PS COMMITTEE #1
October 15, 2020
Briefing
Revised

M E M O R A N D U M

October 12, 2020

TO: Public Safety Committee

FROM: Susan J. Farag, Legislative Analyst

SUBJECT: Briefing: Emergency Communications Center

PURPOSE: Briefing – No Vote Expected

Today the Committee will receive a briefing and update on the Emergency Communications Center (ECC). Those expected to brief the Committee include:

Chief Marcus Jones, Montgomery County Police Department (MCPD)
Chief Scott Goldstein, Montgomery County Fire and Rescue Service (MCFRS)
Assistant Chief Dinesh Patil, MCPD
Assistant Chief Ed Radcliffe, MCFRS
Cassandra Onley, Acting Director, ECC (MCPD)

Background

The ECC answers all 911 calls (and non-emergency police service calls) dialed in the County. It also dispatches all calls for police (excluding Park Police and Takoma Park Police), fire, and rescue. While the call should be simple and straightforward to the caller, the process behind the scenes is highly complex and depends on appropriate staffing, reliable processes and protocols, and evolving technology to help Fire and Rescue and Police provide timely, effective services to residents.

The 911 system is regulated by the State so that all counties provide similar services and can interoperate to the extent possible. The original technology is over 50 years old and initially relied on AT&T to provide the copper wire, landline service to a 911 Call Center. As communications practices and technologies have evolved over the years, many 911 systems have found it challenging to keep pace. Faced with these new challenges, and also recognizing the new types of real-time information that mobile phones can provide, such as text, photo, and video, many 911 systems across the nation, including the County, are now upgrading to Next Generation

911 (NG911) Internet Protocol-based platforms. Because of the complexity of 911 Emergency Communications services, this background section provides an overview of commercially-available 911 technology, State regulation, and an overview of the changes the County's ECC has been undergoing in recent years. The ECC Update begins on page 5.

Technology: Traditionally, 911 service was provided by communications infrastructure supplied by AT&T (and later by Verizon) over analog, copper landlines. All 911 calls were directed to a local PSAP (the ECC is the County's PSAP). PSAPs could easily trace the caller to a precise physical address, and analog phones on copper lines worked even when the power went out. As communications providers began to offer newer technology, 911 call centers began to experience some operational challenges. For example, Voice over Internet Protocol (VoIP) allowed cable providers to offer broadband phone service. While this technology offered many advantages to customers including voicemail, etc. it often made it much more difficult, and sometimes impossible, for 911 call centers to locate a caller. New mapping technology and regulatory frameworks evolved to help maximize the ability to locate callers. [1]

More recently, the explosion of mobile phones has transformed how people communicate, and many people dropped their landline phones completely. Again, technology providers have developed improved location services, and state and federal regulators have imposed additional requirements on service providers to enhance the ability for PSAPs to locate callers.

Next Generation 911: NG911 is an IP-based emergency communications platform that enables voice, text, and media communication between a caller and the PSAP. This IP-based platform is called an Emergency Services IP Network, or ESInet. An ESInet is broadband-enabled and supports the large data transfers necessary to transmit photos and videos. ESInets also permit PSAPs to share data, which could assist in collaborative emergency responses across jurisdictions.

NG911 provides geospatial technology that helps pinpoint the caller's actual location. Geographic Information System (GIS) data is used to validate address data and route 911 calls to the correct PSAP.

Regulation: In 1979, the State of Maryland created the Emergency Numbers System Board (ENSB) and the 911 Trust Fund. The ENSB is responsible for coordinating the implementation, enhancement, maintenance, and operation of the 24 county 911 systems. It issues guidelines for PSAP operation and distributes capital funding for county 911 emergency systems. It also audits the 911 Trust Fund.

All phone lines in Maryland are charged a 911 user fee. Up until 2019, the fee was $1 per phone account/bill in Maryland. For each dollar collected, $0.25 went to the ENSB (which helps pay capital expenditures), and $0.75 went to the local counties to help fund maintenance costs.

The General Assembly passed Carl Henn's Law in 2019, adopting several recommendations made by the Commission to Advance NG911 Across Maryland.[2] This included

[1] VoIP and 911 Service – FCC Consumer Guide

[2] 2018 Report to the General Assembly from the Commission to Advance NG911 Across Maryland https://msa.maryland.gov/msa/mdmanual/26excom/defunct/html/26n911.html

a fee increase for 911 services, since total revenues only covered about 40% of actual costs. Instead of charging $1.00 per phone bill, the new fee structure now charges $1.25 per phone line, capturing mobile phone accounts that have multiple phone numbers.

Other recent legislative changes: The General Assembly has implemented several significant changes to 911 services in the State, recognizing the need to improve technology. The General Assembly also recognized the need for highly-qualified professional communications specialists.

- **Senate Bill 285**, effective June 1, 2018, established the Commission to Advance NG911 Across Maryland for a term of two years, with reports due to the Governor on December 1, 2018, and December 1, 2019. **Senate Bill 47**, effective June 1, 2020, extended the term of the Commission another two years and requires additional annual reports. [3]

- **Senate Bill 1053**, effective June 1, 2018, amended the Maryland Property Tax Code, allowing a County to grant certain property tax credits for 911 Public Safety Telecommunicators. The County has not yet acted on this legislation to amend County Code.

- **Senate Bill 339** (Carl Henn's Law), effective July 1, 2019, increases 911 fees by $0.25 and charges fees to each phone number rather than to one phone bill.

- **Senate Bill 838**, effective October 1, 2020, changes the name of the ENSB to the Maryland 911 Board. The bill also expands the roles and responsibilities of the Maryland 911 Board, PSAPs, and counties. Businesses with multiple phone lines must ensure that callers can dial 911 directly without any additional steps.

County Procedures, Staffing, and Technology: The County's ECC has two geographical locations to provide seamless 911 service in the event of a natural disaster or system failure at one location. While the primary location is called the Public Safety Communications Center (PSCC) and the alternate location is the Alternate Emergency Communications Center (AECC), they are functionally equivalent.

For the past eight years, the County's ECC has been undergoing complex staffing, procedural, and technological changes. Historically, the ECC operated a bifurcated model with separate Police Department and Fire and Rescue Service call takers and dispatchers. All Police staff were civilian. MCFRS call takers were civilian, but their dispatchers were uniformed Firefighters. Police call takers initially answered all incoming calls to determine if the caller needed police, fire, or medical assistance. If the caller needed police assistance, the call *stayed* on the police side of the ECC operations. If the caller needed fire or medical, the initial police call taker routed the caller to MCFRS call taker (opposite side of the same room), who then further assessed the situation.

In FY13, the Public Safety Committee began discussing changes to ECC operations with

[3] 2019 Report to the General Assembly from the Commission to Advance NG911 Across Maryland

Executive Branch staff. This discussion began with an interest in combining and cross-training all call-takers so that all 911 calls could be processed without the need for a second transfer step. Subsequently, Executive staff conducted a broader analysis of ECC functions including the several interrelated components affecting the ECC (including the Public Safety System Modernization (PSSM) project and the Computer Aided Dispatch (CAD) system, as well as other staffing and civilianization issues). The Executive also commissioned a report from an outside consultant to provide guidance for how to structure ECC operations going forward. In FY14, the Executive and Council determined all ECC operations (MCPD and MCFRS call taking, MCPD and MCFRS dispatch) should be consolidated into MCPD. The goal of consolidation was to realize greater service efficiencies through the elimination of redundant infrastructure, personnel functions, and command and control issues, while maintaining consistent service delivery to the public.

The Committee has received regular updates on this process over the years. The transition has been slow, primarily due to the critical need to maintain 911 operations during all the necessary process, staffing, training, and technology changes. All stakeholders agreed it was better to have a slower process to ensure a safe and accurate transition. Since 2014, the following objectives have been completed:

- New Emergency Fire Dispatch protocol implemented (FY16);
- New Emergency Police Dispatch protocol implemented (FY17);
- Operational oversight transferred to Police (FY17);
- New Computer Aided Dispatch (FY17);
- MCFRS civilian personnel transferred to Police Department (FY17);
- Structural floor renovations to enhance consolidation at both the PSCC and the AECC (FY17);
- Conducted Call-Taker cross training as well as new PSECS UCT training (FY17, 18, 19);
- New Public Safety Emergency Communications Specialist classification series implemented, reflecting enhanced training and time in service (FY16);
- Purchased ECC Property in FY17;
- Transitioned to a Universal Call Taker model and eliminated additional transfer (FY20); and
- New Radio System Infrastructure Project (projected cutover December 2020).

The following chart shows the major fiscal investments in the ECC over the past several years to assist in consolidation, training, staffing, and systems upgrades.

Major Fiscal Investments in the Emergency Communications Center		
Fiscal Year	**Investment**	**Cost**
FY15	MCPD and MCFRS developed a transition plan and hired a Police Captain as the transition leader. Funding was included in the MCFRS operating budget to begin a four-year plan to civilianize Fire dispatch positions, beginning in FY16.	$225,329
FY16	23 new full-time positions in the Police operating budget to upstaff the ECC.	$770,419
FY17	Three positions added, including Deputy Director, Quality Assurance Specialist Position, and IT Specialist	$348,703
FY18	Consolidation Transition Director Term Captain Position	$193,000
FY18	Funding shift from MCFRS to MCPD, including nine additional civilian call taker positions	$2,307,819
FY18	PSCC Next Gen 911	$979,307
FY19	Next Gen 911 upgrades	$365,977
FY19	Purchased leased space for the ECC, HVAC and other upgrades $17,569,000 (CIP)	$17,569,000
FY20	Annualization of Next Gen 911 upgrades started in FY19	$717,294
FY21	New LCSW Position at the ECC	$83,697
FY21	Phase II Electrical and HVAC Systems Upgrade (CIP)	$14,931,000

This chart shows the 911 fee revenue distributions from the State to Montgomery County over the past several fiscal years.

State 911 revenues		
Fiscal Year	**Budgeted**	**Actual**
FY18	$7,000,000	$7,742,320
FY19	$7,000,000	$7,737,132
FY20	$12,000,000	$10,621,514

This chart reflects major projects for which the State ENSB has provided funding.

Projects for State Funding			
Service	**Process of Payment**	**Dates**	**ENSB Cost**
KOVA	IT Commodities/ENSB	6/6/20-6/5/21	$71,967.80
Teleira	IT Commodities/ENSB	7/1/20-6/30/21	$53,402.36
Voiance	ENSB (9-1-1) & MCPD PR for PO (Field Translations)	7/1/20-6/30/21	$100,000
Motorola Priority Dispatch Maintenance	ENSB	7/1/20-6/30/21	$301,447.07
Rapid Deploy	IT Commodities/Safeware /ENSB	?	$161,632.65
AT&T	ENSB		TBD

ECC Update

Staffing: The ECC has 185 staff who are civilian Police Department employees. MCFRS provides 13 positions on three shifts, for a total of 39 staff, plus a Communications Chief. An organizational chart is provided on ©2. Current vacancies include 20 Public Safety Emergency Communication Specialist (PSECS) positions, three supervisors, a new social worker position, a training instructor, the Director position, and four Firefighter dispatch positions. The new social worker position was added during the FY21 Operating Budget, and the announcement for this position closed October 9, 2020. Interviews for the Director position began October 9 as well. Interviews for the Training Instructor position begin October 22. MCFRS plans to hold a dispatch class for uniformed firefighters in February 2021 to address its vacant positions.

Attrition has been a significant concern for several years. At the last update provided to the Committee (January 2019), the annual attrition rate was about 15%. That has increased over the past several fiscal years to almost 34%. Executive staff advise that the County is in the bottom 25% for retention among Maryland's PSAPs. It advises the most significant challenges to hiring and retention include background checks, the nature of the job, and stress. For Fire dispatch, attrition is mainly based on promotions and firefighters voluntarily transferring back to field operations.

Addressing attrition and retention: Recognizing how critical it is to hire and retain excellent staff, the Department implemented a new employee classification series that reflects training and experience through promotions and pay increases. There have been several other efforts undertaken, or proposed, to help with staffing:

In an effort to facilitate hiring, Montgomery College developed a new 911 Dispatch Academy.[4] Providing this training opportunity before hiring could also help improve retention since prospective employees would gain a more accurate understanding of what the job entails. The program was first offered during the 2019-2020 school year; however, since certain aspects of the training must be conducted in-person, it was temporarily postponed due to COVID-19 social distancing restrictions.

[4] Montgomery College 911 Dispatch Academy

Recognizing the need to provide mental health support to staff in high-stress working conditions, the Council approved funding for a new Social Worker position in the FY21 Operating Budget. While the Council limited most FY21 budgets to a maintenance of services funding level, an exception was made for this position in the Police Department budget.

Another FY21 Operating Budget recommendation included the proposed MCGEO agreement, which would have established a new pension group for Public Safety Emergency Communications Specialists, providing a defined benefit plan. This provision had an estimated cost of $200,000 in FY21 and each year thereafter. Council did not approve any collective bargaining provisions that had associated costs due to revenue constraints related to the COVID-19 pandemic.

As noted earlier in the staff report, the General Assembly also passed enabling legislation that authorizes counties to create property tax credits for 911 Telecommunicators.

Call Volume: The following chart provides data on call volumes to the ECC, including call response times (the time it takes for a PSECS to pick up the phone) as well as how long it takes to dispatch Police and Fire services.[5] It is important to note that the PSECS often remains on the line with the caller after resources have been dispatched, in an effort to gather more information and/or provide verbal assistance to the caller.

ECC Call Volume and Call Response Times

Fiscal Year	Call Volume	Call Response Rate Answered Within 10 Seconds	Phone to Police Dispatch Time	Phone to Fire (ALS) Dispatch Time
FY17	884,859	93%	3:23 minutes	3:17 minutes
FY18	852,955	91%	3:20 minutes	3:21 minutes
FY19	838,325	90%	3:15 minutes	3:27 minutes
FY20	788,664	96%	3:29 minutes	3:37 minutes

Next Generation 911: The County has been working with the State and the Metropolitan Washington Council of Governments (MWCOG) to transition to NG911. The County has contracted with AT&T for ESInet and Next Generation Core Services. To date, fiber circuits for ESInet have been installed at both the PSCC and the AECC. The ECC plans to go live with a new phone system and AT&T ESInet service during the first quarter of 2021.

The ECC has a dedicated GIS position, which will allow the ECC to move from legacy Master Street and Address Guide (MSAG) to ESInet GIS for the authoritative street and address guide. The GIS person is currently updating the GIS point and address file to ensure it is National Emergency Number Association (NENA) compliant.

[5] For a break-down of Police-specific call data, please see the Preliminary Report of the Task Force to Reimagine Public Safety, pp. 3-10.

Text-to-911: The ECC implemented Text-to-911 last spring and tested and verified the system by working with carriers that provide this service in our region. The soft launch was April 13. The State of Maryland launched Text-to-911 on August 20.

Discussion Issues

1. Originally, part of the planned consolidation process was to civilianize uniformed firefighter dispatch positions. Due to the complexities of consolidation, training, hiring, and staff retention, this initiative has been temporarily put on hold. It would be helpful for the Committee to understand the Fire dispatch process and understand how uniformed firefighters aid in the dispatch process. What are the advantages/disadvantages to civilianizing these positions?
2. How has COVID-19 impacted daily operations in terms of staffing, and types and volume of calls?
3. How has the transfer of Animal Services calls impacted daily operations?
4. Several initiatives meant to help with retention were not approved this year, primarily due to severe revenue constraints. What are the most helpful steps the County can take to help increase retention of highly-qualified staff?
5. FY20 911 fee revenue distributions to the County were about $1.4 million lower than projected. Is the reason for the shortfall understood? What impact did the reduced funding have on operations, if any?
6. Once NG911 is fully implemented, will there be a need for additional staff to review and analyze data being received in real time?

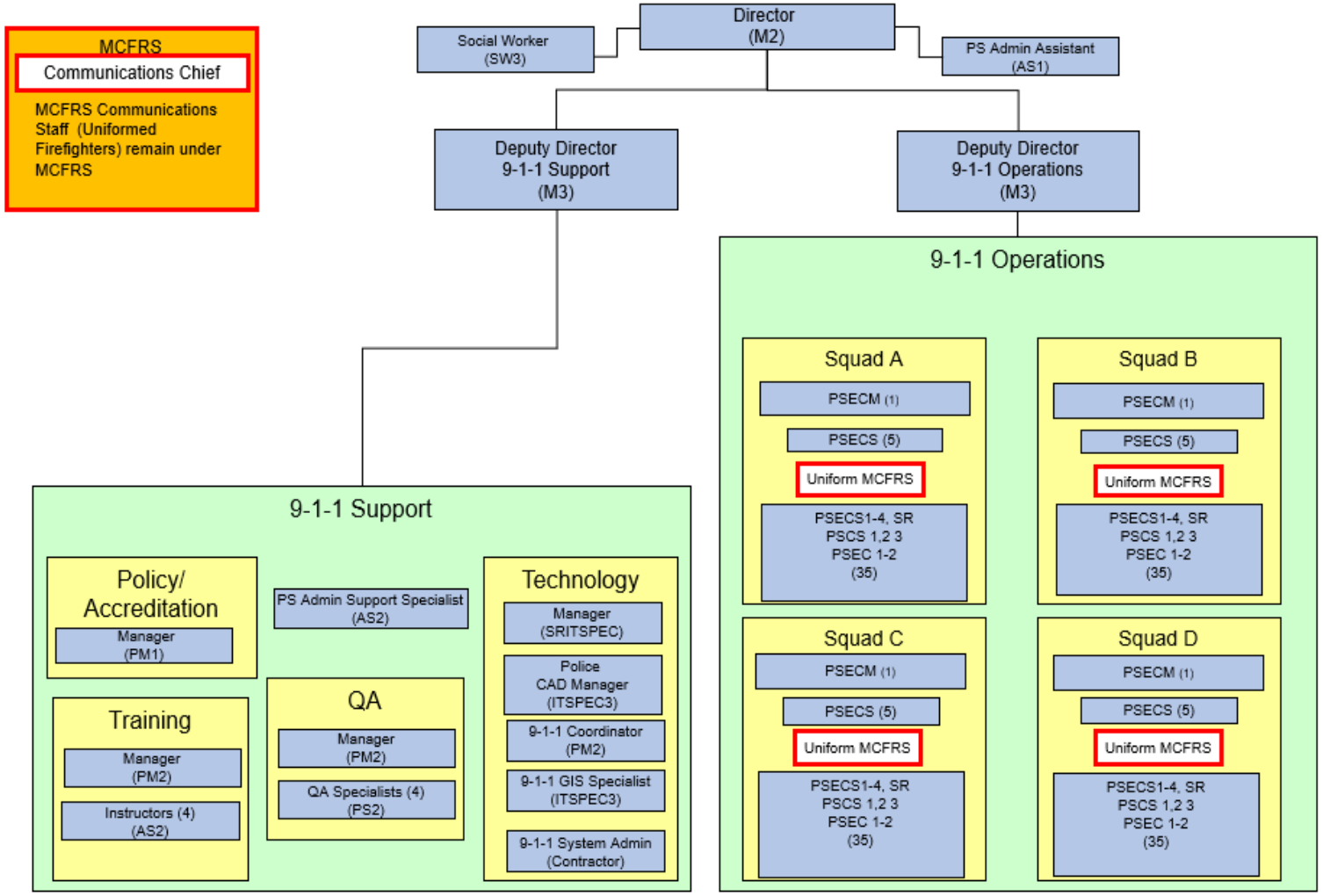
This staff report contains:	**Circle #**
ECC PowerPoint	1-11

ECC Council Public Safety Presentation

10.15.2020

Information on staffing (organizational chart, vacancies, attrition, overtime, hiring/retention challenges, the MC training program)

MONTGOMERY COUNTY MARYLAND
DEPARTMENT OF POLICE
9-1-1 Emergency Communications Center



Revision Date: July 2020

Information on staffing (organizational chart, vacancies, attrition, overtime, hiring/retention challenges, the MC training program)

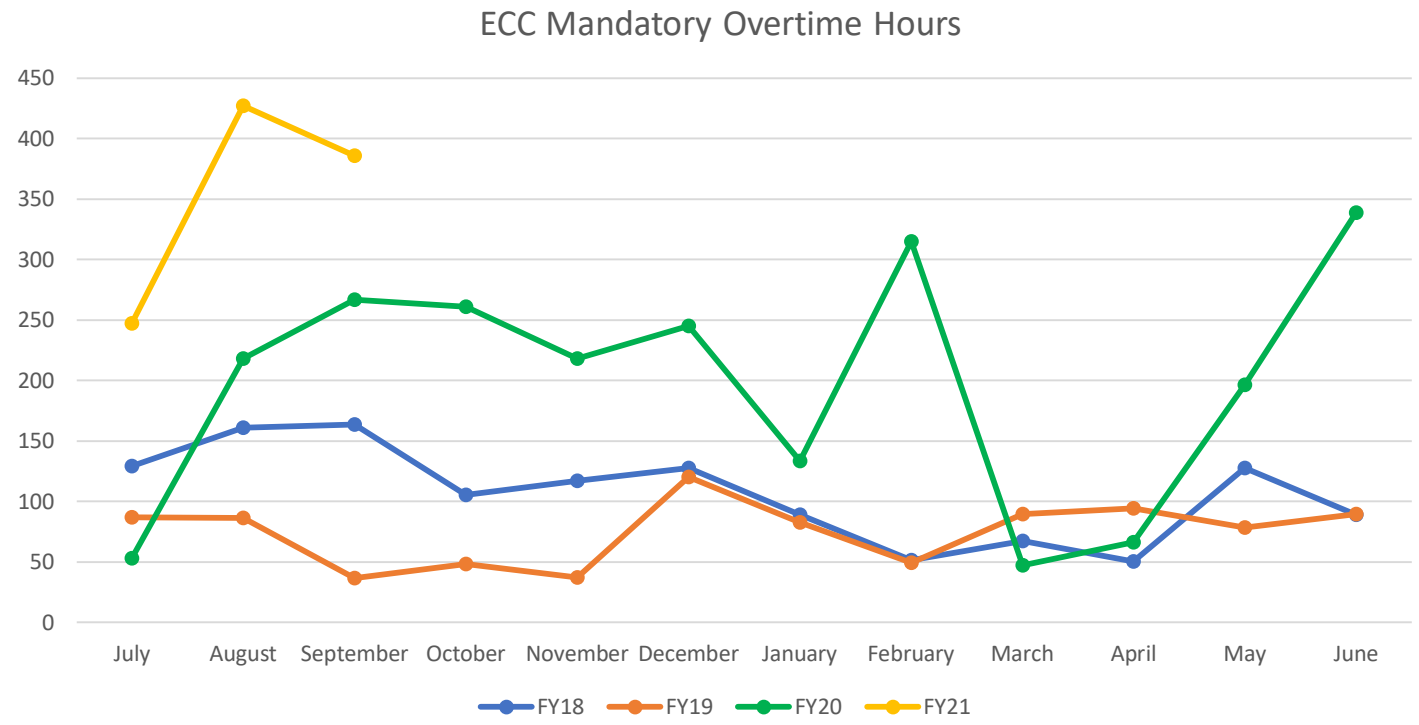
Current vacancies:

PSECS 20
PSECS Supervisor 3
Social Worker 1 – Announcement closed 10/9/2020
Training Instructor 1 – Interviews 10/22/2020
Director 1 – Interviews 10/9/2020

Possible Attrition within 1-5 years:

PSECS 2
PSECS Supervisor 1
PSECS Manager 1
Deputy Director 2
Training Instructor 1
Technology 2

Information on staffing (organizational chart, vacancies, attrition, overtime, hiring/retention challenges, the MC training program)



Information on staffing (organizational chart, vacancies, attrition, overtime, hiring/retention challenges, the MC training program)

Hiring / Retention Challenges:

Between 2016 and 2018, Montgomery County ECC's average retention rate was 67.1%.

In 2018, the attrition rate was 33.6%, retention rate of 66.4%. Montgomery County is in the bottom 25% for retention among Maryland PSAPs.

Challenges:
Background, Nature of the job, Stress

MC 9-1-1 Dispatch Program:

Challenges: Pandemic

Revised program

Call volume over the past several years, call response times

Call Volume:	**Call Response Times:**	**Phone to Police Dispatch Times:**	**Phone to Fire (ALS)Dispatch Times**
2017: 884,859	93% within 10 seconds	3:23 minutes	3:17 minutes
2018: 852,955	91% within 10 seconds	3:20 minutes	3:21 minutes
2019: 838,325	90% within 10 seconds	3:15 minutes	3:27 minutes
2020: 788,664	96% within 10 seconds	3:29 minutes	3:37 minutes

Universal Call Taker Update

We stopped transferring calls to MCFRS February 2, 2020.

Last employee was checked off on March 12, 2020.

Next Gen 911 update

Fiber circuits for ESInet have been installed at PSCC and AECC.

Update phone CPE is in progress – Plan to go live with new phone system and AT&T ESInet service 1st Quarter of 2021.

GIS – We have a dedicated GIS person – this was necessary as ESInet has GIS integrated so we will move from legacy MSAG (master street and address guide) to ESInet GIS for the authoritative street and address guide. Our GIS person is currently updating the GIS point and address file so when the time comes, we will have a NENA compliant version. Until then, the PSAP boundary (routing) layer needs final touches and agreement with boundary jurisdictions, there have been a lot of work these jurisdiction and the vast majority of work has been completed. We are on track to finish these before Jan 2021.

Text to 911

Internally implemented this spring – tested and verified working with carriers that provide service in our area. Soft Launch was April 13, 2020.

Maryland State Launch August 20, 2020.

Mission Critical Partners provided a Final Report on the Maryland Statewide Text-to-9-1-1 Public Education Campaign. It was noted Montgomery County PIO had the highest social media post. Also, there was only one outlet that covered the story in Spanish (Montgomery County media).

ENSB (Now known as Maryland 9-1-1 Board)/911 fee distribution to the county and how they have changed

The state passed legislation to change the 911 fee structure from a per account fee to a per line fee. The fees were also increased.

Payments for acquisitions, certain operations & maintenance are covered as long as they are approved by the Board, however some of the fees trust fund deposits are pro-rated by the money collected from the County. See pg 15, #4-ii in the law (4) Money collected from the prepaid wireless E 9–1–1 fee [may] SHALL 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.

The state enacted legislation to pay for ESInet services.

The transfer of Animal Services calls to OAS

Starting August 3, 2020, OAS dispatch transitioned from a 5 day/ 12-hour schedule to a 5 day/ 16-hour schedule. OAS staff answers calls starting at 0630 hours and ending 2145 hours, Monday thru Friday. ECC covers OAS on-call hours as well as Saturday and Sunday for now.

We updated our animal services policy to reflect the change where OAS would receive, and process calls during certain hours during the day Monday through Friday. Late evening into early morning and on weekends, ECC still processes some animal service calls. Typically, these calls are for vicious animals, animal abuse, or a call to rescue an animal. These calls require a police response and may require an animal services call out upon verification.

Our interactive message on our non-emergency line was updated so callers are directed to the correct call taker during OAS open hours or ECC when OAS call takers are not available. During the hours OAS processes calls, they will also dispatch calls. If ECC process a call, ECC will dispatch the call. Processing and dispatching calls by ECC has declined as more OAS staff increases.