Montgomery County	\$7,358,479.21	\$11,628,020.00	63.28%
Prince George's County	\$6,513,717.87	\$11,221,564.00	58.05%
Queen Anne's County	\$316,834.60	\$1,510,753.00	20.97%
Saint Mary's County	\$107,335.40	\$1,032,201.00	10.40%
Somerset County	\$616,158.50	\$2,686,662.00	22.93%
Talbot County	\$271,724.27	\$3,488,177.00	7.79%
Washington County	\$821,317.51	\$4,188,200.00	19.61%
Wicomico County	\$549,693.71	\$1,094,737.00	50.21%
Worcester County	\$424,392.82	\$2,476,317.00	17.14%

Total Operational Cost Offset by 9-1-1 Fee

39.71%

¹⁴ 9-1-1 related operational costs as reported by county selected independent auditors

ENSB SPECIAL MEETINGS

Metropolitan Washington Council of Governments: Following the June 2012 Derecho Storm, the COG established a PSAP Directors' Committee. The initial purpose of the committee was to understand the 9-1-1 network failures that occurred in Northern Virginia as a result of the Derecho, and to craft solutions to prevent a similar reoccurrence. The committee works collaboratively with partners from Virginia, Maryland, the District of Columbia, the federal government and private entities, such as Verizon, to strengthen the reliability and resiliency of the 9-1-1 network in the National Capital Region (NCR). This committee has evolved to discuss many issues of mutual interest to the regional PSAP directors, to include text-to-911, NG 9-1-1, network and service provider disruptions, and other operational issues.

Chairman Myers and members of the Office of the Executive Director have participated in the committee's quarterly meetings to discuss what is occurring with 9-1-1 in Maryland, to share Maryland's successes in strengthening the state's 9-1-1 System, and to learn what best practices have been successfully implemented in other jurisdictions so that they may be implemented in Maryland.

City of Baltimore Outage: On June 12, 2016, the City of Baltimore suffered a major outage of its 9-1-1 system that prevented callers from reaching 9-1-1. The Office of the Executive Director worked that night with the PSAP leadership to resolve the issue and to conduct a preliminary investigation. Service was restored the same night as the outage.

The Board convened a special meeting in executive (closed) session in accordance with the Maryland Open Meetings Act (General Provisions Article §3-305(b) of the Annotated Code of Maryland). Present at the meeting were members of the Board, representatives from the City of Baltimore, including Captain Scott Brillman (PSAP Director) and Chief Niles Ford (Chief of the Baltimore City Fire Department), and representatives from Verizon. Also present were members of the PSAP community.

The Board reviewed with Verizon and the City of Baltimore the suspected root cause of the outage and the steps that were taken to resolve the outage, including how the outage was messaged to the public. The root cause appears to be an issue with a network switch at a Verizon Central Office that forced the city's phone system into "night service," and sent its 9-1-1 calls to a backup queue. During this iterative process, the Board discovered that a lack of situational awareness by the city compounded the situation as they were not aware that calls had been forwarded to a backup queue. Baltimore City is unique in that it is one of three PSAPs in the Verizon footprint that uses a central office based phone system. This phone system was overdue for replacement, but a new phone system had not yet been acquired due to delays in the city's procurement process.

Subsequent to the outage, the "night service" key was disabled on the phone system to prevent another occurrence, and changes were made to the city's disaster recovery plan.

The Board reviewed next steps with Verizon and the city. The Board also stressed to the city that no other outages that could be prevented with a new phone system would be tolerated. The Board issued a series of follow-up activities to the city, Verizon and the Office of the Executive Director. Those items have been completed, and the Board's investigation into this matter has concluded.

Montgomery County Outage: On the evening of July 10, 2016, Montgomery County was operating out of its backup PSAP when the center suffered a major power failure. The power failure shut down the PSAP's phone system and other equipment. The primary PSAP was not available to the county as the county was in the process of replacing the phone equipment at the primary PSAP. 9-1-1 service was restored shortly after midnight on July 11, 2016.

The Board convened a special meeting in executive session in accordance with the Maryland Open Meetings Act (General Provisions Article §3-305(b) of the Annotated Code of Maryland). Present at the meeting were members of the Board, the Office of the Executive Director, Montgomery County and Motorola Solutions (the vendor for the county's phone system). Also present were representatives of the PSAP community.

Through the Board's investigation, it was determined that the outage stemmed from a shutdown of the PSAP's uninterruptible power supply (UPS), when the UPS overheated. The UPS overheated due to an undetected failure of a HVAC unit that cools the UPS room. It was further determined that this area is not inspected on a routine basis by the PSAP staff, nor did the system that monitors the building's environmental systems report the outage to the county. With the failure of the UPS, the phone equipment and other systems shut down.

The county made a decision to relocate back to the primary PSAP and take calls via administrative lines. The PSAP personnel did not realize that the administrative lines were still forwarded to the backup PSAP and that delayed the resumption of call taking.

The county reported that it has taken steps to prevent a reoccurrence of this outage, and has corrected deficiencies with the PSAP's HVAC and monitoring systems. The county also remediated its disaster recovery plan so that the steps for moving from one center to the other are more easily understood.

The Board issued a series of follow-up activities, which have been completed. The Board's inquiry into this matter has concluded.

Next Steps: Based on the outages in both Baltimore City and Montgomery County, the Board funded and held a disaster planning class in Howard County for the PSAPs. Further classes will be held throughout the state. The Office of the Executive Director will incorporate some of the issues identified into its inspection process for 2017, to ensure that other PSAPs will not experience the same sort of outage compounded by situational awareness. The Board also strongly encourages PSAPs to participate in disaster planning exercises with Verizon and others to test disaster recovery plans.

PLANNING DAY

The Emergency Number Systems Board (ENSB) held a Planning Day on December 8, 2016 at the Prince George's County Public Safety Answering Point (PSAP). The purpose of the day was to network with peers, to promote information sharing, and to discuss developments, direction and options for the delivery of emergency service through the 9-1-1 system. This document reflects the effort of that day and is a process that will need to continue into the future. Additional meetings will be held as deemed appropriate by the Emergency Number Systems Board. Action items were assigned to various individuals and committees with reports due to the Board at various times in the future.

Next Generation 9-1-1 Mapping Roundtable – Mr. Ken Miller (Facilitator)

Mr. Miller introduced a panel that will be presenting on various issues regarding Next Generation 9-1-1 mapping, and some of the lessons learned to date.

Mr. Erick Pate has a background in planning and public works GIS. He has been tasked to lead a NG911 GIS group for Southern Maryland. The Urban and Regional Information Systems Association (URISA) recently held two workshops in Maryland to discuss NG911 GIS, and what issues counties may work on right away to begin the process of getting its GIS data ready. Counties should be reconciling their Master Street Address Guide (MSAG) data and their Automatic Location Information (ALI) data with their internal mapping data to see what gaps they may have. County GIS personnel should also be educating their elected officials and county administrators about what needs to be done and what resources are available. The Maryland Association of Counties (MACo) has also been holding informational sessions with county leaders regarding NG911 needs.

Mr. Pate informed the group that Calvert County is handling real time GIS updates by maintaining one shared road centerline map and one address database for the entire county. When asked how large of an effort it will be to do this work, Mr. Peter Hanna said that the work will be immense it has not yet been done in Maryland.

Mr. Tony Rose stated that street naming and addressing are handled at the PSAP with a dedicated GIS professional. The Metropolitan Washington Council of Governments (MWCOG or COG) has introduced a GIS component to the COG, and the PSAP Director's Group has added GIS to their committee. There is a strong need to focus on GIS today, and many decisions will need fire and police input, as well as political decisions made. Ms. Kathy Lewis added that legal borders do not always reflect the PSAP boundary, and demonstrated locations in southern Maryland where that occurs.

Mr. Peter Hanna spoke next. He stated that there are three necessary components for NG911 GIS data: a road centerline that has both actual and theoretical addresses, address

points with Z coordinate (altitude) values to include subunits, and Emergency Service Number (ESN) and PSAP boundaries. The upcoming efforts for GIS will be “Herculean” and counties should not wait to start assessing their data. Mr. Hanna will also be leading the Maryland State Geographic Information Committee (MSGIC) NG911 group.

Ms. Julia Fischer (Maryland State Geographic Information Officer) concluded the presentation by stating that GIS will be undergoing a culture change, and NG911 is a part of this change. The issues faced and the solutions to those issues are bigger than just one project.

Communicating With the Public – How to Get Your Message Out During a Crisis **Captain Paul Starks, Montgomery County Police Department**

Captain Paul Starks, Montgomery County Police Public Information Officer (PIO) gave an overview of two 9-1-1 affecting issues that happened in Montgomery County over the summer.

The first issue was a PSAP affecting power disruption that happened while the PSAP was at its backup location on July 7, 2016. Captain Starks informed the group that the message you put out should be your message. In this case, the county released a statement that there was a “possible disruption to 9-1-1 service. If you call 9-1-1 and cannot get through, call one of the police districts with the numbers provided.”

The second issue occurred on August 16, 2016 when an underground transformer fire disrupted Sprint service in the National Capitol region. In this case, the message was similar in that the county communicated that there was an issue that may possibly affect the public from being able to call 9-1-1, and provided alternative calling methods if that were the case.

During a 9-1-1 outage, Captain Starks recommends getting your message out first, and to post something before the media does. Your message should include:

- What is happening now;
- What the public should do;
- What the 9-1-1 caller should do;
- What the county is doing about the problem; and
- Stand by for additional information.

Following the restoration of service, the county still needs to communicate with the public, and should share the following:

- An explanation of what occurred;
- The county is continuing to monitor the situation;
- Remind the public to not repeatedly call 9-1-1 if they have troubles getting through;

- Contact your nearest police or fire station for immediate assistance if you cannot reach 9-1-1; and
- Report your emergency as soon as possible.

Verizon Update – Mr. Walt Puller

Mr. Puller provided the group with an overview of disaster recovery plans. PSAPs and Verizon must remain vigilant and disaster plans should be reviewed at a minimum of two times per year. 9-1-1 calls can be rerouted using preplanning and the Network Control Modems, where the PSAP may use predefined routing to send calls to a neighboring PSAP as an intermediary step during a move from one center to another, or should a county not be able to use its primary and backup PSAPs.

Mr. Puller reviewed the tabletop exercises that he has been holding with county PSAPs. These exercises demonstrate how a 9-1-1 call traverses the network. Many of the directors felt that it would be beneficial to have a diagram of their network from the selective routers to the PSAPs so that they would have a visual reference during a 9-1-1 affecting issue. Mr. Puller was also asked if all of the counties have the current passcode for their respective Network Control Modems, as they were changed. Mr. Puller will follow-up with each county to see that they do. He added that they were communicated to the PSAP directors, but may have been lost due to management changes within the PSAP. Mr. Puller also reviewed the escalation lists.

Cybersecurity - Mark Rasch, Principal Client Partner, Verizon Enterprise Solutions

Mr. Mark Rasch provided an overview of some common cybersecurity threats. An ESInet used to deliver 9-1-1 calls in a Next Generation environment is essentially at TCP/IP network that has the same potential vulnerabilities as any other network. Recent attacks have included:

- Leveraging the “Internet of Things” to create a denial of service attack on the Internet with Internet connected “smart” devices in the home, such as thermostats, refrigerators, etc.
- Malware distributed via Twitter that seizes control of a wireless telephone to repeatedly call 9-1-1.
- Spoofing and Swatting, where false subscriber information is displayed for a caller for the malicious dispatching of first responders.
- False GPS locations.

The Federal Communications Commission reports that there are approximately 1,000 telephone denial of service (TDoS) attacks per year. Many of the hackers’ motives for these attacks are:

- Anarchy;
- To see if it can be done (curiosity);
- Criminal Motives;

- Foreign initiated attacks; and
- As a precursor to a larger event/attack.

Backup data may also be hacked and infected as part of the hacking process. Many businesses and institutions that have need of ready access to data have been victims of ransomware attacks. In these attacks, the hacker infects the victim's system, and then encrypts the data. Often, the hacker will demand a reasonable payment that the victim will pay for a decryption key to resume access to their data. Often, these payments are in bitcoin.

It is recommended that system patches are done often to prevent security breaches. Another best practice is to train users to not click on links or files from unknown or untrustworthy sources. To mitigate ransomware attacks, counties should:

- Have plans about how to respond;
- Should consider setting up bitcoin accounts to make ready payments;
- Should also determine what should be backed up to prevent the backing up of infected files and malware;
- Should have cybersecurity requirements in the whole of its supply chain to prevent infected components from being introduced into a network; and
- Use third party testing (white hat hackers and bug bounties) to test network and system security.

NG911 Migration – Technology Subcommittee

Mr. Rod Hart, Chairman of the Technology Subcommittee led a discussion of the Board's process for moving forward to acquire a statewide ESInet. The migration strategy includes:

- Identifying and evaluating options:
 - Evaluating the need for a consultant
 - Evaluating possible service models
 - Subscription based
 - State owned and operated
 - State owned and contractor operated
 - Preparation and staging
 - Evaluation of cost factors
 - Planning
 - Implementation and deployment
- PSAP Expectations
- Physical and Security Plans
- GIS Needs
- Consultants
- Next Steps

Mr. Scott Roper then led the audience through the Board's process to develop request for proposal (RFP) requirements, and to release a RFP to obtain an ESInet. The Board's Technology Subcommittee adapted the COG RFP issued earlier in 2016 to state requirements and standards. The Board reviewed the RFP and determined the need to use the services of a consultant. The consultant will:

- Provide program management for the RFP and implementation;
- Perform a NG911 readiness study and develop an RFP strategy;
- Perform a GIS gap analysis and coordinated GIS development;
- Apply a procurement strategy and implementation plan; and
- Provide NG911 grant writing assistance.

The consultant services are billed as used, with a maximum value on the contract. The consultant will be funded by the Board as a multi-county project.

911 Director's Group – Ross Coates

Mr. Ross Coates presented an overview of a PSAP directors' group, which will be formed as part of the emergency managers' affiliate of the Maryland Association of Counties (MACo). At the summer meeting of MACo, there was a panel discussion to prepare the counties for NG911. MACo and the Baltimore Metropolitan Council then held a follow-up workshop with emergency managers and PSAP directors in September to discuss NG911, what it means, and what are the opportunities and threats.

From that September meeting, several directors discussed the need to have a PSAP directors' group to discuss issues of common concern and to move forward into NG911 together.

At the MACo Winter Meeting, the group was formed as part of the MACo emergency managers' affiliate. More information will be provided to the directors through this group.

Subcommittee Reports

Mr. Bryan Ebling, chairman of the Training Subcommittee presented a joint Training Subcommittee and Policy/Standards Subcommittee report. Both committees are examining a policy to require secondary PSAPs that handle 9-1-1 calls to adhere to the same Code of Maryland Regulations (COMAR) training standards applicable to primary PSAP staff. This policy is under development. Many of the directors in the audience provided feedback to the committees to consider as this policy is developed.

9-1-1 TRAINING IN MARYLAND

Maryland continues to be a national leader in its 9-1-1 training efforts and remains one of the few states to establish legislation mandating 9-1-1 personnel training standards. Telecommunicator training has recently received national media attention and improving 9-1-1 personnel training has become the focus of several organizations and foundations (e.g. The Denise Amber Lee Foundation). At the inception of 9-1-1 in the early 1980s, Maryland understood the importance of training and, through the Code of Maryland Regulations (COMAR), established mandatory 9-1-1 PSAP training standards for both entry-level and in-service programs under the purview of the Emergency Number Systems Board (ENSB). These mandates continue to be updated to maintain current relevance. Compliance is verified through a yearly inspection process conducted by Board staff. It is evident that the ENSB and the Public Safety Answering Points' leadership have taken the obligation of providing timely and pertinent training seriously.

In the early 2000's, to provide a consistent entry-level training program, the ENSB selected a nationally offered Emergency Telecommunicator Course (ETC) developed and maintained current by the International Academies of Emergency Dispatch (IAED). The ETC curriculum and instruction was developed to deliver the information and educational experiences needed to prepare entry-level 9-1-1 call takers to begin their careers in public safety in a standardized and consistent manner. The ENSB funded ETC instructor training to provide each Maryland PSAP with certified ETC instructors. Today, Board funded ETC instructor and entry-level training programs continue to be the foundation for developing competent 9-1-1 call takers.

In response to COMAR, in-service training programs are provided by local jurisdictions and supplemented through training funded by the Board. Training officers develop local agency specific programs, while the Board, at the recommendation of the Training Subcommittee with input from the PSAP directors, offers 9-1-1 related training courses on a statewide basis throughout the year (see chart on page 43). These training sessions are open to all Maryland PSAP personnel, and address disciplines designed to enhance the skills and abilities of new or veteran call takers, supervisors and administrators.

Locally developed training programs are reviewed by the ENSB Training Subcommittee for content, relevance and statutory compliance. Also during the annual PSAP inspection process, each local jurisdiction's training program records are inspected by ENSB staff to validate that all 9-1-1 employees are receiving COMAR compliant training.

Maryland has been recognized nationally for its statewide utilization of police, fire, and medical protocol based call-processing systems. Nationally certified protocol systems provide a systematic methodology to query emergency response information from 9-1-1 callers that follows predetermined questioning guidelines and to provide standardized instructions to the caller prior to the first responder's arrival. Protocols offer a consistent 9-1-1 call handling process, and a quantifiable quality assurance review methodology.

Embracing the value of continuing education, Maryland remains a national leader in the ongoing training of 9-1-1 personnel through the support of the ENSB. The Board's emphasis on entry-level training, with the ETC program, and support of utilizing emergency medical, fire, and police protocols has significantly enhanced the delivery 9-1-1 service. The evaluation of 9-1-1 personnel through a disciplined quality assurance process is also required of jurisdictions receiving ENSB funding for protocol programs. The IAED protocol quality assurance process identifies individual, unit, and overall center compliance scores. National standards have been established to recognize centers that achieve superior quality assurance scores. Harford County and Prince George's County are among the first PSAPs in the world to receive the Tri-ACE (Accredited Center of Excellence) Certification from IAED for superior quality assurance scores attained in all three disciplines (police, fire and medical).

POLICY/STANDARDS SUBCOMMITTEE

The Policy/Standards Subcommittee¹⁵ is tasked with developing the policy and guidelines to provide guidance to the Board and PSAPs with regard to requesting and encumbering funding from the 9-1-1 Trust Fund. They also craft and respond to recommendations for legislative changes affecting the Public Safety Article and the Code of Maryland Regulations (COMAR) as it relates to 9-1-1 service.

STRATEGIES

- Develop written guidelines to be used by the ENSB in its consideration of the pricing, functionality, and quantities proposed for routine 9-1-1 equipment and service purchases.
- Develop procurement standards including equipment replacement cycles, spare/back-up equipment purchase guidelines, and minimum qualifications.
- Review the standards and procurement activities of national associations and efforts of other jurisdictions/states to adopt best practices in Maryland.
- Identify synergistic procurement opportunities in Maryland and foster the competitive bidding process.
- Develop statistical models to capture and reflect information relative to the Board's procurement activities and pricing trends.
- Work with the other subcommittees as needed to support the overall goals and objectives of the Board.

Policy/Standards Subcommittee
<u>Chairman</u> J. Scott Whitney - ENSB
Anthony Myers - ENSB
Andrew Johnston - ENSB
Susan Greentree - ENSB
William Frazier - ENSB
Ken Miller - ENSB
Ray Windisch - Baltimore County

During 2016, the Standards Subcommittee reviewed current equipment improvements and associated pricing ranges of items commonly funded by the Board to establish more responsive fiscal guidelines to assist Board efforts. No changes were recommended for Board funding guidelines.

¹⁵ Currently the Policy and Standards Subcommittee are acting together to achieve their missions.

TECHNOLOGY SUBCOMMITTEE

The Technology Subcommittee is responsible for the investigation and research of technology related issues, and the dissemination of technical information to the membership of the ENSB. This subcommittee will be focused on issues that could impact the management, operation and maintenance of E9-1-1 systems serving the residents of the State of Maryland.

Technology Subcommittee
<u>Chairman</u> Rod Hart - ENSB
Rich Berg - ENSB
Anthony Myers - ENSB
Steve Marshall - ENSB
Andy Johnston - ENSB
Jack Markey - ENSB
Ray Windisch – Baltimore County

The Technology Subcommittee has developed the requirements of implementing a Next Generation 9-1-1 System (NG 9-1-1) in Maryland. The Technology Subcommittee is following NG 9-1-1 technological advancements and establishment of industry standards/regulations to better prepare the Board as to NG 9-1-1 implementation options.

During 2016, The Technology Subcommittee conducted meetings with PSAP personnel and vendors to discuss migration to NG 9-1-1. The recurring funding required establishing and maintaining a NG 9-1-1 network was identified as a major element that will require a cost to benefit analysis to be conducted before committing the local funding necessary for this effort to advance. The Technology Subcommittee determined the need to select a consultant to aid the Board in the procurement process. This consultant will be funded through a multi-county project.

The Technology Subcommittee coordinated presentations to the Board concerning Maryland FirstNet efforts, text-to-9-1-1, mapping and cyber security.

TRAINING SUBCOMMITTEE

The Training Subcommittee is comprised of members of the Board and the PSAP community. In order to provide Maryland with a robust training program that will meet the requirements of the Code of Maryland Regulations (COMAR), the Training Subcommittee reviewed numerous training opportunities, programs and seminars before deciding which programs to offer in 2016.

ENSB Training Subcommittee
<u>Chairman</u>
Bryan Ebling – ENSB
William Frazier – ENSB
Sue Greentree – ENSB
John “Chris” McNamara – Howard County
Mitch Vocke – Harford County
Andrew Johnston – ENSB
Jennifer Swisher – Washington County
Laura Fitzgerald – Montgomery County
Alicia Dodson – Coordinator

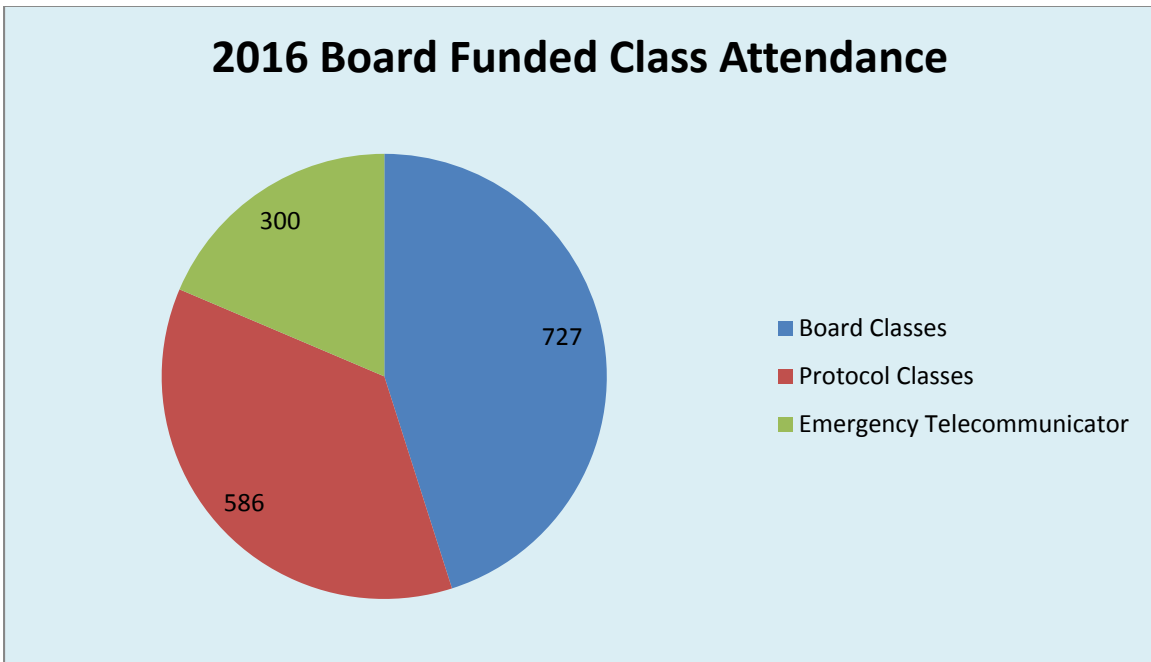
The Code of Maryland Regulations (COMAR) provides specific guidance on the topical requirements for training, but does not address job relatedness, testing standards, or instructional methodologies for entrance level, in-service or supervisory training. The Board, through the recommendation of the Training Subcommittee, partnered with the International Academies of Emergency Dispatch (IAED) to provide an Emergency Telecommunicator Course (ETC) for Maryland’s newly hired 9-1-1 call takers. This course provides a comprehensive review of the skills and abilities needed for successful handling of 9-1-1 emergency calls, and utilizes a curriculum designed for adult based learning. Trainers from each PSAP attend IAED sponsored classes to earn their ETC Instructor certification. During 2016, 297 9-1-1 call takers successfully completed the ETC entry-level training program. For additional information of the program, the web address for IAED is <http://www.emergencydispatch.org/>. The Training Subcommittee is looking into the costs and benefits of extending Board funding to secondary PSAPs to include ETC as part of their training curriculum in partnership with the counties.

As established in COMAR, in-service training is a requirement for all jurisdictions. Training programs can be provided by each local jurisdiction as well as on a statewide basis. Training officers at the local level develop agency specific training programs and evaluate individual training based on the needs for their center and county. A variety of

educational resources is utilized by each jurisdiction to ensure local personnel are properly trained and prepared for any emergency requests they may receive. The Training Subcommittee annually reviews each PSAPs training program to ensure curricula meets established guidelines.

Throughout 2016, the Training Subcommittee reviewed new programs and local training requests to determine appropriateness to enhance 9-1-1 service in Maryland. Upon subcommittee recommendation, various training programs are offered to PSAP personnel and held at locations around the state to ensure accessibility to all jurisdictions. The Training Subcommittee will continue to look for training opportunities to take advantage technological advances in training media and presentation.

During 2016, programs from nationally recognized training vendors including the National Emergency Number Association (NENA), Association of Public Safety Communications Officials - International, Inc. (APCO), Public Safety Training Consultants, Priority Dispatch and the Community College of Baltimore County were offered. The chart below indicates the number of students trained during Board funded classes.



The Training Subcommittee continues to utilize the facilities of the Public Safety Training Center, located in Sykesville, Maryland. This facility, which is centrally located, provides a rich learning environment with state of the art technology and ample classroom space that can accommodate up to 75 students in one room.

The Emergency Number Systems Board supports a variety of training programs and encourages the use of protocol systems throughout Maryland. Over 95 percent of the jurisdictions are currently using either Emergency Fire or Emergency Police Dispatch, in addition to Emergency Medical Dispatch protocols. In support of this effort, various protocol classes and protocol quality assurance training have been presented around the state.

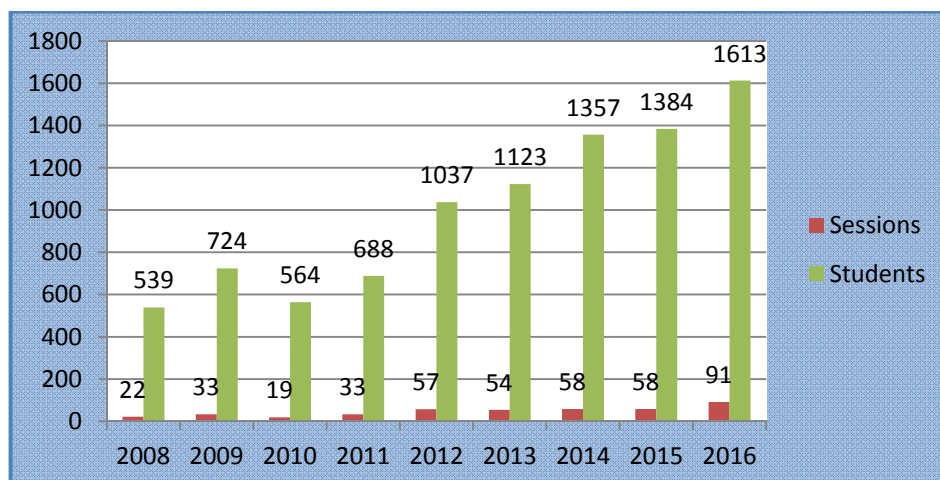
The Training Subcommittee reviewed various training programs recommended by our 9-1-1 Centers. Course selections were made and offered throughout the year to best accommodate employee scheduling. Training programs were typically provided at least twice for geographic diversity to allow all counties across the state to attend. **See list of training programs on the next page.**

2016 Training Programs

Protocol Classes (71 Sessions)	586 Attendees
Emergency Telecommunicator (ETC)	297 Attendees
IAED Emergency Telecommunicator Instructor	3 Attendees
Active Assailant	12 Attendees
Communications Training Officer	54 Attendees
PSTC What if it Were Family	18 Attendees
PSTC Crisis Communications	69 Attendees
PSTC Being the Best	31 Attendees
PSTC You Just Never Know	28 Attendees
PSTC It's Your Ship (Leadership)	52 Attendees
NENA 911 Supervisor Workshop	32 Attendees
NENA Disaster Planning for the PSAP	21 Attendees
Professional Writing for Leaders	8 Attendees
Mental Health for 911 Professionals	25 Attendees
APCO Mid-East Chapter Training (Various Topics)	70 Attendees
Miltenberger Seminar	30 Attendees
Denise Amber Lee Foundation	198 Attendees
PSTC Crisis Communications	79 Attendees

2016 TOTAL ATTENDEES

1613



ENSB/MENA DAY OF CELEBRATION

SEPTEMBER 15, 2016

The Emergency Number Systems Board (ENSB), in cooperation with the Maryland Emergency Number Association (MENA) presented the eleventh annual *9-1-1 Day of Celebration* on September 15, 2016. This event is intended to recognize the dedication and professional service provided by Maryland's Telecommunicators that answer 9-1-1 calls from the residents and visitors of Maryland requesting emergency services. Carroll County hosted the 2016 *Day of Celebration* at the Sykesville Freedom District Volunteer Fire Department. More than 140 Telecommunicators, supervisors, and other 9-1-1 service related personnel were welcomed to Carroll County by Barry Williams, President of the Maryland Chapter of NENA. Attendees then began the morning session with a training seminar presented by Public Safety Training Consultants (PSTC), a nationwide leader in 9-1-1 Center training.

Telecommunicator of the Year awards were presented to exemplary Telecommunicators selected by their local 9-1-1 center directors for outstanding service and dedication to Public Safety through 9-1-1 communications. Seventeen of Maryland's twenty-four 9-1-1 centers participated. The honorees were presented with a plaque recognizing their achievement and were acknowledged by their peers. The MENA President John Woelfel made the award presentations to the *Telecommunicator of the Year* recipients. Assisting in the presentation of these awards were ENSB members Sue Greentree and William Frazier.

Marilyn Farndon "Excellence in Training" Award

Marilyn Farndon was the first Executive Director of the Emergency Number Systems Board. Marilyn played a critical role in establishing many of the Board's policies and guidelines. She understood the critical need of standardized training and one of her signature achievements was bringing the 9-1-1 community together to develop Maryland's first certified entry-level training program. In recognition of this, and Marilyn Farndon's many other accomplishments, the Board has established the *Marilyn Farndon Excellence in Training Award* to recognize Maryland's most deserving 9-1-1 Instructor that has demonstrated a superior commitment to training through the development and presentation of relevant training curricula that enhances 9-1-1 service in Maryland. The recipient is selected by the Board's Training Subcommittee and the presentation of this award is made each year as part of the ENSB/MENA *Telecommunicator of the Year* awards ceremony at the *9-1-1 Day of Celebration*.

The 2016 Marilyn Farndon Excellence in Training Award was presented to Erin Schilling of Baltimore County.

CONCLUSIONS AND NEXT STEPS

As evidenced by this report, the Emergency Number Systems Board is continuing to identify, evaluate and develop strategies to embrace new 9-1-1 related technologies and public safety services. The Board also monitors local and national efforts to establish future standards surrounding the delivery, processing, sharing, and storing of 9-1-1 calls and data. To prepare for adopting proven technological advancements in public communications and migrating to a Next Generation 9-1-1 environment, the Board has identified the below listed action items to be addressed in the near future. Each action item has been assigned to one of the Board's subcommittees for follow up, and recommendations will be presented to the Board for further action.

BOARD ASSIGNED ACTION ITEMS

Future Funding Requirements: The Board will continue to evaluate the evolving allocation of network, equipment, and services costs to determine whether the current 9-1-1 funding model in Maryland warrants modification. **Assigned to Policy Subcommittee**

- The current funding model for 9-1-1 related capital, maintenance, operational, and call delivery costs will need to be examined in a NG 9-1-1 environment, in which monthly recurring costs could significantly increase.
 - The Board will seek monthly recurring NG 9-1-1 network related cost estimates from local, state, and commercial network providers to determine local 9-1-1 fiscal impact.
 - The Board will explore supporting a possible increase in the additional local fee, which would be directed to offset NG 9-1-1 related expenses.

Location Accuracy: In a NG 9-1-1 environment, the current ANI/ALI database will be replaced. It will be critical to have the mapping capacity to locate callers via latitude and longitude in order to geo-route calls to the appropriate PSAP. The Board will continue to monitor technological and regulatory developments regarding location accuracy to ensure that counties are prepared to utilize advancements in geo-based routing. **Assigned to GIS Board Representative**

- The Board will explore the fiscal and operational impact of developing and maintaining a geo-based database for routing 9-1-1 calls via a NG 9-1-1 network and call routing gateway environment.

NG 9-1-1: The Board will work with a consultant to prepare a request for proposals and procure an ESInet for the state's PSAPs. **Assigned to Technology Subcommittee**

- The Board will work with Maryland's 9-1-1 phone system providers to identify current efforts to integrate data reception through their phone premise equipment.
- The Board will monitor and identify local and regional partnership opportunities to secure NG 9-1-1 based network and gateway services.

- The Board will explore and work with the Public Service Commission on tariff issues and related PSAP costs when transitioning from the current selective router system to a NG 9-1-1 network/gateway system for routing 9-1-1 calls to PSAPs.
- The Board will work with County PSAPs to develop a NG 9-1-1 budgetary cost model as Maryland transitions to a NG 9-1-1 system.
- The Board will work with county and state GIS personnel to ensure that GIS data will be ready for NG 9-1-1 call routing.

9-1-1 System Redundancy and Resiliency: The Board will continue its practice of scheduling Verizon representatives to provide service and sales updates, and to also address unresolved county issues, as part of the monthly public ENSB meeting agenda. Working with Verizon, the PSAP community, and other 9-1-1 related service providers the Board will seek to ensure the reliability, resiliency, and responsiveness of Maryland's 9-1-1 System. **The Board will have Verizon provide monthly service reports and provide follow-up interaction with the 9-1-1 community (as needed):**

- The Board will work with each county to take advantage of Verizon's offer to conduct local table-top disaster exercises. The Board will continue to work with Verizon and the counties to schedule table-top disaster exercises with each PSAP, or joint exercises to be conducted on a regional basis to include multiple PSAPs.

APPENDIX

PUBLIC SAFETY ARTICLE

“9-1-1 Emergency Telephone System”

Title 1 - Section 3

§1-301.

- (a) In this subtitle the following words have the meanings indicated.
- (b) “Additional charge” means the charge imposed by a county in accordance with § 1-311 of this subtitle.
- (c) “Board” means the Emergency Number Systems Board.
- (d) “Commercial mobile radio service” or “CMRS” means mobile telecommunications service that is:
- (1) provided for profit with the intent of receiving compensation or monetary gain;
 - (2) an interconnected, two-way voice service; and
 - (3) available to the public.
- (e) “Commercial mobile radio service provider” or “CMRS provider” means a person authorized by the Federal Communications Commission to provide CMRS in the State.
- (f) “County plan” means a plan for a 9-1-1 system or enhanced 9-1-1 system, or an amendment to the plan, developed by a county or several counties together under this subtitle.
- (g) (1) “Customer” means:
- (i) the person that contracts with a home service provider for CMRS; or
 - (ii) the end user of the CMRS if the end user of the CMRS is not the contracting party.
- (2) “Customer” does not include:
- (i) a reseller of CMRS; or
 - (ii) a serving carrier under an arrangement to serve the customer outside the home service provider’s licensed service area.
- (h) “Enhanced 9-1-1 system” means a 9-1-1 system that provides:
- (1) automatic number identification;
 - (2) automatic location identification; and
 - (3) any other technological advancements that the Board requires.
- (i) “FCC order” means an order issued by the Federal Communications Commission under proceedings regarding the compatibility of enhanced 9-1-1 systems and delivery of wireless enhanced 9-1-1 service.
- (j) “Home service provider” means the facilities-based carrier or reseller that contracts with a customer to provide CMRS.
- (k) “Next generation 9-1-1 services” means an Internet Protocol (IP)-based system, comprised of hardware, software, data, and operational policies and procedures, that:
- (1) provides standardized interfaces from emergency call and message services to support emergency communications;
 - (2) processes all types of emergency calls, including voice, text, data, and multimedia information;
 - (3) acquires and integrates additional emergency call data useful to call routing and handling;
 - (4) delivers the emergency calls, messages, and data to the appropriate public safety answering point and other appropriate emergency entities;
 - (5) supports data or video communications needs for coordinated incident response and management; and
 - (6) provides broadband service to public safety answering points or other first responder entities.
- (l) “9-1-1-accessible service” means telephone service or another communications service that connects an individual dialing the digits 9-1-1 to an established public safety answering point.

- (m) “9–1–1 fee” means the fee imposed in accordance with § 1–310 of this subtitle.
- (n) (1) “9–1–1 service carrier” means a provider of CMRS or other 9–1–1–accessible service.
(2) “9–1–1 service carrier” does not include a telephone company.
- (o) (1) “9–1–1 system” means telephone service that:
 - (i) meets the planning guidelines established under this subtitle; and
 - (ii) automatically connects an individual dialing the digits 9–1–1 to an established public safety answering point.
 (2) “9–1–1 system” includes:
 - (i) equipment for connecting and outswitching 9–1–1 calls within a telephone central office;
 - (ii) trunking facilities from a telephone central office to a public safety answering point; and
 - (iii) equipment to connect 9–1–1 calls to the appropriate public safety agency.
- (p) “9–1–1 Trust Fund” means the fund established under § 1–308 of this subtitle.
- (q) “Prepaid wireless E 9–1–1 fee” means the fee that is required to be collected by a seller from a consumer in the amount established under § 1–313 of this subtitle.
- (r) “Prepaid wireless telecommunications service” means a commercial mobile radio service that:
 - (1) allows a consumer to dial 9–1–1 to access the 9–1–1 system;
 - (2) must be paid for in advance; and
 - (3) is sold in predetermined units that decline with use in a known amount.
- (s) “Public safety agency” means:
 - (1) a functional division of a public agency that provides fire fighting, police, medical, or other emergency services; or
 - (2) a private entity that provides fire fighting, police, medical, or other emergency services on a voluntary basis.
- (t) “Public safety answering point” means a communications facility that:
 - (1) is operated on a 24–hour basis;
 - (2) first receives 9–1–1 calls in a 9–1–1 service area; and
 - (3) as appropriate, dispatches public safety services directly, or transfers 9–1–1 calls to appropriate public safety agencies.
- (u) “Secretary” means the Secretary of Public Safety and Correctional Services.
- (v) “Seller” means a person that sells prepaid wireless telecommunications service to another person.
- (w) “Wireless enhanced 9–1–1 service” means enhanced 9–1–1 service under an FCC order.

§1–302.

- (a) The General Assembly:
 - (1) recognizes the paramount importance of the safety and well–being of the public;
 - (2) recognizes that timely and appropriate assistance must be provided when the lives or property of the public are in imminent danger;
 - (3) recognizes that emergency assistance usually is summoned by telephone, and that a multiplicity of emergency telephone numbers existed throughout the State and within each county;
 - (4) was concerned that avoidable delays in reaching appropriate emergency assistance were occurring to the jeopardy of life and property;
 - (5) acknowledges that the three digit number, 9–1–1, is a nationally recognized and applied telephone number that may be used to summon emergency assistance and to eliminate delays caused by lack of familiarity with emergency numbers and by confusion in circumstances of crisis; and
 - (6) recognizes that all end user customers of 9–1–1–accessible services, including consumers of prepaid wireless telecommunications service, should contribute in a fair and equitable manner to the 9–1–1 Trust Fund.
- (b) The purposes of this subtitle are to:
 - (1) establish the three digit number, 9–1–1, as the primary emergency telephone number for the State; and

(2) provide for the orderly installation, maintenance, and operation of 9-1-1 systems in the State.

§1-303.

(a) (1) This subtitle does not require a public service company to provide any equipment or service other than in accordance with tariffs approved by the Public Service Commission.

(2) The provision of services, the rates, and the extent of liability of a public service company are governed by the tariffs approved by the Public Service Commission.

(b) (1) This subtitle does not require a 9-1-1 service carrier to provide any equipment or service other than the equivalent of the equipment and service required of a telephone company under subsection (a) of this section.

(2) This subtitle does not extend any liability to a 9-1-1 service carrier or seller of prepaid wireless telecommunications service.

§1-304.

(a) Each county shall have in operation an enhanced 9-1-1 system.

(b) If implementation is preceded by cooperative planning, the enhanced 9-1-1 system required under subsection (a) of this section may operate as part of a multicounty system.

(c) (1) Services available through a 9-1-1 system shall include police, fire fighting, and emergency ambulance services.

(2) Other emergency and civil defense services may be incorporated into the 9-1-1 system at the discretion of the county or counties served by the 9-1-1 system.

(d) (1) The digits 9-1-1 are the primary emergency telephone number in the 9-1-1 system.

(2) A public safety agency whose services are available through the 9-1-1 system:

(i) may maintain a separate secondary backup telephone number for emergency calls; and

(ii) shall maintain a separate telephone number for nonemergency calls.

(e) Educational information that relates to emergency services made available by the State or a county:

(1) shall designate the number 9-1-1 as the primary emergency telephone number; and

(2) may include a separate secondary backup telephone number for emergency calls.

(f) (1) Each public safety answering point shall notify the public safety agencies in a county 9-1-1 system of calls for assistance in the county.

(2) Written guidelines shall be developed to govern the referral of calls for assistance to the appropriate public safety agency.

(3) State, county, and local public safety agencies with concurrent jurisdiction shall have written agreements to ensure a clear understanding of which specific calls for assistance will be referred to which public safety agency.

(g) Counties, other units of local government, public safety agencies, and public safety answering points may enter into cooperative agreements for the allocation of maintenance, operational, and capital costs attributable to the 9-1-1 system.

§1-305.

(a) There is an Emergency Number Systems Board in the Department of Public Safety and Correctional Services.

(b) (1) The Board consists of 17 members.

(2) Of the 17 members:

(i) one member shall represent a telephone company operating in the State;

(ii) one member shall represent the wireless telephone industry in the State;

(iii) one member shall represent the Maryland Institute for Emergency

Medical Services Systems;

(iv) one member shall represent the Department of State Police;

(v) one member shall represent the Public Service Commission;

(vi) one member shall represent the Association of Public-Safety

Communications Officials International, Inc.;

- (vii) two members shall represent county fire services in the State, with one member representing career fire services and one member representing volunteer fire services;
 - (viii) one member shall represent police services in the State;
 - (ix) two members shall represent emergency management services in the State;
 - (x) one member shall represent a county with a population of 200,000 or more;
 - (xi) one member shall represent a county with a population of less than 200,000;
 - (xii) one member shall represent the Maryland chapter of the National Emergency Numbers Association;
 - (xiii) one member shall represent the geographical information systems in the State; and
 - (xiv) two members shall represent the public.
- (3) The Governor shall appoint the members with the advice and consent of the Senate.
- (c) (1) The term of a member is 4 years and begins on July 1.
- (2) The terms of the members are staggered as required by the terms provided for members of the Board on October 1, 2003.
- (3) At the end of a term, a member continues to serve until a successor is appointed and qualifies.
- (4) If a vacancy occurs after a term has begun, the Governor shall appoint a successor to represent the organization or group in which the vacancy occurs.
- (5) A member who is appointed after a term has begun serves only for the rest of the term and until a successor is appointed and qualifies.
- (d) The Governor shall appoint a chairperson from among the Board members.
- (e) The Board shall meet as necessary, but at least once each quarter.
- (f) A member of the Board:
- (1) may not receive compensation as a member of the Board; but
 - (2) is entitled to reimbursement for expenses under the Standard State Travel Regulations, as provided in the State budget.
- (g) The Secretary shall provide staff to the Board, including:
- (1) a coordinator who is responsible for the daily operation of the office of the Board; and
 - (2) staff to handle the increased duties related to wireless enhanced 9-1-1 service.

§1-306.

- (a) The Board shall coordinate the enhancement of county 9-1-1 systems.
- (b) The Board's responsibilities include:
 - (1) establishing planning guidelines for enhanced 9-1-1 system plans and deployment of wireless enhanced 9-1-1 service in accordance with this subtitle;
 - (2) establishing procedures to review and approve or disapprove county plans and to evaluate requests for variations from the planning guidelines established by the Board;
 - (3) establishing procedures for the request for reimbursement of the costs of enhancing a 9-1-1 system by a county or counties in which a 9-1-1 system is in operation, and procedures to review and approve or disapprove the request;
 - (4) transmitting the planning guidelines and procedures established under this section, and any amendments to them, to the governing body of each county;
 - (5) submitting to the Secretary each year a schedule for implementing the enhancement of county or multicounty 9-1-1 systems, and an estimate of funding requirements based on the approved county plans;
 - (6) developing, with input from counties, and publishing on or before July 1, 2004, an implementation schedule for deployment of wireless enhanced 9-1-1 service;
 - (7) reviewing and approving or disapproving requests for reimbursement of the costs of enhancing 9-1-1 systems, and submitting to the Secretary each year a schedule for reimbursement and an estimate of funding requirements;
 - (8) reviewing the enhancement of 9-1-1 systems;

- (9) providing for an audit of county expenditures for the operation and maintenance of 9-1-1 systems;
- (10) ensuring inspections of public safety answering points;
- (11) reviewing and approving or disapproving requests from counties with operational enhanced 9-1-1 systems to be exempted from the expenditure limitations under § 1-312 of this subtitle;
- (12) authorizing expenditures from the 9-1-1 Trust Fund that:
 - (i) are for enhancements of 9-1-1 systems that:
 - 1. are required by the Board;
 - 2. will be provided to a county by a third party contractor; and
 - 3. will incur costs that the Board has approved before the formation of a contract between the county and the contractor; and
 - (ii) are approved by the Board for payment:
 - 1. from money collected under § 1-310 of this subtitle; and
 - 2. directly to a third party contractor on behalf of a county; and
- (13) establishing planning guidelines for next generation 9-1-1 services system plans and deployment of next generation 9-1-1 services in accordance with this subtitle.
 - (c) The guidelines established by the Board under subsection (b)(1) and (13) of this section:
 - (1) shall be based on available technology and equipment; and
 - (2) may be based on any other factor that the Board determines is appropriate, including population and area served by 9-1-1 systems.

§1-307.

- (a) The Board shall submit an annual report to the Governor, the Secretary, and, subject to § 2-1246 of the State Government Article, the Legislative Policy Committee.
- (b) The report shall provide the following information for each county:
 - (1) the type of 9-1-1 system currently operating in the county;
 - (2) the total 9-1-1 fee and additional charge charged;
 - (3) the funding formula in effect;
 - (4) any statutory or regulatory violation by the county and the response of the Board;
 - (5) any efforts to establish an enhanced 9-1-1 system in the county; and
 - (6) any suggested changes to this subtitle.

§1-308.

- (a) There is a 9-1-1 Trust Fund.
- (b) The purposes of the 9-1-1 Trust Fund are to:
 - (1) reimburse counties for the cost of enhancing a 9-1-1 system;
 - (2) pay contractors in accordance with § 1-306(b)(12) of this subtitle; and
 - (3) fund the coordinator position and staff to handle the increased duties related to wireless enhanced 9-1-1 service under § 1-305 of this subtitle, as an administrative cost.
- (c) The 9-1-1 Trust Fund consists of:
 - (1) money from the 9-1-1 fee collected and remitted to the Comptroller under § 1-310 of this subtitle;
 - (2) money from the additional charge collected and remitted to the Comptroller under § 1-311 of this subtitle;
 - (3) money from the prepaid wireless E 9-1-1 fee collected and remitted to the Comptroller under § 1-313 of this subtitle; and
 - (4) investment earnings of the 9-1-1 Trust Fund.
- (d) Money in the 9-1-1 Trust Fund shall be held in the State Treasury.
- (e) The Secretary shall administer the 9-1-1 Trust Fund, subject to the guidelines for financial management and budgeting established by the Department of Budget and Management.
- (f) The Secretary shall direct the Comptroller to establish separate accounts in the 9-1-1 Trust Fund for the payment of administrative expenses and for each county.
- (g)
 - (1) Any investment earnings shall be credited to the 9-1-1 Trust Fund.
 - (2) The Comptroller shall allocate the investment income among the accounts in the 9-1-1 Trust Fund, prorated on the basis of the total fees collected in each county.

§1-309.

(a) On recommendation of the Board, each year the Secretary shall request an appropriation from the 9-1-1 Trust Fund in an amount sufficient to:

- (1) carry out the purposes of this subtitle;
- (2) pay the administrative costs chargeable to the 9-1-1 Trust Fund; and
- (3) reimburse counties for the cost of enhancing a 9-1-1 system.

(b) (1) Subject to the limitations under subsection (e) of this section, the Comptroller shall disburse the money in the 9-1-1 Trust Fund as provided in this subsection.

(2) Each July 1, the Comptroller shall allocate sufficient money from the 9-1-1 fee to pay the costs of administering the 9-1-1 Trust Fund.

(3) As directed by the Secretary and in accordance with the State budget, the Comptroller, from the appropriate account, shall:

- (i) reimburse counties for the cost of enhancing a 9-1-1 system; and
- (ii) pay contractors in accordance with § 1-306(b)(12) of this subtitle.

(4) (i) The Comptroller shall pay to each county from its account the money requested by the county to pay the maintenance and operation costs of the county's 9-1-1 system in accordance with the State budget.

(ii) The Comptroller shall pay the money for maintenance and operation costs on September 30, December 31, March 31, and June 30 of each year.

(c) (1) Money accruing to the 9-1-1 Trust Fund may be used as provided in this subsection.

(2) Money collected from the 9-1-1 fee may be used to:

- (i) reimburse counties for the cost of enhancing a 9-1-1 system; and
- (ii) pay contractors in accordance with § 1-306(b)(12) of this subtitle.

(3) Money collected from the additional charge may be used by the counties for the maintenance and operation costs of the 9-1-1 system.

(4) Money collected from the prepaid wireless E 9-1-1 fee may be used as follows:

- (i) 25% for the same purpose as the 9-1-1 fee under paragraph (2) of this subsection; and
- (ii) 75% for the same purpose as the additional charge under paragraph (3) of this subsection, prorated on the basis of the total fees collected in each county.

(d) (1) Reimbursement may be made only to the extent that county money was used to enhance the 9-1-1 system.

(2) Reimbursement for the enhancement of 9-1-1 systems shall include the installation of equipment for automatic number identification, automatic location identification, and other technological advancements that the Board requires.

(3) Reimbursement from money collected from the 9-1-1 fee may be used only for 9-1-1 system enhancements approved by the Board.

(e) (1) The Board may direct the Comptroller to withhold from a county money for 9-1-1 system expenditures if the county violates this subtitle or a regulation of the Board.

(2) (i) The Board shall state publicly in writing its reason for withholding money from a county and shall record its reason in the minutes of the Board.

(ii) On reaching its decision to withhold money, the Board shall notify the county.

(iii) The county has 30 days after the date of notification to respond in writing to the Board.

(3) (i) On notification by the Board, the Comptroller shall hold money for the county in the county's account in the 9-1-1 Trust Fund.

(ii) Money held by the Comptroller under subparagraph (i) of this paragraph does not accrue interest for the county.

(iii) Interest income earned on money held by the Comptroller under subparagraph (i) of this paragraph accrues to the 9-1-1 Trust Fund.

(4) County money withheld by the Comptroller shall be withheld until the Board directs the Comptroller to release the money.

(f) (1) The Legislative Auditor shall conduct fiscal/compliance audits of the 9-1-1 Trust Fund and of the appropriations and disbursements made for purposes of this subtitle.

(2) The cost of the fiscal portion of the audits shall be paid from the 9-1-1 Trust Fund as an administrative cost.

§1-310.

(a) This section does not apply to prepaid wireless telecommunications service.

(b) Each subscriber to switch local exchange access service or CMRS or other 9-1-1-accessible service shall pay a 9-1-1 fee.

(c) The 9-1-1 fee is 25 cents per month, payable when the bill for the telephone service or CMRS or other 9-1-1-accessible service is due.

(d) (1) The Public Service Commission shall direct each telephone company to add the 9-1-1 fee to all current bills rendered for switched local exchange access service in the State.

(2) Each telephone company:

(i) shall act as a collection agent for the 9-1-1 Trust Fund with respect to the 9-1-1 fees;

(ii) shall remit all money collected to the Comptroller on a monthly basis; and

(iii) is entitled to credit, against the money from the 9-1-1 fees to be remitted to the Comptroller, an amount equal to 0.75% of the 9-1-1 fees to cover the expenses of billing, collecting, and remitting the 9-1-1 fees and any additional charges.

(3) The Comptroller shall deposit the money remitted in the 9-1-1 Trust Fund.

(e) (1) Each 9-1-1 service carrier shall add the 9-1-1 fee to all current bills rendered for CMRS or other 9-1-1-accessible service in the State.

(2) Each 9-1-1 service carrier:

(i) shall act as a collection agent for the 9-1-1 Trust Fund with respect to the 9-1-1 fees;

(ii) shall remit all money collected to the Comptroller on a monthly basis; and

(iii) is entitled to credit, against the money from the 9-1-1 fees to be remitted to the Comptroller, an amount equal to 0.75% of the 9-1-1 fees to cover the expenses of billing, collecting, and remitting the 9-1-1 fees and any additional charges.

(3) The Comptroller shall deposit the money remitted in the 9-1-1 Trust Fund.

(4) The Board shall adopt procedures for auditing surcharge collection and remittance by CMRS providers.

(5) On request of a CMRS provider, and except as otherwise required by law, the information that the CMRS provider reports to the Board shall be confidential, privileged, and proprietary and may not be disclosed to any person other than the CMRS provider.

(f) Notwithstanding any other provision of this subtitle, the 9-1-1 fee does not apply to an intermediate service line used exclusively to connect a CMRS or other 9-1-1-accessible service, other than a switched local access service, to another telephone system or switching device.

(g) A CMRS provider that pays or collects 9-1-1 fees under this section has the same immunity from liability for transmission failures as that approved by the Public Service Commission for local exchange telephone companies that are subject to regulation by the Commission under the Public Utilities Article.

§1-311.

(a) This section does not apply to prepaid wireless telecommunications service.

(b) In addition to the 9-1-1 fee, the governing body of each county, by ordinance or resolution enacted or adopted after a public hearing, may impose an additional charge to be added to all current bills rendered for switched local exchange access service or CMRS or other 9-1-1-accessible service in the county.

(c) (1) The additional charge imposed by a county may not exceed 75 cents per month per bill.

(2) The amount of the additional charges may not exceed a level necessary to cover the total eligible maintenance and operation costs of the county.

(d) The additional charge continues in effect until repealed or modified by a subsequent county ordinance or resolution.

(e) After imposing, repealing, or modifying an additional charge, the county shall certify the amount of the additional charge to the Public Service Commission.

(f) The Public Service Commission shall direct each telephone company that provides service in a county that imposed an additional charge to add, within 60 days, the full amount of the additional charge to all current bills rendered for switched local exchange access service in the county.

(g) Within 60 days after a county enacts or adopts an ordinance or resolution that imposes, repeals, or modifies an additional charge, each 9-1-1 service carrier that provides service in the county shall add the full amount of the additional charge to all current bills rendered for CMRS or other 9-1-1-accessible service in the county.

(h) (1) Each telephone company and each 9-1-1 service carrier shall:

(i) act as a collection agent for the 9-1-1 Trust Fund with respect to the additional charge imposed by each county;

(ii) collect the money from the additional charge on a county basis; and

(iii) remit all money collected to the Comptroller on a monthly basis.

(2) The Comptroller shall deposit the money remitted in the 9-1-1 Trust Fund account maintained for the county that imposed the additional charge.

§1-312.

(a) During each county's fiscal year, the county may spend the amounts distributed to it from 9-1-1 fee collections for the installation, enhancement, maintenance, and operation of a county or multicounty 9-1-1 system.

(b) Subject to the provisions of subsection (c) of this section, maintenance and operation costs may include telephone company charges, equipment costs, equipment lease charges, repairs, utilities, personnel costs, and appropriate carryover costs from previous years.

(c) During a year in which a county raises its local additional charge under § 1-311 of this subtitle, the county:

(1) may use 9-1-1 trust funds only to supplement levels of spending by the county for 9-1-1 maintenance or operations; and

(2) may not use 9-1-1 trust funds to supplant spending by the county for 9-1-1 maintenance or operations.

(d) The Board shall provide for an audit of each county's expenditures for the maintenance and operation of the county's 9-1-1 system.

(e) (1) For a county without an operational Phase II wireless enhanced 9-1-1 system within the time frames established by the Board under § 1-306(b)(6) of this subtitle, the Board shall adopt procedures, to take effect on or after January 1, 2006, to assure that:

(i) the money collected from the additional charge and distributed to the county are expended during the county's fiscal year as follows:

1. for a 9-1-1 system in a county or a multicounty area with a population of 100,000 individuals or less, a maximum of 85% may be spent for personnel costs; and

2. for a 9-1-1 system in a county or multicounty area with a population of over 100,000 individuals, a maximum of 70% may be spent for personnel costs; and

(ii) the total amount collected from the 9-1-1 fee and the additional charge shall be expended only for the installation, enhancement, maintenance, and operation of a county or multicounty system.

(2) The Board may grant an exception to the provisions of paragraph (1) of this subsection in extenuating circumstances.

(3) A county with an operational Phase II wireless enhanced 9-1-1 system is exempt from the provisions of paragraph (1) of this subsection.

§1-313.

(a) (1) In this section the following words have the meanings indicated.

(2) "Consumer" means a person that purchases prepaid wireless telecommunications service in a retail transaction.

(3) "Provider" means a person that provides prepaid wireless telecommunications service under a license issued by the Federal Communications Commission.

(4) "Retail transaction" means the purchase of prepaid wireless telecommunications service from a seller for any purpose other than resale.

(b) There is a prepaid wireless E 9-1-1 fee of 60 cents per retail transaction.

(c) (1) (i) The prepaid wireless E 9-1-1 fee shall be collected by the seller from the consumer for each retail transaction in the State.

(ii) The prepaid wireless E 9-1-1 fee collected by the seller under this section is not subject to the sales and use tax under the Tax – General Article.

(2) A retail transaction occurs in the State if:

(i) the sale or recharge takes place at the seller's place of business located in the State;

(ii) the consumer's shipping address is in the State; or

(iii) no item is shipped, but the consumer's billing address or the location associated with the consumer's mobile telephone number is in the State.

(d) The amount of the prepaid wireless E 9-1-1 fee shall be disclosed to the consumer at the time of the retail transaction.

(e) (1) Except as provided in paragraph (2) of this subsection, the prepaid wireless E 9-1-1 fee is the liability of the consumer and not of the seller or of any provider.

(2) The seller is liable for remitting all prepaid wireless E 9-1-1 fees that the seller collects from consumers as provided in this section.

(f) (1) Before December 28, 2013, a seller may deduct and retain 50% of prepaid wireless E 9-1-1 fees collected from consumers for direct start-up costs.

(2) On or after December 28, 2013, a seller may deduct and retain 3% of prepaid wireless E 9-1-1 fees collected from consumers.

(g) A seller shall report and remit to the Comptroller all prepaid wireless E 9-1-1 fees collected by the seller in the manner provided for the remitting of the sales and use tax under Titles 11 and 13 of the Tax – General Article.

(h) The Comptroller shall deposit all reported and remitted prepaid wireless E 9-1-1 fees into the 9-1-1 Trust Fund within 30 days of receipt.

(i) A seller may demonstrate that a sale is not a retail transaction in a manner established by the Comptroller that is substantially similar to the procedures for demonstrating a resale for exemption from the sales and use tax under Titles 11 and 13 of the Tax – General Article.

(j) For the purpose of this section, the audit and appeal procedures established for the sales and use tax under Titles 11 and 13 of the Tax – General Article apply.

(k) A seller that is not a provider of prepaid wireless telecommunications service is not liable for damages in connection with:

(1) the provision of, or failure of, 9-1-1 or E 9-1-1 service;

(2) identifying, or failing to identify, the telephone number, address, location, or name associated with any person or device that is accessing or attempting to access 9-1-1 or E 9-1-1 service; or

(3) the provision of any lawful assistance to any investigative or law enforcement officer.

(l) Providers and sellers of prepaid wireless telecommunications service have the same immunity from liability for transmission failures as that approved by the Public Service Commission for local exchange telephone companies that are subject to regulation by the Commission under the Public Utilities Article.

(m) A tax, a fee, a surcharge, or any other charge may not be imposed by the State, any political subdivision of the State, or any intergovernmental agency, for E 9-1-1 funding purposes, on any provider, seller, or consumer with respect to the sale, purchase, use, or provision of prepaid wireless telecommunications service.

(n) The Comptroller shall adopt regulations to carry out the provisions of this section.

§ 1-314

(a) "Multiple-line telephone system" defined. -- In this section, "multiple-line telephone system" means a system that:

(1) consists of common control units, telephone sets, control hardware and software, and adjunct systems, including network and premises-based systems; and

(2) is designed to aggregate more than one incoming voice communication channel for use by more than one telephone.

(b) In general. --

(1) Except as provided in paragraph (2) of this subsection, on or before December 31, 2017, a person that installs or operates a multiple-line telephone system shall ensure that the system is connected to the public switched telephone network in such a way that when an individual using the system dials 9-1-1, the call connects to the public safety answering point without requiring the user to dial any other number or set of numbers.

(2) A unit of the Executive Branch of State government shall comply with paragraph (1) of this subsection on the date that the multiple-line telephone system of the unit is next upgraded.

CODE OF MARYLAND REGULATIONS

12.11.03.00

Title 12 DEPARTMENT OF PUBLIC SAFETY AND CORRECTIONAL SERVICES

Subtitle 11 OFFICE OF THE SECRETARY

Chapter 03 9-1-1 Emergency Telephone System

Authority: Public Safety Article, Title 1, Subtitle 3, Correctional Services Article, §2-109; Annotated Code of Maryland

12.11.03.01

.01 Emergency Number Systems Board Authority.

The Emergency Number Systems Board shall coordinate the implementation, enhancement, maintenance, and operation of county or multicounty 9-1-1 systems.

12.11.03.02

.02 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "Additional charge" has the meaning stated in Public Safety Article, §1-301, Annotated Code of Maryland.

(2) "Board" means the Emergency Number Systems Board.

(3) "9-1-1 system" means a telephone service or any other communication service that meets the planning guidelines under Public Safety Article, §1-306, Annotated Code of Maryland, and automatically connects an individual dialing the digits 9-1-1 to a public safety answering point.

(4) "Public safety answering point" has the meaning stated in Public Safety Article, §1-301, Annotated Code of Maryland.

12.11.03.03

.03 The Emergency Number Systems Board.

A. The Emergency Number Systems Board is under the direction of the Secretary of Public Safety and Correctional Services.

B. Board membership shall be according to Public Safety Article, §1-305, Annotated Code of Maryland.

C. The Board shall meet as necessary, but not less than quarterly each calendar year.

- D. The Board requires a majority of confirmed members present at a meeting to constitute a quorum.
- E. The Board requires a majority vote of members present at a meeting before taking action.
- F. The Board shall coordinate enhancement of county or multicounty 9-1-1 systems according to provisions under Public Safety Article, §1-306, Annotated Code of Maryland.

12.11.03.04

.04 Implementation by County or Multicounty Area.

A county or multicounty area shall maintain an enhanced 9-1-1 system that:

- A. Uses the digits 9-1-1 as the published emergency telephone number for access to emergency services;
- B. Has public safety answering points that provide 24-hour public access and dispatch service;
- C. Provides transfer and referrals to related public safety services;
- D. Provides for staffing all public safety answering points with personnel trained as required by this chapter;
- E. Provides for equipping all public safety answering points with adequate access to TTY equipment to facilitate use by an individual with a speech or hearing disability;
- F. Provides access to services for an individual who does not speak or understand the English language;
- G. May provide access to local emergency management centers for all public safety answering points;
- H. Permits a county to designate a public safety answering point using cooperative arrangements acceptable to the participating agencies;
- I. Permits public safety answering points to transfer or relay emergency calls received requiring services outside of the jurisdiction of the system receiving the call;
- J. Maintains a current master street address guide and communicates updated information to parties responsible for an automatic number identification (ANI) and automatic location identification (ALI) system;
- K. Uses telephone equipment and services that provide:
 - (1) A visual or audible indication, or both, of an incoming call;
 - (2) The capability for the call taker to monitor a transferred call to ensure that the call is properly transferred;
 - (3) Annual telephone company monitoring of service to determine the grade of service and, if appropriate, to make recommendations to ensure that not more than one busy signal in every 100 incoming calls during an average busy hour is maintained; and
 - (4) Documentation of the date and time a 9-1-1 call is received; and
- L. Has a sufficient number of call takers and equipment to consistently answer incoming calls on a daily average of 10 seconds or less.

12.11.03.05

.05 Plans for More Than One Public Safety Answering Point in a County.

A county with a plan for more than one public safety answering point in the county shall submit the plan to the Board for consideration subject to the following:

- A. The county administration submitting the plan and not the individual agency within the county shall receive and distribute funding; and
- B. The plan shall meet the criteria established under this chapter, unless the Board approves a variation.

12.11.03.06

.06 Minimum Enhanced 9-1-1 System Requirements.

At a minimum, an enhanced 9-1-1 system implemented in Maryland shall include:

- A. Sufficient incoming 9-1-1 lines for each telephone central office to ensure that not more than one in 100 call attempts during the average busy hour is blocked;
- B. Connections to all public safety agencies covered by the system;
- C. 24 hour, 7 day operation of the public safety answering point staffed with personnel trained as required under this chapter;
- D. First priority to answering 9-1-1 calls;
- E. Electronic recording of all 9-1-1 calls;
- F. Playback capability of all 9-1-1 calls;
- G. Connection to adjacent public safety answering points by private lines when there is a telephone exchange and jurisdictional boundary not covered by selective routing;
- H. Security measures sufficient to minimize intentional disruption of the operation;
- I. Standby emergency electrical power to keep the public safety answering point operating when commercial power fails;
- J. At least one administrative line for nonemergency calls;
- K. Written operational procedures;
- L. Automatic location identification (ALI) which displays, at the public safety answering point, the address or location of the calling instrument;
- M. Automatic number identification (ANI) which displays, at the public safety answering point, the calling telephone number;

N. Central office identification used to identify dedicated lines or trunks from a central office when a public safety answering point serves more than one central office;

O. A distinct tone, visible signal, or other process for:

- (1) Alerting the call taker that an incoming 9-1-1 call was disconnected; and
- (2) Receiving and displaying the telephone number with ANI and ALI information for a disconnected 9-1-1 call, when available;

P. Providing access to services for an individual:

- (1) With a speech or hearing disability; or
- (2) Who does not speak or understand the English language; and

Q. Other technical advances approved by the Board.

12.11.03.07

.07 Minimum Features of a 3-1-1 System.

A. A county or multicounty system may establish a 3-1-1 system to reduce congestion on the 9-1-1 system operation.

B. At a minimum, a 3-1-1 system shall include the following:

- (1) Switching or programming to direct a 3-1-1 call to a nonemergency answering position;
- (2) A 3-1-1 answering position that shall be capable of:
 - (a) Immediately transferring an emergency call to a 9-1-1 answering position or an adjoining public safety answering point;
 - (b) Transferring a nonemergency call to an adjoining jurisdiction or appropriate agency; and
 - (c) Providing an individual:
 - (i) With a speech or hearing disability access to TTY services; or
 - (ii) Who does not speak or understand the English language access to alternative communication services; and
- (3) A 3-1-1 call taker trained to handle nonemergency calls and to transfer emergency calls to a 9-1-1 call taker.

12.11.03.08

.08 Operational Plan.

A. A county or multicounty system shall have and maintain a written operational plan for public safety services signed by public safety agencies within the public safety answering point area of responsibility.

B. A public safety agency included in an operational plan under §A of this regulation shall be familiar with the operational procedures of the other public safety agencies included in the same operational plan.

C. An operational plan shall provide for uniform methods and procedures to ensure effective interagency communications.

12.11.03.09

.09 Safeguarding Telephone Circuits by Telephone Companies.

A. A facility housing 9-1-1 telephone equipment shall:

- (1) Be equipped at all exposed terminations, including central office distributing frames, with protective devices that prevent accidental worker contact; and
- (2) Include clearly identified protected terminations to distinguish protected terminations from other circuitry.

B. A protected circuit may not be opened, grounded, short-circuited, or manipulated in any way by a telephone company worker without the local telephone company first obtaining approval for circuit release from the appropriate public safety answering point.

C. A telephone company shall ensure that telephone company employees who work in facilities associated with the 9-1-1 service are familiar with procedures for safeguarding 9-1-1 system equipment.

12.11.03.10

.10 Public Safety Answering Point Training.

A. A county shall staff a public safety answering point with personnel who can properly process a call from a machine used by an individual who has a speech or hearing impairment.

B. Within 6 months of hiring a public safety answering point call taker, a county shall train the new call taker using a curriculum adopted or approved by the Board.

C. A county shall provide a public safety answering point call taker with yearly in-service training using a curriculum adopted or approved by the Board.

D. Training shall include:

- (1) Public safety answering point orientation;
- (2) Communication skills;
- (3) Electronic systems;
- (4) Policies and procedures;
- (5) Call processing;
- (6) Documentation;
- (7) Dispatch procedures;
- (8) Stress management;
- (9) Public relations;
- (10) Administrative duties; and
- (11) Disaster and major incident training.

12.11.03.11

.11 9-1-1 Fees.

A. The Board shall ensure that collection, maintenance, dispersal, and auditing of 9-1-1 fees is conducted according to Public Safety Article, §§1-308—1-312, Annotated Code of Maryland.

B. Additional Charges—Local Government.

(1) In addition to the fee charged under Public Safety Article, §1-310, Annotated Code of Maryland, a county with an operational 9-1-1 system under Public Safety Article, §1-304, Annotated Code of Maryland, may, by ordinance or resolution after public hearing, enact or adopt an additional monthly charge not to exceed the limits under Public Safety Article, §1-311, Annotated Code of Maryland, to be applied to current bills, within that county, for:

(a) Switched local exchange access service; and

(b) Wireless telephone service or other 9-1-1 accessible service.

(2) A county authorizing an additional charge under §B of this regulation and maintaining an enhanced 9-1-1 system shall be subject to an annual Board-authorized independent audit of authorized 9-1-1 expenditures pursuant to Public Safety Article, §1-312, Annotated Code of Maryland.

12.11.03.12

.12 Equipment Which Qualifies for Funding or Reimbursement.

A. Equipment that qualifies for purchase with funds from the 9-1-1 Trust Fund includes:

- (1) Equipment for connecting and outswitching 9-1-1 calls within a telephone central office;
- (2) Trunking facilities from the central office to a public safety answering point;
- (3) Equipment to connect 9-1-1 calls to the appropriate public safety agency; and
- (4) Equipment for a 3-1-1 system.

B. Equipment necessary to constitute an enhanced 9-1-1 system shall be used for:

- (1) Automatic number identification (ANI);
- (2) Automatic location identification (ALI); or
- (3) Other technical equipment the Board may require.

C. Computer aided dispatch equipment is not a part of a 9-1-1 system, except when the Board determines that an interface is necessary to properly process 9-1-1 calls.

12.11.03.13

.13 Submission of 9-1-1 Plan.

A. A county requesting reimbursement from the 9-1-1 Trust Fund for mandated equipment, 9-1-1 enhancements, or technological advancements shall submit the request to the Board for approval.

B. A county shall submit a plan, request, report, or question to the Chairman, Emergency Number Systems Board.

12.11.03.14

.14 Request for Reimbursement from the 9-1-1 Trust Fund.

A. A county shall submit a request for reimbursement from the 9-1-1 Trust Fund to the Board in a format and according to procedures established by the Board.

B. Reimbursement Processing.

(1) A county public safety answering point director or a 9-1-1 administrator shall submit a written or electronic request for reimbursement to the Board so that it is received at least 2 weeks before a Board meeting at which it is to be considered.

(2) The county's public safety answering point director or 9-1-1 administrator, or a designee, shall attend the meeting at which the request is to be considered.

(3) The Board shall review the request and, if approved, encumber funds up to the amount of the request.

(4) The county shall ensure that the county's procurement laws and policies are followed.

12.11.03.15

.15 Variations or Waivers of Regulations.

A. Upon request by a county, the Board may grant a waiver or variance of the regulations contained in this chapter.

B. A county may submit a written or electronic request for waiver or variance to the Board that includes:

- (1) Number of persons affected;
- (2) Impact of a variance or waiver;
- (3) Alternative methods;
- (4) Technical difficulties;
- (5) Cost.

C. The Board shall consider:

- (1) The information for each of the areas cited in §B of this regulation; and
- (2) The best interests of the affected parties, the applicant, and the Emergency Number Systems Board.

D. An affected party shall have the right to present, either in writing or through oral testimony, information which may bear on the Board's final decision.

E. Processing a Request for Waiver or Variance.

(1) Upon receipt of a written request for waiver or variance, the Board shall:

(a) Within 10 days of receipt of the request, direct a letter to the applicant, which shall:

(i) Acknowledge receipt; and

(ii) Notify the applicant that additional information may be submitted, within 30 days, for the Board to consider during the review; and

(b) Review the documents or conduct a hearing.

(2) If the Board elects to review the documents, the review shall be conducted at a regular Board meeting within 60 days after the expiration of the 30-day period granted to the applicant to submit additional information.

(3) If the Board elects to conduct a hearing, the Board shall:

(a) Notify the applicant and affected parties of the hearing at least 10 days before the hearing and provide the hearing:

(i) Date;

(ii) Time; and

(iii) Location; and

(b) Conduct the hearing according to State Government Article, Title 10, Subtitle 2, Annotated Code of Maryland.

12.11.03.16

.16 9-1-1 System Violations.

A. The Board may instruct the State Comptroller to withhold funds from a county for 9-1-1 system expenditures for a violation under:

- (1) Public Safety Article, §1-312, Annotated Code of Maryland; or
- (2) The regulations in this chapter.

B. Withholding Funds.

(1) If the Board decides to withhold funds, the Board shall:

(a) Identify, in writing, the reason or reasons for withholding funds;

(b) Record the reason or reasons in the minutes of the meeting;

(c) Notify the county that the county has 30 days from the date of notification to respond in writing to the Board; and

(d) Notify the State Comptroller to hold funds, in that county's account within the 9-1-1 Trust Fund, until the Board advises the Comptroller that the funds may be released.

(2) Funds held by the Comptroller under this section may not accrue interest for a county.

(3) Interest income earned on funds held by the Comptroller under this regulation shall be diverted to the 9-1-1 Trust Fund.

C. The Board shall notify the Secretary of action taken under §A or B of this regulation.

12.11.03.17

.17 Decisions of the Board.

After the Board conducts a hearing or a review of a request under this chapter, the Board shall ensure that the Board's decision is:

- A. In writing and stated in the record;
- B. Accompanied by findings of fact and conclusions; and
- C. Provided to the applicant with a copy of the written record containing the information noted under §§A and B of this regulation.