

**MEMORANDUM**

April 15, 2010

TO: Management and Fiscal Policy Committee  
Public Safety Committee

FROM: Dr. Costis Toregas, Council IT Adviser   
Minna K. Davidson, Legislative Analyst 

SUBJECT: Worksession: FY11-16 Capital Improvements Program: Public Safety System  
Modernization – Park Police radios

The Management and Fiscal Policy and Public Safety Committees reviewed the Public Safety System Modernization (PSSM) project on February 22 and March 15 and recommended approval with several amendments. The Council reviewed the PSSM project on March 23, and tentatively agreed to approve the project as recommended by the Committees. A PDF showing the tentatively approved funding schedule is on © 1. A summary of the text changes that were tentatively approved is on © 2-3.

One amendment, the addition of radios for Park Police, was recommended in concept, with details to be worked out by staff. Council staff has met with Park Police and Executive staff, and recommends the following regarding the purchase of Park Police radios.

**Park Police Radio Replacement Schedule**

**203 Park Police Radios must be replaced.** The radio replacement schedule provided by DTS for the Committees' review (© 4) indicated that Park Police have 123 portable radios and 80 mobile radios for a total of 203 radios. Initial information indicated that all of the radios are P-25 compliant. Park Police clarified that none of the 203 radios are P-25 compliant, but the 123 portable radios are P-25 *compatible* (meaning that each radio would need a \$1,000 upgrade to become P-25 compliant). Park Police later said that all of the radios are near the end of their expected service lives, and need to be replaced. **The total replacement cost for the 203 radios is estimated at \$827,022, based on an average per unit cost of \$4,074.**

**150 “other” M-NCPPC radios must be replaced.** In developing a replacement schedule, Park Police noted that, in addition to the 203 Park Police radios, M-NCPPC maintenance workers and other staff use a total of 150 radios that operate on the Public Safety Radio System infrastructure. These radios also need to be replaced. **The total replacement cost for the 150 other M-NCPPC radios is estimated at \$375,000, based on an average per unit cost of \$2,500.**

**Initial schedule from Park Police – all radio purchases in first three years.** For the Council’s March 23 review of the budget, Park Police suggested a radio replacement which would have loaded all of the replacements into the first three years of the project (© 5). While Council staff agreed on the need to replace the radios, Council staff did not agree with the suggested schedule.

**Council staff recommendation – spread M-NCPPC purchases consistently with other radio purchases:** Council worked with Park Police to spread the radio costs over the project years more consistently with the spread for County Government. The radios would be scheduled with only the most urgently needed replacements in FY11 and FY12 and the remaining replacements in FY13-FY15. As funds for these radios would be added to the amounts that are already budgeted, the schedule that the Council tentatively approved for County radios would not change.

Council staff’s recommendation is shown in the table below.

M-NCPPC Radio Replacement Schedule							
	FY11	FY12	FY13	FY14	FY15	FY16	Total
P25 Park Police <sup>1</sup> radios \$	134,442	203,700	203,700	285,180			827,022
# of portable radios	33	50	40				123
# of mobile radios			10	70			80
P25 Other <sup>2</sup> radios \$				187,500	187,500		375,000
# of radios				75	75		150
Total radio \$	134,442	203,700	203,700	472,680	187,500		1,202,022
Total # of radios	33	50	50	145	75		353
<sup>1</sup> Average Unit cost for Park Police radios is \$4,074							
<sup>2</sup> Average Unit cost for Other radios is \$2,500							
"Other" includes maintenance workers, code inspectors, etc.							

The combined costs for the County radios on the schedule tentatively approved by the Council and the M-NCPPC radios on the schedule recommended by Council staff is shown in the table on the following page.

	FY11	FY12	FY13	FY14	FY15	FY16	Total
<b>County Radios CC tentatively approved</b>							
P25 Radios \$ (in 000s)	1,250	1,250	5,900	7,828	5,860	0	22,088
# of Radios	307	307	1,448	1,922	1,438	0	5422
<b>M-NCPPC Radios CC staff rec.</b>							
P25 Radios \$ (in 000s)	134	204	204	473	187	0	1,202
# of Radios	33	50	50	145	75	0	353
<b>Total P25 Radio \$</b>	<b>1,384</b>	<b>1,454</b>	<b>6,104</b>	<b>8,301</b>	<b>6,047</b>		<b>23,290</b>
<b>Total # P25 Radios</b>	<b>340</b>	<b>357</b>	<b>1,498</b>	<b>2,067</b>	<b>1,513</b>		<b>5,775</b>

**County purchases radios to loan to M-NCPPC.** In the past, M-NCPPC has been responsible for purchasing radio equipment for their personnel to use with the County’s Public Radio System infrastructure. For this purchase, Council staff recommends that the County buy the radios with the same short term financing used for the rest of the radio purchase, and loan them to the Park Police and other M-NCPPC staff for use under a Memorandum of Understanding (MOU). The MOU would address any legal issues related to the terms under which the County would own and M-NCPPC would use the radios, how the radios would be maintained and who would pay for the maintenance, how the radios would be inventoried and managed and who would be responsible, and other related issues.

Executive staff generally support this model, but are concerned that several issues must be resolved in order to implement it. Some of their questions are listed below. They have agreed, however, that it should be possible to resolve these issues during development of an MOU.

1. Are there any legal issues regarding the County purchasing assets for another agency’s use (at no cost to the agency)?
2. What are the requirements for appropriate legal documentation governing Park Police “right of use” of County assets (considerations regarding care, maintenance, etc.)
3. How/who currently maintains radios for Park Police? What resources (budgetary or staff) would need to be provided for DTS to take over maintenance of the new radios?
4. Is there an expectation that DTS would maintain/support the “old” radios? If so, resources would need to be provided to DTS.

Council staff recommends this approach because it will enable the Park Police to receive in a timely manner radios that will interoperate with Prince Georges County, the radios used by M-NCPPC will be the same as the radios used by the County, and the radios purchased for M-NCPPC will benefit from the economies of scale associated with the large number of radios to be purchased by the County.

In addition, the County and Park Police are in the initial stages of exploring consolidation of Park Police and County dispatch operations. Purchasing radios for Park Police through the County's PSSM project might be a first step toward consolidation.

*If the Committees agree with this approach, Council staff would recommend adding to the Other section of the PDF the following language:*

Funds for P-25 compliant radios in this project include funds to purchase a total of 203 radios to be used by the Park Police and 150 radios to be used by other M-NCPPC staff on a schedule agreed to by the County and M-NCPPC. Before the County may issue radios to Park Police or M-NCPPC staff, the County and M-NCPPC must sign a Memorandum of Understanding regarding the ownership, management, operation, and maintenance of the radios.

*If the Committees agree with this approach, Council staff will adjust the funding schedule and the text amendments in the PDF to take into account the additional funding for the M-NCPPC radios.*

**This packet contains:**

**circle #**

PDF showing tentatively approved funding changes	1
Summary of tentatively approved PDF text changes	2
Radio upgrade and modernization schedule	4
Initial radio replacement schedule from Park Police	5

MFP/PS Committees' Recommendations  
 Expenditures + Funding tentatively approved by Council on 3/23/2010

**Public Safety System Modernization -- No. 340901**

Category  
 Subcategory  
 Administering Agency  
 Planning Area

General Government  
 Technology Services  
 Technology Services  
 Countywide

Date Last Modified  
 Required Adequate Public Facility  
 Relocation Impact  
 Status

**EXPENDITURE SCHEDULE (\$000)**

Cost Element	Total	Thru FY09	Est. FY10	Total 6 Years	FY11	FY12	FY13	FY14	FY15	FY16	Beyond 6 Years
Planning, Design, and Supervision	3,266	0	0	3,266	925	945	895	501	0	0	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	3,264	0	0	3,264	125	725	1,345	1,069	0	0	0
Other	47,131	2,947	96	44,088	1,250,250	18,900	18,823	5,960	5,960	0	0
<b>Total</b>	<b>53,661</b>	<b>2,947</b>	<b>96</b>	<b>50,618</b>	<b>2,303,550</b>	<b>18,570</b>	<b>21,668</b>	<b>7,450</b>	<b>5,960</b>	<b>0</b>	<b>0</b>

**FUNDING SCHEDULE (\$000)**

Federal Aid	3,343	2,947	96	300	300	0	0	0	0	0	0
G.O. Bonds	3,840	0	0	3,840	200	800	1,420	1,420	0	0	0
Short-Term Financing	46,478	0	0	46,478	1,403,050	17,770	19,648	6,010	5,960	0	0
<b>Total</b>	<b>53,661</b>	<b>2,947</b>	<b>96</b>	<b>50,618</b>	<b>2,303,550</b>	<b>18,570</b>	<b>21,668</b>	<b>7,450</b>	<b>5,960</b>	<b>0</b>	<b>0</b>

**OPERATING BUDGET IMPACT (\$000)**

Maintenance				2,408	48	0	680	500	680	500	
<b>Net Impact</b>				<b>2,408</b>	<b>48</b>	<b>0</b>	<b>680</b>	<b>500</b>	<b>680</b>	<b>500</b>	

**DESCRIPTION**  
 This project will provide for phased upgrades and modernization of computer aided dispatch (CAD) 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 system, replacement of mobile and portable radios, and voice radio communications infrastructure. The initial phase includes the CAD replacement, station alerting system replacement and the acquisition of the P-25 standard radio devices. A subsequent phase would include the replacement of the radio infrastructure, estimated at approximately \$50M.

The previously approved Fire Station Alerting System Upgrades project (#451000) was transferred to the 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 32 existing stations, 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 provides 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.

**COST CHANGE**  
 Increase due to inclusion of additional upgrades and modernization of computer aided dispatch (CAD), replacement of mobile and portable radios, and voice radio systems, and addition of Fire Station Alerting 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. Manufacturer's support for the voice radio system will begin to be phased out 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.

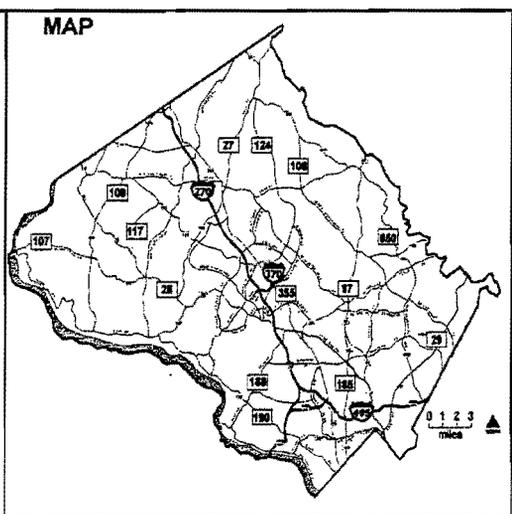
The CAD modernization will initiate with a detailed planning phase that will include the use of industry experts to assist in both business process analysis and developing detailed business and technical requirements for the new CAD system. Utilizing external consultants for this process will allow the County to incorporate lessons learned and best practices from other jurisdictions.

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

**APPROPRIATION AND EXPENDITURE DATA**

Date First Appropriation	FY09	(\$000)
First Cost Estimate	FY11	53,661
Current Scope		
Last FY's Cost Estimate		6,883
Appropriation Request	FY11	2,303,550
Appropriation Request Est.	FY12	18,570
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		3,043
Expenditures / Encumbrances		2,947
Unencumbered Balance		96
Partial Closeout Thru	FY08	0
New Partial Closeout	FY09	0
Total Partial Closeout		0

**COORDINATION**  
 Public Safety Steering Group  
 Department of Technology Services  
 Department of Police  
 Montgomery County Department of Fire and Rescue Service  
 Sheriff's Office  
 Department of Corrections 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)



Tentatively approved  
by Council on  
3/23/2010

### Summary of MFP/PS Committees' Recommendations

- Amend the schedule for the purchase of P-25 radios (included in the Other category on the PDF) to reduce the number of radios purchased in FY11 and FY12 and spread the overall radio purchase over five years, from FY11 to FY15, instead of four years (FY11 to FY14). The Committees' recommendation is shown in the table below.

	FY11	FY12	FY13	FY14	FY15	FY16
<b>Executive's Recommendation</b>						
P25 Radios \$ (in 000s)	2,500	5,900	7,828	5,860	0	0
# of Radios	614	1,448	1,942	1,438	0	0
<b>Committees' Recommendation</b>						
P25 Radios \$ (in 000s)	1,250	1,250	5,900	7,828	5,860	0
# of Radios	307	307	1,448	1,942	1,438	0

- In addition, amend the radio schedule to add the replacement of P-25 radios for the Park Police. The Committees requested that staff develop a recommendation to add the appropriate amounts to the expenditure schedule. Executive and Park Police staff developed two options to schedule the replacement of Park Police radios and maintenance workers' radios that operate on the County's radio system (© 4). The total cost to replace all of the radios would be \$1.2 million.

Because a significant expenditure would be involved and Council staff must work with other staff to identify a funding source, ***Council staff recommends that the MFP and PS Committees review the proposed options and develop a recommendation on the Park Police radios before the Council acts on the CIP this May.***

- Change the appropriation for FY11 from \$3.55 million to \$2.3 million to reflect the reduction in the number of radios to be purchased. Change the estimated appropriation request for FY12 from \$18.57 million to \$13.92 million consistent with the change in the radio purchase schedule.
- Add a new "Conditions" section of the PDF to specify what the FY11 appropriation is for. In view of the Committees' discussion about station alerting (see summary on page 4 of this memo), Council staff recommends adding language in the third paragraph to express the Council's interest in including station alerting as a functionality of CAD. Recommended language is shown below.

#### **CONDITIONS**

Funds appropriated for this project must be used as follows:

Not more than \$300,000 for planning for public safety radio infrastructure replacement, \$550,000 for planning for CAD replacement, and \$1.25 million for the purchase of P-25 compliant radios.

Not more than \$75,000 for planning and \$125,000 for construction for station alerting.

The CAD procurement request must reflect the County's interest in maintaining the station alerting functionality at the current level or better through the CAD system.

Funds appropriated for this project must not be used to purchase or implement the replacement CAD system or radio infrastructure until the Executive provides the Council with a detailed proposal and accurate cost estimates for the total project scope.

- Modify the PDF to show that the governance structure for the Public Safety System Modernization will be the same as the governance structure for the Technology Modernization project, with the County Executive as the administering agency.
- Add to the PDF text under "Other" a statement that eJustice will be replaced as part of the CAD replacement, and a list of the other systems that will be considered for replacement or interface with the new CAD. Based on information provided by Executive staff on © 3, Council staff recommends adding the following language under "Other":

The RFP for the CAD replacement will include replacement of the following systems: CAD, mapping, EJustice, PacketWriter. In addition, replacement of the following systems will be considered for inclusion in the CAD replacement RFP: Fire Station Alerting, ProQA, False Alarm Reduction Section (FARS), Paging, and Fire House records management.

- Add clarifying language to the PDF as recommended by Council staff on © 10.
- The Committees requested quarterly updates on this project on an ongoing basis, and agreed that a template, similar to the one developed last year for major technology projects, will be used for this project.

### **Summary of MFP/PS Committees' Discussion**

**Performance standards:** Committee members noted that in previous discussions of the current CAD, they had been told that the CAD delays fire/EMS responses by two to three minutes. They asked whether there was any assurance that a new CAD system would significantly improve response times. Executive staff said that some improvements in response times have already been achieved through adjustments to the current system and dispatch process. They anticipate that a new CAD will further improve response times, but cannot say by how much.

**Radio CIP Upgrade and Modernization Schedule**

	Total Inventory	Upgrade # units	FY11		FY12		FY13		FY14		FY15	
			Units	\$	Units	\$	Units	\$	Units	\$	Units	\$
<b>RADIOS</b>												
<b>Portable Radios:</b>			\$ 4									
Montgomery County Police	1256	956	\$ 3,824	335	\$ 1,340	310	\$ 1,240	311	\$ 1,244	0		0
Montgomery County Fire and Rescue	1566	1,119	\$ 4,476	335	\$ 1,340	390	\$ 1,560	394	\$ 1,576	0		0
Sheriff	147	147	\$ 588	75	\$ 300	72	\$ 288		\$ -			
Correction and Rehabilitation	152	152	\$ 608		\$ -		\$ -	152	\$ 608			
Park Police ***	123	0	\$ -		\$ -		\$ -		\$ -			
Public Works & Transportation	343	343	\$ 1,372		\$ -		\$ -	343	\$ 1,372	0		0
Homeland Security	10	10	\$ 40		\$ -		\$ -	10	\$ 40			
Security	24	24	\$ 96		\$ -		\$ -	24	\$ 96	0		0
Other ****	53	53	\$ 212		\$ -		\$ -	53	\$ 212	0		0
Enterprise Coordination Stock *****	0	100	\$ 400	20	\$ 80	20	\$ 80	20	\$ 80	40	\$ 160	0
<b>Total Portable Radio Upgrades</b>	<b>3674</b>	<b>2,804</b>	<b>\$ 11,616</b>	<b>765</b>	<b>\$ 3,060</b>	<b>792</b>	<b>\$ 3,168</b>	<b>1,307</b>	<b>\$ 5,228</b>	<b>40</b>	<b>\$ 160</b>	<b>\$ -</b>
<b>Mobile Radios:</b>			\$ 4									
Montgomery County Police	1745	1,745	\$ 6,980	100	\$ 400	545	\$ 2,180	550	\$ 2,200	550	\$ 2,200	\$ -
Montgomery County Fire and Rescue	437	437	\$ 1,748	100	\$ 400	100	\$ 400	100	\$ 400	137	\$ 548	\$ -
Sheriff	73	73	\$ 292	35	\$ 140	38	\$ 152		\$ -		\$ -	\$ -
Correction and Rehabilitation	9	9	\$ 36		\$ -		\$ -	0	\$ -	9	\$ 36	\$ -
Public Works & Transportation	312	312	\$ 1,248		\$ -		\$ -	0	\$ -	312	\$ 1,248	\$ -
Park Police ***	80	0	\$ -		\$ -		\$ -		\$ -		\$ -	\$ -
Homeland Security	0	0	\$ -		\$ -		\$ -		\$ -		\$ -	\$ -
Security	2	2	\$ 8		\$ -		\$ -	0	\$ -	2	\$ 8	\$ -
Other ****	40	40	\$ 160		\$ -		\$ -	0	\$ -	40	\$ 160	\$ -
<b>Total Mobile Radio Upgrades</b>		<b>2,618</b>	<b>\$ 10,472</b>	<b>235</b>	<b>\$ 940</b>	<b>683</b>	<b>\$ 2,732</b>	<b>650</b>	<b>\$ 2,600</b>	<b>1050</b>	<b>\$ 4,200</b>	
<b>Total System Radios</b>		<b>5,422</b>	<b>\$ 22,088</b>	<b>1000</b>	<b>\$ 4,000</b>	<b>1475</b>	<b>\$ 5,900</b>	<b>1957</b>	<b>\$ 7,828</b>	<b>1090</b>	<b>\$ 4,360</b>	<b>\$ -</b>
<b>Consulting Services:</b>			\$ 1,350		\$ 300		\$ 450		\$ 450		\$ 150	\$ 0
<b>Radio Infrastructure Modernization:</b>			\$ 50,000		\$ -		\$ -		\$ -		\$ 30,000	\$ 20,000
<b>TOTAL CIP EXPENDITURE REQUEST:</b>			<b>\$ 73,438</b>		<b>\$ 4,300</b>		<b>\$ 6,350</b>		<b>\$ 8,278</b>		<b>\$ 34,510</b>	<b>\$ 20,000</b>
<b>Radio Assumptions</b>												
All Portable and Mobile Radios must be XTS5000s, XTL5000s or equivalent (P-25 compatible) and upgraded by year 2014 as infrastructure build-out begin												
Radio unit costs are based upon current average cost of \$4000 each												
The total radio unit upgrades are front loaded during the first 3 years because Montgomery County must coordinate with system upgrades in other jurisdictions to assure continued interoperability												
*** Note that Park Police has approximately 123 Portable and 80 Mobile Radios (All are already P-25 compatible)												
**** Other include: Radio Shop, Liquor License Board, School Board, CEO, CAO												
***** Systemwide Portable and Mobile maintenance spares needed for rollover coordination, and/or Emergency On-Hand Stock												
<b>Infrastructure Assumptions</b>												
a. 2010 is end of Motorola formal support for current radio system.												
b. System replacement must be coordinated with system upgrades in other jurisdictions to assure continued regional interoperability.												
c. Estimated replacement cost for the radio infrastructure is \$40 - \$50 million. System replacement must be coordinated												

**Maryland-National Capital Park Police**

		2011	2012	2013	2014	2015	2016	Total
Option 1 (Recommended)	P25 PF Radios \$	\$501,102	\$ 162,960	\$162,960	\$ -	\$ -	\$ -	\$ 827,022
	# of Radios (note 1)	123	40	40	-	-	-	203
	# of Radios (note 2) (note	-	150					150
	P25 MW Radios \$	\$ -	\$ 375,000	\$ -	\$ -	\$ -	\$ -	\$ 375,000
	<b>Total</b>	<b>\$501,102</b>	<b>\$ 537,960</b>	<b>\$162,960</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,202,022</b>
Option 2	P25 PF Radios \$	\$252,588	\$ 248,514	\$325,920	\$ -	\$ -	\$ -	\$ 827,022
	# of Radios (note 1)	62	61	80	-	-	-	203
	# of Radios (note 2)		150					150
	P25 MW Radios \$	\$ -	\$ 375,000	\$ -	\$ -	\$ -	\$ -	\$ 375,000
	<b>Total</b>	<b>\$252,588</b>	<b>\$ 623,514</b>	<b>\$325,920</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,202,022</b>

<b>Note 1</b> 123 portable	Police Force (PF)
80 mobile	
Average cost	\$ 4,074
<b>Note 2</b> 150 portable	Maintenance workers (MW)
Average cost	\$ 2,500

**Note 3 )** There is a potential that the MNCPP maintenance worker staff could be assigned older radios. If that was able to be worked out, the maintenance worker radios could be deferred to FY13 or FY14.