AGENDA ITEM #9
July 30, 2019

Subject: Public Hearing and Action: Amendment to the FY19-24 Capital Improvements Program, Public Safety System Modernization	
Purpose: To receive testimony/final action - vote expected	
Analyst: Susan J. Farag, Legislative Analyst Dr. Costis Toregas, IT Adviser	**Committee: Directly to Council**
Keywords: #PublicSafetyRadioSystem, CIP Amendment, Public Safety System Modernization, Radio System Infrastructure Program, Public Safety Radio Towers	

EXPECTED ATTENDEES

Please refer to public hearing speakers' list for this item.

COUNCIL DECISION POINTS

The Council will receive testimony on the CIP amendment that was introduced on July 9. Council staff will make a recommendation to revise this amendment to add more specificity to the location of the Bretton Woods radio site. The Council will act on the amendment.

DESCRIPTION/ISSUE

This amendment addresses the Radio System Infrastructure sub-project of the PSSM.

The CIP amendment, as introduced on July 9, adds street addresses to the project description form to ensure that the RSIP meets the targeted cutover date of December 2020 within the current appropriated level of funding. To meet this date and stay within budget, the Executive must use the 22 sites identified by the vendor (Motorola). The amended PDF is attached on ©1-5 and includes a list of site locations (©4) and a map (©5). The draft resolution is attached on ©6. This amendment did not go to Committee.

Council Staff Recommendation to Add Specificity to the Bretton Woods Site: On July 9, the County Executive sent a letter to the Council outlining his intent to co-locate a tower with the State at the original ICC/Georgia Avenue location. The Executive also expressed intent to move forward with an alternative site on the Bretton Woods property. The Executive's letter (see ©14-17) states in part that, "the process to research, finalize the location and permit this alternate site was predicted to take over a year, but I have insisted that a site be located, assessed, qualified and community vetted in months instead of years to be able attempt *[sic]* to meet the December 2020 deadline." The letter further states that "if the alternative Bretton Woods site cannot be ready by December 2020, I commit to bringing it on-line promptly, so we have the complete coverage we contracted for – 95%."

To see how quickly the process may proceed, Council staff requested additional information on the projected costs and timelines for the alternative Bretton Woods site. Executive staff provided a list of approximately 25 steps required to approve the site, including the need to receive various approvals from the M-NCPPC, FAA, FCC, Tower Committee, and the Historic Preservation Office (Response attached at ©18).

Council staff is concerned that the Executive will not meet the targeted cutover date of December 2020, with a system that provides 95/95 coverage of the County, as required by the Council in its June 21 letter to the Executive (©12-13). For these reasons, Council staff recommends the Council consider a revised amendment (©7-11) that adds geographic coordinates for the original Bretton Woods radio site. This level of specificity in site location will provide the best opportunity to meet the December 2020 cutover date for the new radio system infrastructure.

SUMMARY OF KEY DISCUSSION POINTS

- The Council will act on either the July 9 amendment or the July 30 revised amendment to the CIP Amendment.

This report contains:

F:\Farag\Packets\Council\PSSM Public Hearing and Action July 30.docx

Public Safety System Modernization
(P340901)

Category	General Government	**Date Last Modified**	01/11/19
SubCategory	County Offices and Other Improvements	**Administering Agency**	County Executive
Planning Area	Countywide	**Status**	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY18	Rem FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	9,543	3,379	5,229	935	935	-	-	-	-	-	-
Construction	33,594	2,635	15,859	15,100	15,100	-	-	-	-	-	-
Other	67,615	67,615	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	**110,752**	**73,629**	**21,088**	**16,035**	**16,035**	**-**	**-**	**-**	**-**	**-**	**-**

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY18	Rem FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
G.O. Bonds	55,591	25,752	16,739	13,100	13,100	-	-	-	-	-	-
Short-Term Financing	42,356	38,179	2,177	2,000	2,000	-	-	-	-	-	-
Current Revenue: General	9,826	6,719	2,172	935	935	-	-	-	-	-	-
Federal Aid	2,947	2,947	-	-	-	-	-	-	-	-	-
Contributions	32	32	-	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	**110,752**	**73,629**	**21,088**	**16,035**	**16,035**	**-**	**-**	**-**	**-**	**-**	**-**

OPERATING BUDGET IMPACT ($000s)

Impact Type	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance	3,600	600	600	600	600	600	600
Program-Staff	1,200	200	200	200	200	200	200
Program-Other	1,584	264	264	264	264	264	264
NET IMPACT	**6,384**	**1,064**	**1,064**	**1,064**	**1,064**	**1,064**	**1,064**

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 20 Approp. Request	(96)	Year First Appropriation	FY09
Cumulative Appropriation	110,848	Last FY's Cost Estimate	110,848
Expenditure / Encumbrances	98,889		
Unencumbered Balance	11,959		

PROJECT DESCRIPTION

This program will provide for phased upgrades and modernization of computer aided dispatch (CAD), law enforcement records management system (LE RMS), and voice radio systems used primarily by the County's public safety first responder agencies including Police, Fire and Rescue, Sheriff, Corrections and Rehabilitation, and Emergency Management and Homeland Security. The modernization will include replacement of the current CAD/LE RMS system, replacement of public safety mobile and portable radios, upgrade of non-public safety mobile and portable radios, and replacement of core voice radio communications infrastructure. The previously approved Fire Station Alerting System Upgrades project (CIP #451000) was transferred to this project in order to coordinate the upgrades with the new CAD system. The alerting system upgrades will modernize the fire station alerting systems at 43 existing work sites, maintaining the ability to notify fire and rescue stations of emergencies. The alerting system, including audible and data signals, is essential for the notification of an emergency and the dispatch of appropriate response units from the County. As voice, data, and video are beginning to converge to a single platform, this project will provide a pathway to a modern public safety support infrastructure that will enable the County to leverage technology advances and provide efficient and reliable systems for first responders. This project will follow the methodologies and strategies presented in the Public Safety Systems Modernization (PSSM) plan completed in July 2009.

— ADD TEXT AND MAP HERE —

COST CHANGE

Reduction in Federal Aid of $96,000.

PROJECT JUSTIFICATION

The public safety systems require modernization. The CAD system is reaching the end of useful life and does not meet the County's current operational requirements, impacting the response time of first responders to 9-1-1 calls. The CAD Roadmap Study, completed in March 2009, recommended replacement of the system to address existing shortcomings and prepare for the next generation 9-1-1 systems. The manufacturer's support for the voice radio system has begun to be phased out as of December 31, 2009. Beyond that date, the manufacturer will only continue to provide system support on an as available basis, but will not guarantee the availability of parts or technical resources. The CAD modernization has initiated a detailed planning phase that included the use of industry experts to assist with business process analysis and to develop detailed business and technical requirements for the new CAD system. This process will allow the County to incorporate lessons learned and best practices from other jurisdictions. As more of the County's regional partners migrate to newer voice technologies, it will affect interoperable voice communications. To ensure that the County maintains reliable and effective public safety (voice radio) communications for the operations of its first responders and to sustain communications interoperability for seamless mutual aid among its regional partners, the County needs to implement a project to upgrade and modernize its portable and mobile radio units and subsequently the radio voice communications infrastructure. Acceleration of the public safety radio purchases was initiated to take advantage of a Partial Payment in Lieu of Re-Banding offer from Sprint/Nextel toward the financing of new, upgraded, P-25 compliant public safety radios and to meet the Federal Communications Commission (FCC) mandated 800 MHZ frequency rebanding requirements for nationwide public safety radio frequency interoperability. Now, the installation of the new core radio communication infrastructure is needed. The fire station alerting system upgrades were identified as a need under Section 5 of the MCFRS Master Plan (adopted by the County Council in October 2005) and detailed in the Station Alerting and Public Address (SA/PA) System for Fire/Rescue Stations, Rev 1, 2006. This project allows for the continuous and seamless functioning of the alerting systems within each fire station. A preliminary survey by DTS of existing conditions at all stations revealed system-wide concerns, including inadequate spare parts inventory and lack of available maintenance support for alerting systems.

OTHER

$20.936 million was appropriated in FY11 to purchase P-25 compliant radios that allowed the County to complete immediate re-banding within the 800 MHz frequency as required by the FCC. The radio replacement program includes the M-NCPPC Montgomery County Park Police. The future purchase of public safety radios (other than to replace broken equipment) must be able to be supported by a P25 Phase-2 compliant infrastructure. The use of State of Maryland infrastructure will be aggressively pursued in

order to minimize costs to Montgomery County. The CAD procurement request will reflect the County's interest in maintaining the station alerting functionality at the current level or better through the CAD system. The RFP for CAD replacement will include replacement of the following systems: CAD, mapping, and the existing Law Enforcement Records Management and Field Reporting systems. Coordination with participating department/agencies and regional partners will continue throughout the project.

FISCAL NOTE

Funding in FY09 included Urban Area Security Initiative (UASI) grant funding of $2.055 million and Fire Act grant funding of $988,000. Funding schedule reflects FY18 supplemental adding $32,000 in Contributions for additional equipment required for Local Fire Rescue Departments (LFRDs). FY18 funding switch is due to a transfer of Current Revenue General for $283,000 from Technology Modernization (MCG) project offset by an equal reduction in Short Term Financing.

COORDINATION

PSSM Executive Steering Committee, Executive Program Directors, Department of Technology Services, Department of Police, Montgomery County Fire and Rescue Service, Sheriff's Office, Department of Correction and Rehabilitation, Office of Emergency Management and Homeland Security, Department of Transportation , Department of Liquor Control, Montgomery County Public Schools (MCPS), Maryland-National Park and Planning Commission (M-NCPPC) Park Police, Washington Metropolitan Area Transit Authority (WMATA)

Proposed new language for PSSM CIP:

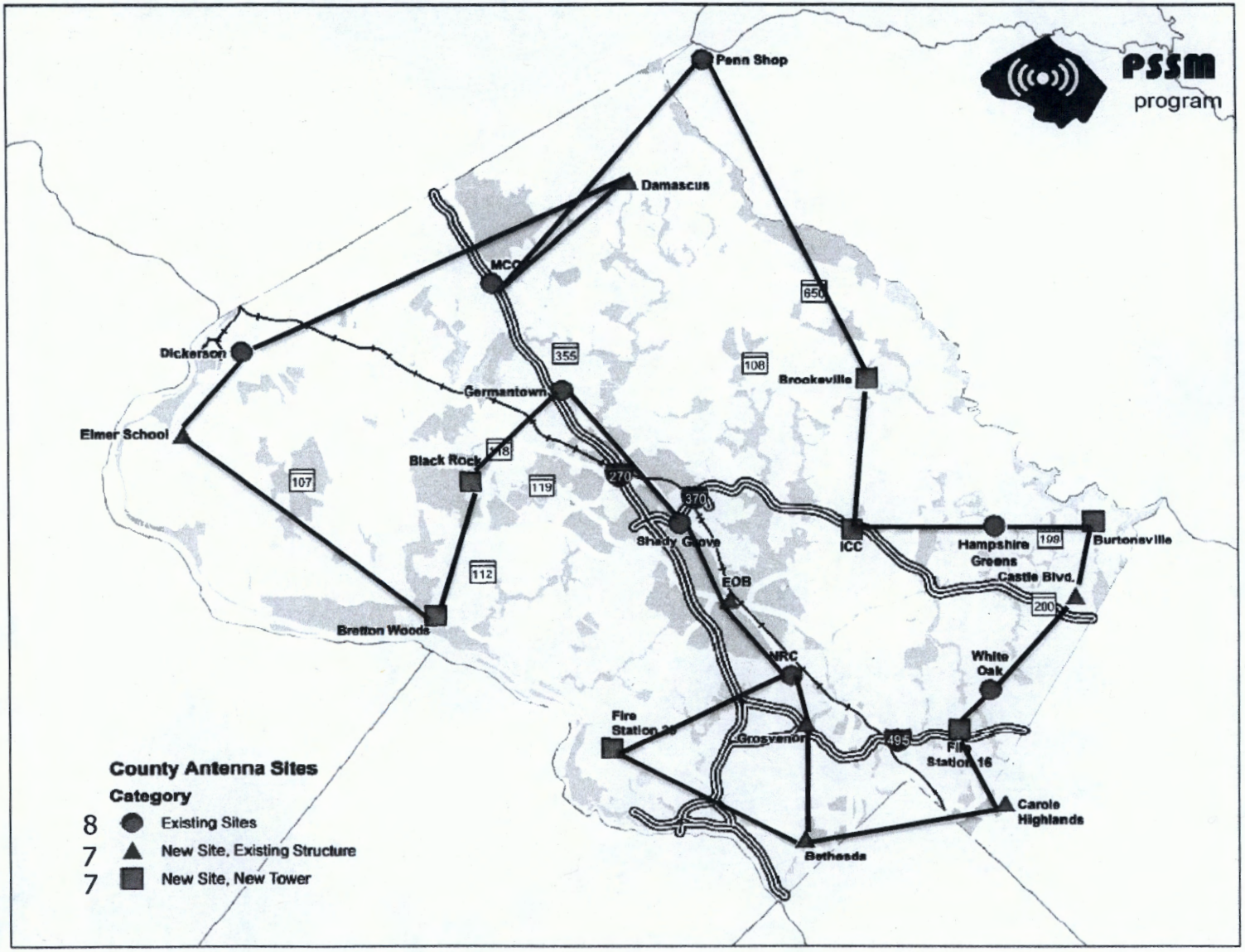
The core voice radio communications infrastructure replacement has identified the following 22 trunked simulcast antenna sites for the new system, as also shown on the map below:

Sites	Location
Bethesda	5202 River Road
Black Rock	17410 Black Rock Road
Bretton Woods	15700 River Road
Brookeville	4301 Brookeville Road
Burtonsville	16135 Old Columbia Pike
Carole Highlands	1616 Hannon Street
Castle Blvd.	14000 Castle Blvd.
Damascus	26154 Ridge Road
Dickerson	21200 Martinsburg Road
Elmer School	18500 Elmer School Road
Executive Office Building	101 Monroe Street.
Fire Station 16	111 University Blvd. East
Fire Station 30	9404 Falls Road
Germantown	20235 Observation Drive
Grosvenor	10101 Grosvenor Place
Hampshire Greens	15916 New Hampshire Avenue
ICC/Georgia Avenue	15912 Georgia Avenue
Montgomery County Correctional Facility	22880 Whelan Lane
Nuclear Regulatory Commission	11555 Rockville Pike
Penn Shop	18800 Penn Shop Road
Shady Grove	8620 Pleasant Road
White Oak	11215 Oakleaf Drive

The Executive will locate these simulcast antenna sites at these identified sites to minimize costs to the County and meet the target cutover date of December 2020.

Radio System Sites & Microwave Links Map

PSSM program



Resolution No: _____
Introduced: July 9, 2019
Adopted: _____

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND

Lead Sponsors Councilmembers Katz and Riemer

SUBJECT: Amendment to the FY19-24 Capital Improvements Program
Montgomery County Government
County Executive
Public Safety System Modernization (No. 340901)

Background

1. Section 302 of the Montgomery County Charter provides that the Council may amend an approved capital improvements program at any time by an affirmative vote of no fewer than six members of the Council.

2. This amendment identifies the specific 22 sites recommended by the County's radio tower vendor needed to meet the public safety standard of 95% coverage by December 2020.

Action

The County Council for Montgomery County, Maryland, approves the following action:

The FY19-24 Capital Improvements Program of the Montgomery County Government is amended to revise the Public Safety System Modernization project (No. 340901), as reflected on the attached project description form.

This is a correct copy of Council action.

_____
Megan Davey Limarzi, Esq.
Clerk of the Council

(6)

Public Safety System Modernization
(P340901)

Category	General Government	**Date Last Modified**	01/11/19
SubCategory	County Offices and Other Improvements	**Administering Agency**	County Executive
Planning Area	Countywide	**Status**	Ongoing

EXPENDITURE SCHEDULE ($000s)

Cost Elements	Total	Thru FY18	Rem FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	9,543	3,379	5,229	935	935	-	-	-	-	-	-
Construction	33,594	2,635	15,859	15,100	15,100	-	-	-	-	-	-
Other	67,615	67,615	-	-	-	-	-	-	-	-	-
TOTAL EXPENDITURES	**110,752**	**73,629**	**21,088**	**16,035**	**16,035**	**-**	**-**	**-**	**-**	**-**	**-**

FUNDING SCHEDULE ($000s)

Funding Source	Total	Thru FY18	Rem FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
G.O. Bonds	55,591	25,752	16,739	13,100	13,100	-	-	-	-	-	-
Short-Term Financing	42,356	38,179	2,177	2,000	2,000	-	-	-	-	-	-
Current Revenue: General	9,826	6,719	2,172	935	935	-	-	-	-	-	-
Federal Aid	2,947	2,947	-	-	-	-	-	-	-	-	-
Contributions	32	32	-	-	-	-	-	-	-	-	-
TOTAL FUNDING SOURCES	**110,752**	**73,629**	**21,088**	**16,035**	**16,035**	**-**	**-**	**-**	**-**	**-**	**-**

OPERATING BUDGET IMPACT ($000s)

Impact Type	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance	3,600	600	600	600	600	600	600
Program-Staff	1,200	200	200	200	200	200	200
Program-Other	1,584	264	264	264	264	264	264
NET IMPACT	**6,384**	**1,064**	**1,064**	**1,064**	**1,064**	**1,064**	**1,064**

APPROPRIATION AND EXPENDITURE DATA ($000s)

Appropriation FY 20 Approp. Request	(96)	Year First Appropriation	FY09
Cumulative Appropriation	110,848	Last FY's Cost Estimate	110,848
Expenditure / Encumbrances	98,889		
Unencumbered Balance	11,959		

PROJECT DESCRIPTION

This program will provide for phased upgrades and modernization of computer aided dispatch (CAD), law enforcement records management system (LE RMS), and voice radio systems used primarily by the County's public safety first responder agencies including Police, Fire and Rescue, Sheriff, Corrections and Rehabilitation, and Emergency Management and Homeland Security. The modernization will include replacement of the current CAD/LE RMS system, replacement of public safety mobile and portable radios, upgrade of non-public safety mobile and portable radios, and replacement of core voice radio communications infrastructure. The previously approved Fire Station Alerting System Upgrades project (CIP #451000) was transferred to this project in order to coordinate the upgrades with the new CAD system. The alerting system upgrades will modernize the fire station alerting systems at 43 existing work sites, maintaining the ability to notify fire and rescue stations of emergencies. The alerting system, including audible and data signals, is essential for the notification of an emergency and the dispatch of appropriate response units from the County. As voice, data, and video are beginning to converge to a single platform, this project will provide a pathway to a modern public safety support infrastructure that will enable the County to leverage technology advances and provide efficient and reliable systems for first responders. This project will follow the methodologies and strategies presented in the Public Safety Systems Modernization (PSSM) plan completed in July 2009.

— ADD TEXT AND MAP HERE —

COST CHANGE

Reduction in Federal Aid of $96,000.

PROJECT JUSTIFICATION

The public safety systems require modernization. The CAD system is reaching the end of useful life and does not meet the County's current operational requirements, impacting the response time of first responders to 9-1-1 calls. The CAD Roadmap Study, completed in March 2009, recommended replacement of the system to address existing shortcomings and prepare for the next generation 9-1-1 systems. The manufacturer's support for the voice radio system has begun to be phased out as of December 31, 2009. Beyond that date, the manufacturer will only continue to provide system support on an as available basis, but will not guarantee the availability of parts or technical resources. The CAD modernization has initiated a detailed planning phase that included the use of industry experts to assist with business process analysis and to develop detailed business and technical requirements for the new CAD system. This process will allow the County to incorporate lessons learned and best practices from other jurisdictions. As more of the County's regional partners migrate to newer voice technologies, it will affect interoperable voice communications. To ensure that the County maintains reliable and effective public safety (voice radio) communications for the operations of its first responders and to sustain communications interoperability for seamless mutual aid among its regional partners, the County needs to implement a project to upgrade and modernize its portable and mobile radio units and subsequently the radio voice communications infrastructure. Acceleration of the public safety radio purchases was initiated to take advantage of a Partial Payment in Lieu of Re-Banding offer from Sprint/Nextel toward the financing of new, upgraded, P-25 compliant public safety radios and to meet the Federal Communications Commission (FCC) mandated 800 MHZ frequency rebanding requirements for nationwide public safety radio frequency interoperability. Now, the installation of the new core radio communication infrastructure is needed. The fire station alerting system upgrades were identified as a need under Section 5 of the MCFRS Master Plan (adopted by the County Council in October 2005) and detailed in the Station Alerting and Public Address (SA/PA) System for Fire/Rescue Stations, Rev 1, 2006. This project allows for the continuous and seamless functioning of the alerting systems within each fire station. A preliminary survey by DTS of existing conditions at all stations revealed system-wide concerns, including inadequate spare parts inventory and lack of available maintenance support for alerting systems.

OTHER

$20.936 million was appropriated in FY11 to purchase P-25 compliant radios that allowed the County to complete immediate re-banding within the 800 MHz frequency as required by the FCC. The radio replacement program includes the M-NCPPC Montgomery County Park Police. The future purchase of public safety radios (other than to replace broken equipment) must be able to be supported by a P25 Phase-2 compliant infrastructure. The use of State of Maryland infrastructure will be aggressively pursued in

order to minimize costs to Montgomery County. The CAD procurement request will reflect the County's interest in maintaining the station alerting functionality at the current level or better through the CAD system. The RFP for CAD replacement will include replacement of the following systems: CAD, mapping, and the existing Law Enforcement Records Management and Field Reporting systems. Coordination with participating department/agencies and regional partners will continue throughout the project.

FISCAL NOTE

Funding in FY09 included Urban Area Security Initiative (UASI) grant funding of $2.055 million and Fire Act grant funding of $988,000. Funding schedule reflects FY18 supplemental adding $32,000 in Contributions for additional equipment required for Local Fire Rescue Departments (LFRDs). FY18 funding switch is due to a transfer of Current Revenue General for $283,000 from Technology Modernization (MCG) project offset by an equal reduction in Short Term Financing.

COORDINATION

PSSM Executive Steering Committee, Executive Program Directors, Department of Technology Services, Department of Police, Montgomery County Fire and Rescue Service, Sheriff's Office, Department of Correction and Rehabilitation, Office of Emergency Management and Homeland Security, Department of Transportation , Department of Liquor Control, Montgomery County Public Schools (MCPS), Maryland-National Park and Planning Commission (M-NCPPC) Park Police, Washington Metropolitan Area Transit Authority (WMATA)

Proposed new language for PSSM CIP:

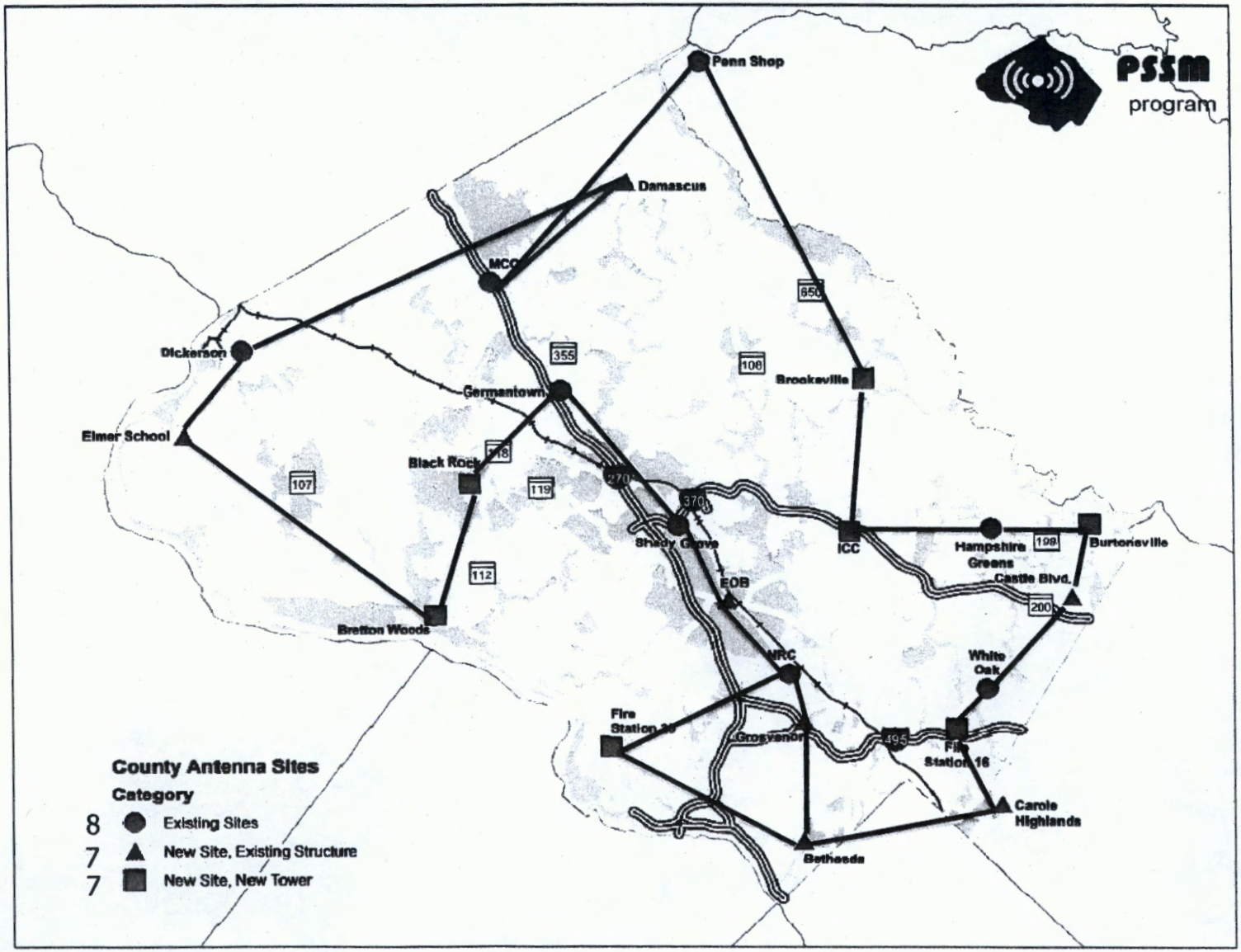
The core voice radio communications infrastructure replacement has identified the following 22 trunked simulcast antenna sites for the new system, as also shown on the map below:

Sites	Location
Bethesda	5202 River Road
Black Rock	17410 Black Rock Road
Bretton Woods	15700 River Road at 39° 04' 40.32" North, -77° 20' 14.67" West
Brookeville	4301 Brookeville Road
Burtonsville	16135 Old Columbia Pike
Carole Highlands	1616 Hannon Street
Castle Blvd.	14000 Castle Blvd.
Damascus	26154 Ridge Road
Dickerson	21200 Martinsburg Road
Elmer School	18500 Elmer School Road
Executive Office Building	101 Monroe Street.
Fire Station 16	111 University Blvd. East
Fire Station 30	9404 Falls Road
Germantown	20235 Observation Drive
Grosvenor	10101 Grosvenor Place
Hampshire Greens	15916 New Hampshire Avenue
ICC/Georgia Avenue	15912 Georgia Avenue
Montgomery County Correctional Facility	22880 Whelan Lane
Nuclear Regulatory Commission	11555 Rockville Pike
Penn Shop	18800 Penn Shop Road
Shady Grove	8620 Pleasant Road
White Oak	11215 Oakleaf Drive

The Executive will locate these simulcast antenna sites at these identified sites to minimize costs to the County and meet the target cutover date of December 2020.

Radio System Sites & Microwave Links Map

PSSM program



MONTGOMERY COUNTY COUNCIL
Rockville, Maryland

June 21, 2019

The Honorable Marc Elrich
County Executive, Montgomery County
101 Monroe Street, 2nd Floor
Rockville, MD 20850

Dear County Executive Elrich:

First responders in Montgomery County rely upon the public safety radio system to communicate with one another. The radio system must work, without fail, at all times.

On Mother's Day weekend, a network timing error caused 75% of the channels on the public safety radio system to go down. The practical effect was many first responders being unable to send or receive messages in real time. Failures of this type could affect first responders in crisis situations. We write you today to implore you to act with the greatest urgency possible to replace the County's failing radio system.

The County has envisioned and budgeted for a new radio system supported by 22 sites strategically placed across the County to ensure 95% of the County is covered with a 95% confidence interval. 95/95 is the industry standard and considered public-safety grade. The previous administration planned and was on track for a "go-live" with the 22-site configuration in the Fall of 2020.

We were, therefore, alarmed to hear that your decision to seek alternative sites at two of the locations (Georgia Ave/ICC and Bretton Woods) will have the effect of delaying the project for at least another year. It may also be more expensive.

County officials representing your administration indicated that the interim 20-site configuration you are recommending would likely not meet the 95/95 standard. We fear that the result of these decisions will produce a more costly, less capable, and further delayed radio system. That is unacceptable.

We ask you to deliver a replacement public safety radio system that meets the 95/95 standard by Fall 2020. The Council stands ready to support your efforts to achieve this critical objective.

As a follow up to our recent joint Committee meeting, Council staff will forward additional informational requests and we ask that you respond to them by the end of June.

Thank you for your prompt consideration of our request, and we look forward to receiving your response in a timely manner.

Sincerely,

Nancy Navarro
Council President

Sidney Katz
Council Vice President

Evan Glass
Councilmember At-large

Hans Riemer
Councilmember At-large

Tom Hucker
Councilmember, District 5

Gabe Albornoz
Councilmember At-large

Will Jawando
Councilmember At-large

Craig Rice
Councilmember, District 2

Andrew Friedson
Councilmember, District 1

OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Marc Elrich
County Executive

July 9, 2019

Nancy Navarro, President
Sidney Katz, Vice President
Hans Riemer, Councilmember
Montgomery County Council
Council Office Building
100 Maryland Avenue, 6th Floor
Rockville, MD 20850

RE: Public Safety Communications System

Dear County Council Colleagues,

You have expressed grave concern about the state of our public safety communications system. I share those concerns. I would not, and have not, put public safety at risk.

As you know, eight months ago, my administration inherited a public safety communications system that should have been replaced years ago and is beginning to fail. It had been unsupported by the vendor since 2009 and as parts have failed the County has resorted to searching on-line and going through parts bins from other jurisdictions that had replaced their systems earlier.

Neither I, nor apparently the Council, realized just how precarious the current system was until the Mother's Day incident that reduced the call groups significantly for an extended period. The new Public Safety System Modernization (PSSM) system is not scheduled to be live until the Fall of 2020, so it could not have prevented that failure.

Periodic failures continue and are expected to continue until the system is switched over. This system should have been replaced before it had deteriorated to this point. My staff has worked diligently to ensure that our portion of this project remains on track for completion by December 2020. In addition, the current system only covers about 80% of the County, while the new system will bring service to 95% of the County.

Upon receiving a briefing on the status of the PSSM system December 19, 2018, I was presented with a plan that did not have two towers finalized by the previous administration - the tower at the ICC and Georgia Ave (Rt 97) (Georgia Ave/ICC) in the Olney area and a tower in the Darnestown area proposed on the Bretton Woods golf course in the vicinity of Seneca and River Roads.

(14)

While the rural community surrounding Bretton Woods received notice of a proposed tower location, the Olney community did not. If the State and County had held a community meeting in the Spring 2018, community sentiment would have been known and there would been time to explore alternatives without implementation delay ever being a factor. Both communities had multiple concerns about the planned sites. They understood the need for the sites, and they proposed alternative sites and were working with both my staff and state elected leaders and staff to find more acceptable locations. I believe community input makes us all stronger, and I believed – and believe – that we could have found a solution that was acceptable to the community and provided the necessary coverage. We were working with a window of time in which alternate sites could be implemented without delaying the planned switch over schedule of December 2020. If research into the alternatives took longer than anticipated, I also asked how long it would take to get the two alternate towers up and merged into the new system after the other 20 sites were to go live first in December 2020. Just to be clear, if the system opened with 20 sites and brought the last two on-line shortly thereafter, the resulting initial coverage would be over 93% of the county (compared to today's 80%), or 98% of the planned coverage of a 22-site system.

At a meeting on April 18, 2019 with Senator Kramer, State Delegate Bonnie Cullison, Greater Olney Civic Association (GOCA) and community representatives, State Highway Administrator Greg Slater stated, and I agreed, that a tower would not be built at Georgia Ave/ICC. The State is building a Maryland FiRST tower and the County benefits from co-locating on it. I knew that for us to make up for the time lost to garner community input, the County and State needed to work together aggressively to identify alternative sites. Initially the State had identified a strong possible alternative for the Olney tower, and we were jointly doing our due diligence on that site when the governor decided to stop our work and go back to the original site. We will co-locate our radio equipment on the State's tower where they build it and so we will no longer be searching for an alternate site.

Like the situation at Georgia Ave/ICC, the original site proposed for Bretton Woods golf course in Darnestown was considered inappropriately placed because it would be the wrong gateway feature at the entrance of our renowned Agricultural Reserve. The community did not believe their suggested alternatives were seriously considered after then-County Executive Leggett said in a community meeting that he did not want the tower at that sensitive location and directed his staff to find a different location. Despite his directive, a new site was not identified and when I took office, I was presented with the original site the previous executive had rejected. I also directed that an alternative site be identified.

We now have a site that likely will address all the deficiencies of the original site. It is still located on Bretton Woods golf course. We'd still make an annual lease payment to the golf course, but it is away from the Seneca Creek gateway entrance to the Agricultural Reserve, and it is on a higher elevation so it will likely be a shorter, less obtrusive monopole than a lattice

tower. The process to research, finalize the location and permit this alternate site was predicted to take over a year, but I have insisted that a site be located, assessed, qualified and community vetted in months instead of years to be able attempt to meet the December 2020 deadline.

Partial/interim radio system solution

I asked the PSSM RSIP team to investigate the possibility of delivering a "partial/interim" radio system until all sites can be finalized, build, and implemented. The vendor was tasked to identify a partial/interim 20 site solution. With the State's decision on Georgia Ave/ICC tower, the partial/interim solution is now to by-pass just one site, if necessary, and still proceed with going live on schedule December 2020. If the alternative Bretton Woods site cannot be ready by December 2020, I commit to bringing it on-line promptly, so we have the complete coverage we contracted for – 95%. Motorola has already produced coverage maps that model at least 93% coverage without the Bretton Woods tower. The current system has about an 80% coverage and it does not penetrate buildings as well as the new one will. Ninety-three percent is dramatically safer than our current 80% coverage, plus it replaces the backhaul infrastructure that has been the source of recent problems. That all stays on schedule.

Between now and December 2020.

I want to be clear. The possible relocation of one site would not have and will not delay implementation of 98%+ of the system. None of the conversations or actions about those two sites has changed anything about the need to plan against possible failures before the new system is in place. We are working to stabilize the current system, and implement adequate contingency planning in case outages, major or minor, happen before December 2020 activation.

There have been two recent outages. The first – the radio system degradation - on Mother's Day weekend was due to network timing issues. We have now addressed that issue, which I explain in further detail below. The second on May 28 was due to flooding in the EOB radio equipment room caused by a burst storm drainpipe. That failure was not related to the antiquated equipment; any electronic equipment, new or old, will fail in contact with water. We have replaced the storm drainage pipe and replaced all damaged electronic equipment.

A quality new timing source for the FiberNet 1 Asynchronous Transfer Mode (ATM) network has been purchased and installed. That stabilized the network after the Mother's Day incident. It is an extremely precise clock that we possess. The previous timing source was provided by a third party that no longer provided the timing levels needed to reliably operate the radio system. We purchased a second timing source for redundancy, which will be placed at a different location on the network. These timing sources will serve multiple systems and will continue to be used after the radio system moves off the ATM network backhaul.

We are putting the current ATM network under third-party maintenance and are investigating a new replacement network system that can emulate the ATM network. The

current fiber based T1 ATM radio signal backhaul network is out of date and has been the source of the recent disruptions to the radio system. A new network concept is being reviewed by IT staff and Motorola. If it is deemed to be a workable replacement, it is expected to take at least 6 months to purchase, install and test before going live. This new network would have new hardware and software but still run on our installed fiber network. It would be in place for a year before cutting over to the new radio infrastructure, which uses microwave for backhaul.

So we never fall this far behind on radio system maintenance, we have purchased an Obsolescence Prevention package with the new radio infrastructure. When our system goes live in December 2020, it will be running the most current software, and critical hardware components will be kept current over the next 10 years with upgrades being applied by Motorola in years 5 and 10 after acceptance.

All applicable county public safety agencies / departments are aware of the need to have contingency plans developed in the event of a failure of the current radio system (both partial or catastrophic) between now and when the new radio system is placed in service. Those contingency planning efforts are ongoing. Several meetings have been conducted and the various departments have started the detailed design of the plans.

Maintaining the current system until the new PSSM system comes on-line is critical and we have taken multiple steps to address this immediate need. At the same time, we are moving forward with all deliberate speed so that the new system is in place on schedule.

Sincerely,

Marc Elrich

ME/dt

17

Responses to Council Staff Questions on
Public Safety Radio System Infrastructure
071519

1) Can you provide a detailed list of steps, including costs and a timeline, that the alternate Bretton Woods site must undergo?

A task order has been issued to Motorola in the amount of $20,000 to do a preliminary evaluation of the alternate Bretton Woods site. A follow-on task order will be issued once a decision is made to pursue this site further. The following list of tasks will be used to develop a timeline to commission a tower/monopole at this location:

- Conduct a Physical Microwave Path Study (in progress)
- Conduct a balloon test and develop photo simulations (in progress)
- Develop a site concept package (also needed for a land lease)
- Get landlord's approval
- Issue public notice and hold community meeting(s)
- Conduct boundary survey and title search
- Make preliminary determination of FAA requirements
- Conduct zoning drawing survey
- Conduct geotechnical investigation and develop report (e.g., of soil borings)
- Develop tower design drawing
- Get Tower Committee (TFCG) approval
- Submit M-NCPPC Planning Application and participate in hearing
- Make Forest Conservation filing
- Develop stormwater management (SWM) concept drawings
- Request archeological assessment
- Schedule FCC NEPA Screening (Phase I)
- Get National Park Service approvals (use results of photo simulations from balloon test)
    - If NPS requires, conduct balloon test again/develop photo simulations with no leaves
- Get State Historic Preservation Office approvals (requires boring)
- Apply for building permit
- File for FAA permit
- Get SWM Concept Review & Final Design
- Finalize construction drawings
- Submit Sediment Control Permit and get approval
- Sign lease with landlord (IMF)
- Conduct shelter/tower review and issue Notice To Proceed NTP) to Motorola
- Order and manufacture shelter
- Order and manufacture tower
- Complete site construction

18

2) Can you also provide updates on the replacement of the current system's backhaul, including a timeline and costs?

The cost of the proposed new solution based on a vendor quotation is approximately $250,000 and includes hardware, software, implementation and one year of maintenance. Additional costs for network adjustments are currently in development.

DTS is concurrently vetting the proposed replacement of the current ATM backhaul network with Motorola, the vendor, and public safety departments. Four potential options have been identified with varying timelines and costs:

a) Continue to use our existing FiberNet team and existing contracted resources to operate and maintain the existing legacy ATM backhaul network until the new public safety radio system is operational.
b) Contract with the legacy ATM equipment manufacturer for enhanced technical support and maintenance capabilities of the ATM network until the new public safety radio system is operational.
c) Replace the existing ATM network with the proposed new solution and use our existing FiberNet team and existing contract resources to operate and maintain the existing legacy ATM network until the new replacement equipment can be fully vetted, installed, tested, and implemented, approximately 6 months from now.
d) Replace the existing ATM network with the proposed new solution and contract with the legacy ATM equipment manufacturer for enhanced technical support and maintenance capabilities until the new replacement equipment can be fully vetted, installed, tested, and implemented, approximately 6 months from now.

3) Can you provide updates on public safety department's development of contingency plans for current system failure, including costs?

As stated in the submission dated June 13, 2019, Police and Fire have long had in place emergency/contingency plans for communications to ensure the continued delivery of public safety services and in particular the dispatch of public safety requests for service should a short-term, full or partial radio communication failure occur. Those plans generally leverage the ability of the radio system to operate in 3 modes (Full Trunking, Site Trunking, Failsoft) augmented by the use of other conventional radio and cellular communications methods available in the County. All 3 modes of radio system operation depend on the FiberNet 1 signal back haul network. The Public Safety agencies will activate additional contingency plans in accordance with the type, extent and duration of failure of the radio system or back-haul Fibernet 1 network.

A first level of contingency is when the Full Trunking (normal mode) is not available and the current radio system goes into Site Trunking mode. This occurs when connectivity is lost

(19)

between the prime site controller and the console system. In this case the consoles at the dispatch center are not operational and dispatchers use backup radios. The end users do not experience a change in the coverage and capacity.

Failsoft Operations are necessary when the system's ability to "trunk" is no longer available. Primary public safety operations are consolidated onto preplanned channels and the radios are designed to point the users to those channels automatically when the system enters this state. Coverage stays the same, but capacity is severely constrained.

Single Frequency Repeated (SFR) operations are available at each of the existing tower sites for stand-alone operation. To utilize them, the end users need to know the tower that they are closest to and tune to that tower's frequency. Public Safety is planning training on SFR use for end users.

During failure of the trunked radio system, the legacy VHF radio system maintained (licensed) by MCFRS is used when the Fibernet 1 back haul network is available. If Fibernet 1 fails, alternate means of communication must be undertaken.

Some alternate contingent means of communications being explored include:

- Using other jurisdictions' radio talk groups as a partial strategy.
- Using cellular communications:
    - MCFRS is in the process of procuring, programming and placing in service ruggedized LTE cellular phones for all MCFRS apparatus in the unit officer position. These cell phones are designed for public safety operations and have a "radio over LTE" application that can be used for apparatus to communicate during emergency response if all other communications fail. The estimated cost of the program is: Initial (devices and accessories) approximately $48,000 plus an annual reoccurring (device services) cost of approximately $162,000. The radio over LTE application mirrors and interconnects the current talk groups that personnel use and will be a "commercial" backup for dispatch purposes should the Public Safety Radio System fail. These devices are provisioned on AT&T's FirstNet system which provides public safety users priority access to the network if it is saturated. In this scenario, once apparatus/personnel arrive on the scene they will switch to conventional talk-around channels on the firefighting radios that do not require any trunked infrastructure.
    - MCPD estimates that a fully redundant cellular solution could cost in the $600,000 range for the first year to include hardware, software and equipment.
- Deploying more staff or extending response times, or a combination of these actions are a last resort.

Contingency plans for short term outages are included in the public safety agencies' operating budgets. Costs for contingencies for potential longer-term outages will be developed following tabletop exercises of the current contingency plans scheduled for September 2019.

In addition, we are still waiting for the data/management evaluation portion of the five coverage maps you shared with us last week.

This report is attached.

21