

4K
12-1-09



City Council Report

Date: December 7, 2009
To: City Council
Through: Christopher J. Brady, City Manager
From: Alex Deshuk, Manager of Innovation and Technology
Subject: Mobile High Performance Data System for Public Safety, Citywide

Strategic Initiatives



Purpose and Recommendation

The Council is requested to approve a sole source acquisition of the Motorola High Performance Data (HPD) System, for public safety mobile data communications. This will replace the obsolete mobile data system presently being used by Mesa and some members of the Topaz Regional Wireless Cooperative (TRWC). The total award for the equipment and services, including taxes, is \$1,893,240.

Background

The current mobile radio system has been in use since 1996, with only a single capacity upgrade in 2001. A mandate from the Federal Communications Commission (FCC) now requires that the mobile data system must be replaced before January 1, 2013 or cease operation due to regulatory changes related to how the radio frequencies are used. Also, the modems used on the mobile data system are at the end of their useful life and have been discontinued by the manufacturer.

Discussion

The Communications Department is requesting that Council approve a Motorola High Performance Data system and the modems to operate the system. The FCC mandates the migration of UHF 25 KHz channels to narrowband 12.5 KHz channels by January 1, 2013, this includes Mesa's mobile data system. Additionally the modems being used by Mesa and its TRWC partners have reached their end of life cycle and are no longer available from the manufacturer.

This proposal facilitates the move of public safety users to a compliant mobile data system and allows the implementation of the system in an orderly manner over time. Presently the Mesa PD has software in their mobile computers that permits the best use of bandwidth for data throughput. With this system Mesa and its TRWC partners

will have reliable mobile data transmission and the ability to use other methods available to acquire data in their vehicles. As more robust data transmission capabilities are installed by the different entities the users will be able to switch between them seamlessly.

Communications recognizes that the City's Police and Fire Departments desire is to ultimately have broadband data capabilities for certain applications, well beyond what the HPD system can provide, and we also recognize that they will continue to use separate systems such as cellular data services, and point of use Wi-Fi systems in the interim. We view the HPD system as the bedrock of the future mobile data communications design, ensuring that critical data is consistently available, while providing a path to broadband data.

The proposed HPD system is a private system, shared only with participating members of the TRWC. A private system helps to insure that mission critical applications such as CAD will be available even when public wireless services become overloaded or unavailable in the event of a major incident such as what was experienced during hurricane Katrina or the Minnesota bridge collapse.

Alternatives

Maintain the current system. Mesa could keep the current system and apply for a waiver from the FCC. The FCC may not grant a waiver and Mesa would be in the position of immediately applying for frequencies that may not be available for their use. Also, the modems presently being used are no longer available and sources would need to be found for replacements and repairs, if possible.

Use public data services. In times of high use or emergency situations the public services may be overloaded or not available and public safety would be without this valuable resource. Public safety users need a reliable mobile data system to provide emergency services to its citizens and a privately maintained system is a method of accomplishing this need.

Take no action. This is the least desirable alternative. Mesa must eventually replace the current mobile data system for public safety users. It can be done in an orderly and planned manner or in an emergency situation that may produce undesirable results for the citizens being served by the various entities presently using the current system.

Fiscal Impact

The Motorola proposal for a High Performance Data system infrastructure to serve the East Valley area including Mesa, Gilbert, Apache Junction and Queen Creek is \$842,704. As the administrative manager for the TRWC Mesa will manage and maintain the HPD system on behalf of the cooperative. Apache Junction Fire District, Gilbert Fire Department and Queen Creek Fire Department have 19.5% of

the subscriber modems on the system and will therefore reimburse Mesa for \$167,327 of the infrastructure cost.

Each entity is responsible for the purchase and installation of the modems for their vehicles. Mesa's number of modems for purchase is 465 for a total of \$1,050,536. The total cost to Mesa is \$1,728,913, after reimbursement by our partners in the TRWC, this includes applicable taxes.

Budget Information

2008 Bond Project

Cap ID 17421

File 02-411

Proj. No. 8246

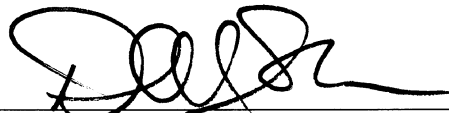
Work Order 3385

Coordinated With

TOPAZ Regional Wireless Cooperative
Police Department
Fire Department



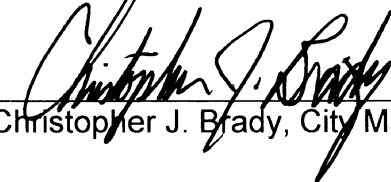
Mike Brown
Communications Administrator



Dale Shaw
Executive Director, TRWC



Alex Deshuk
Manager of Technology and Innovation



Christopher J. Brady, City Manager

Quantity	Description	Unit Price	Extended Price
	Mobile Data Infrastructure		
1	HPD Infrastructure Equipmen and Master Site Upgrade	\$360,767.00	\$360,767.00
1	Systems Integration	\$366,700.00	\$366,700.00
1	Radio IP Middleware Infrastructure (less server)	\$79,773.00	\$79,773.00
	Sub-total		\$807,240.00
	Estimated Sales Tax @ 8.05%		\$35,463.47
	Mobile Data Infrastructure Total		\$842,703.47
	Mesa Cost of Infrastructure (80.5%)		\$678,376.29
	Mobile Data Subscribers		
465	Radio IP Middleware Clients	\$348.50	\$162,052.50
	HPD Modems 1-100 (unit price)	\$1,600.20	\$0.00
	HPD Modems 100-400 (unit price)	\$1,511.30	\$0.00
465	HPD Modems 400 and above (unit price)	\$1,422.40	\$661,416.00
465	GPS Option	\$320.00	\$148,800.00
	Sub-total		\$972,268.50
	Estimated Sales Tax @ 8.05%		\$78,267.61
	Mobile Data Subscribers Total		\$1,050,536.11
	Grand Total		\$1,893,239.58
	Total Cost to Mesa (80.5% of Infrastructure Total + 465 Subs)		\$1,728,912.41