



## OFFICE OF INSPECTOR GENERAL PALM BEACH COUNTY

### CONTRACT OVERSIGHT NOTIFICATION (2013-N-0001)

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Inspector General

*"Enhancing Public Trust in Government"*

### County Public Safety Radio System: Delay in Planning Leads to Immediate Need for Sole Source Procurement Without the Benefit of Alternative Strategies

#### ISSUES

Office of Inspector General (OIG) staff reviewed documentation relating to the Board of County Commissioners ("County") August 21, 2012 approval of a sole source procurement from Motorola Solutions Inc. ("Motorola") for renewal replacement of Master Site Equipment (MSE) for the County's Countywide Public Safety 800 MHz Radio System ("System"). OIG staff determined that the County staff's delay in planning for the System's end of support<sup>1</sup> issues resulted in the immediate need to replace a significant component of the System, the MSE, without the benefit of a comprehensive analysis of the fiscal, operational and functional impact of all viable renewal replacement strategies.

#### System Background

The County acquired the current MSE, Motorola SmartZone 3.0, from Motorola in 1998 without competition, through a sole source procurement. The MSE is the core of the System. It controls the entire System and is one of its four sub-systems:

- Master Site Equipment (MSE) and Site Equipment Platforms (transmitters/receivers (also known as base stations or repeaters), controllers, Central Electronics Banks)
- Microwave System (Radio Frequency (RF) Equipment - transmit combiners, transmit antennas or dishes, receiver antennas or dishes with amplifier/receiver multi-couplers)
- Dispatch Consoles
- Subscriber units (portable or mobile radios)

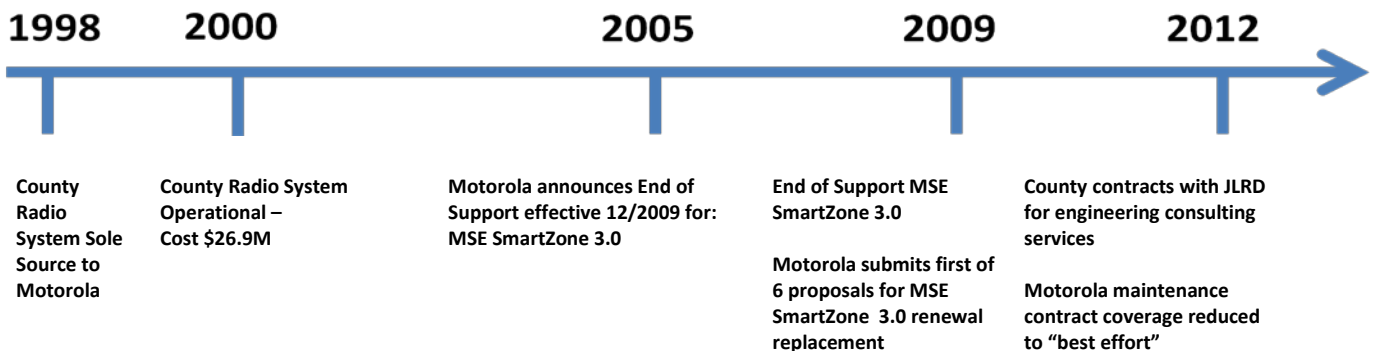
The System went operational in 2000, one year prior to when the SmartZone 3.0 release was last sold by Motorola. It consists of a 28 channel, SmartZone 3.0 trunked ten (10) site simulcast system that includes 14 dispatch centers throughout Palm Beach County with 63 remote console positions. The System is the predominant public safety communication system within Palm Beach County and relied upon all hours of the day by law enforcement, emergency personnel, and others to minimize their situational risks

<sup>1</sup> Motorola End of Support – Normally occurs five years after the product is discontinued (end-of-life). Parts or components no longer returned to Motorola for repair or supported, but supported by third party vendors and parts.

related to life, health, and/or safety issues. Multiple first responder agencies and other users are supported by the System, including: Palm Beach County Sheriff’s Office, 13 municipalities, Palm Beach County emergency management functions, Palm Beach County Fire Rescue, County public works departments, the State Attorney, Port of Palm Beach, three (3) local counties, 28 non-Palm Beach County municipalities, and certain non-governmental organizations. The System supports approximately 11,600 subscriber units.

The System is a Mix-Mode system primarily using analog communication with a digital sub-system. Three municipalities, who operate their own 800 MHz trunked radio system, are currently connected to the System through a “hub connection” that allows the County’s MSE to control their voice radio systems. Eight municipalities, that do not have their own radio systems, are connected directly to the System and are identified as “direct users”. The other non-County agencies and non-government agencies communicate with the System through “common talk groups”.

The County invested \$26.9 million to acquire the System that has been operational for twelve (12) years. The timeline below spans the life of the System and outlines significant events such as Motorola’s 2005 notification to the County that the MSE end of support date was December 2009.



In August 2009, Motorola submitted a proposal to the County for renewal replacement of the MSE with an alternative Motorola product, and has since submitted six (6) revised proposals<sup>2</sup>. The County has not upgraded the MSE but has, through maintenance agreements with Motorola’s System Support Center (approximately \$1 million annually) and salvaging efforts, maintained the system’s functionality and operability.

To gain a more comprehensive understanding of the System, OIG staff requested information from the County relating to its plans for end of support issues with Motorola’s technology, specifically relating to the System’s current MSE. The County provided the OIG with the System’s original implementation plans from the 1999-2001 timeframe and indicated that there were no updated documents, analyses or comprehensive plans outlining their strategy for renewal replacement of the System.

<sup>2</sup> Revised proposals were submitted in Oct 2009, Feb 2010, Apr 2011, May 2011, Sep 2012, and Oct 2012.

Despite being aware of the MSE's impending end of support issues, the County had not conducted a comprehensive analysis of the system to ascertain viable renewal replacement options. As a result, when the Motorola maintenance contract no longer provided adequate coverage to ensure System functionality, County staff recommended a sole source procurement for the new Motorola MSE renewal replacement. County staff indicated that public safety concerns, continued operability of the entire System, and time-sensitive nature of the replacement warranted the sole source procurement.

#### What Other Counties Have Done

Other US counties that acquired Motorola SmartZone technology have faced similar radio system end of support issues with software programs (SmartZone) and the non-availability of replacement parts. Montgomery County, MD operated its radio system using the Motorola SmartZone 3.0, and the combined counties of King, Pierce and Snohomish, WA operated their radio system using the Motorola SmartZone 4.1 (end of support December 2012). Like Palm Beach County, these other counties were aware of the end of support issues relating to the Motorola SmartZone technology. However, unlike Palm Beach County, these other counties took proactive planning measures to determine the fiscal, operational, and functional strategies available to them as it related to System renewal replacement options.

Montgomery County (July 2009) and King, Pierce, and Snohomish Counties (February 2012) conducted thorough analyses of their public safety radio systems and published reports describing the current state of their public safety communications and their roadmaps, including options, for the future. These reports were then available to decision makers to be used as a basis for decisions regarding the renewal replacement strategies of their public safety radio systems.

#### What Palm Beach County Has Done

To address the impending reduction in maintenance coverage for the MSE, the County, in February 2012, contracted with Johnson, Levin, Ragen, Davila, Inc. (JLRD) for engineering services associated with the master planning and peer design review for the renewal replacement of the MSE and Site Equipment Platforms. JLRD, in turn, subcontracted the services for the project to RCC Consultants Inc. (RCC), a global telecommunications engineering and consulting firm. The procurement strategy outlined in RCC's Project Management Plan (February 2012) specified the sole source procurement from Motorola for the MSE components, specifically the ASTRO 25® - Smart X IP proprietary technology. RCC and County staff indicated that replacing the current MSE through a sole source procurement of Motorola's ASTRO 25® - Smart X IP proprietary technology would allow continued operations of the current analog system for six to eight more years, and also allow for future expansion and digital interoperability for the County and other agencies as they migrate to P25 capable equipment, i.e. dispatch consoles, subscriber units. Thus, the MSE replacement would afford the time needed to conduct a thorough analysis of viable and economical strategies on which sound renewal replacement decisions can be made.

The MSE sole source procurement will result in a County expenditure of approximately \$4.2 million, 10% of the estimated replacement cost of the System as determined by RCC, and will likely provide a continued sole source justification for future equipment based on its proprietary technology. The effect of this piecemeal approach – replacing only the MSE – potentially jeopardizes the opportunity and financial benefits of a full, open and competitive procurement and may end up costing the County more over the long term. If the County, after weighing the results of a thorough analysis of renewal replacement strategies, decides to retain the proprietary MSE (ASTRO 25® - Smart X IP), they will be locked into using only equipment and software that is Motorola or Motorola compliant.

This current County replacement strategy is similar to what occurred in 1997 with the original acquisition of the System. At that time, the County also authorized negotiations with Motorola which resulted in a sole source procurement. According to County officials, the County justified the sole source procurement due in part to approximately \$4 million in previous investments by County and other local governments for Motorola infrastructure and equipment required for System interoperability.

Since the System went operational in 2000 at a cost of \$26.9 million, the County has sole sourced the procurement of additional equipment, parts, and maintenance service to Motorola, due to the equipment's proprietary technology, in an amount exceeding \$14 million. Thus, the County has invested approximately \$41 million into the current System since 1999, not including in-house maintenance services provided by County staff. It is unknown whether a compatible and less expensive system could have been acquired because the County did not, at that time, open the procurement to competition from other telecommunication vendors.

#### Public Radio System Standards

The Association of Public-Safety Communications Officials - International (APCO) establishes the Project-25<sup>3</sup> Digital Radio Technical Standards (P-25). These standards include the common air interface and standardized functions and protocols supporting both conventional and trunking architectures<sup>4</sup>. The P-25 standards require radio system equipment to be backward compatible with legacy analog equipment (equipment must operate on both digital and analog systems) and to be **non-proprietary** (*emphasis added*). Essentially, the open architecture standards ensure that the defined services of a radio system are accessible to **any** (*emphasis added*) subscriber unit or system built to the P-25 specifications.

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<sup>3</sup> The Project 25/34 Steering Committee, APCO Project 25 Interface Committee (APIC), and the Telecommunications Industry Association (TIA) use the P25 Statement of Requirements to develop ANSI/TIA standards, TIA Telecommunications Systems Bulletins (TSBs), and P25 standards and specifications to facilitate the procurement and operation by the public safety communications community and other narrowband private land mobile radio users of interoperable multi-vendor equipment implementing the Project 25 Standard. The Project 25/34 Steering Committee specifies the suite of documents that compose the P25 Standard.

<sup>4</sup> "Trunked" radio systems differ from "conventional" radio systems in that a conventional radio system uses a dedicated channel (frequency) for each individual group of users, while "trunking" radio systems use a pool of channels which are available for a great many different groups of users.

One of the primary objectives in developing P-25 standards was to increase competition within the telecommunications industry. Having a public safety radio system that is P-25 compliant, using open architecture standards, facilitates an open competitive environment whereby various vendors can participate in procurement activities throughout the life of the system. However, although the P-25 standards are open architecture standards across the telecommunications industry for subscriber units, they do not apply to all system equipment. This has allowed manufacturers to build enhanced networks with proprietary software offering features and functions above and beyond the P-25 requirements; thus, leading to sole source contract justifications for future procurements of infrastructure equipment and subscriber units.

In 2010, the City of Richardson (City), TX, realized the need to acquire a new radio system due to aging and unsupported equipment, similar to what the County is facing today. The City, in their solicitation, embraced the P-25 standards and required 100% compliance to published standards for the core network as well as four other sub-system components (consoles, subscriber units, fire alerting, and construction). The City advised all vendors that proprietary features would not be accepted. The City estimated a savings of more than \$4.5 million, or 36%, on the overall cost of the system using this approach.<sup>5</sup>

Sound government procurement practices encourage the award of new contracts generally every five years, with some exceptions, through “full and open” competition. The 2000 Model Procurement Code by the American Bar Association states “Fair and open competition is a basic tenet of public procurement. Such competition reduces the opportunity for favoritism and inspires public confidence that contracts are awarded equitably and economically.”

In summary, by replacing the MSE with Motorola’s proprietary technology, ASTRO 25® - Smart X IP, the County will: 1) be limited to Motorola products for the replacement of the System’s Site Equipment Platforms for as long as the Astro 25® - Smart X IP is retained; and 2) reduce its economic bargaining position for the acquisition of the remaining sub-systems with proprietary constraints.

## RECOMMENDATION

The County should refrain from expending additional funds for the System (beyond the MSE procurement), except to address life, health or safety related necessities, until a comprehensive analysis of the fiscal, operational and functional impact of all renewal replacement strategies is conducted. The analysis should include input from and coordination with other public safety radio system users impacted, fiscally and/or functionally, by the County’s renewal replacement activities.

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<sup>5</sup> *Public Safety Communications*, May 2012, “How the City of Richardson Changed the LMR Procurement Paradigm”.

**RESPONSE FROM MANAGEMENT**

County staff “does not concur with the OIG’s findings and conclusions” but will “evaluate full system replacements prior to any future major replacement expenditures”. The County response is attached to this Notification.

**OIG RESPONSE**

This Notification conveys that given the complexity and breadth of this system, the public safety concerns, and the dynamics of its multiple user agencies, viable alternative strategies which clearly outline fiscal, operational and functional impacts should be available to the Board of County Commissioners prior to their major renewal replacement decisions, such as replacing the systems “brains”.

Multiple user agencies have invested millions of dollars into radio systems that may be affected by the Board of County Commissioners renewal replacement activities. County staff stated in their response that they “routinely discuss quality of maintenance of service response and desired functionality with all major County users and governmental partners” and they have “established a renewal/replacement fund”. The OIG is not questioning the level of maintenance or support available over the life of the system; the overall functionality and operational success of the System; or, whether adequate funding is available to implement renewal replacement strategies.

County staff also stated in their response that there is no “specific report with a ribbon and bow relating to the County’s plans”. The OIG is recommending the development of a **documented** plan which:

- 1) Provides transparency;
- 2) Is essential to decision making on projects of this magnitude; and
- 3) Would go a long way in dispelling any notion that County staff used a “ribbon and bow” wrapped around exigent circumstances to justify a very costly sole source procurement.





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*"An Equal Opportunity  
Affirmative Action Employer"*

November 15, 2012

To: Joe Doucette, Chief of Operations  
Office of the Inspector General

From : Audrey Wolf, Director *Audrey Wolf*  
Facilities Development & Operations

Re: **OIG Contract Oversight Notification (CON) – County  
Public Safety Radio System: Delay in Planning Leads  
to Immediate Need for Sole Source Procurement  
Without the Benefit of Alternative Strategies**

Thank you for the confirmation received on 11/13/12 that this CON was not meant in any way to stop or delay the Motorola MSE (Master Site Equipment) replacement on the November 20, agenda and that the OIG's recommendation is intended to apply to future County actions. With just four working days to respond, we have to reject all critical findings that there are any planning deficiencies. Rather, Staff believes that this CON reflects the OIG's predisposition to being anti sole-source.

The August 21, 2012 BCC item that outlined the overwhelmingly successful history of the County's implementation of our Public Safety Radio System, fully disclosed and discussed all potential timing and future implementation issues and committed to the substantial studies that will be necessary to address total system upgrade/replacement. Contrary to your findings regarding supposed delayed planning and a piecemeal approach to the replacement, Staff:

- 1) contractually provided for extended "end of life" (EOL) guarantees in the initial purchase contract;
- 2) established a renewal/replacement fund in 2000 so that a system renewal/replacement project could be provided for in the time frame required by EOL issues and need for increased functionality (if any);
- 3) interviewed major County users and governmental partners with their plans so we could analyze and plan for their dispatch and subscriber unit renewal/replacement strategies and/or system replacement in the case of the hub cities;

- 4) routinely discusses quality of maintenance of service response and desired functionality with all major County users and governmental partners;
- 5) developed a plan for the immediate MSE renewal/replacement which; a) placed the MSE under Motorola support, b) maintained interoperability with all partners, c) allows each governmental entity to proceed as quickly as it can or as slowly as it chooses, d) was sensitive to the budget issues of the major County users and governmental partners and e) maintained/increased the competitive environment for future System decisions; and
- 6) adjusted its recommendation to implement the coordinated plan based on the direction of the Board in annual budget hearings since 2009 to extend life cycles of all infrastructure to the extent practical regardless of the availability of funding.

We believe that our ability to successfully develop and implement #5 and #6 demonstrate a high level of planning all of which was described in great detail in the Board Item seeking approval to begin negotiation of the sole source procurement.

It is actually shocking that the CON implies that it would be preferable to evaluate total system replacement at this time. In this case, there is no identified need for a new system as a majority of the System is still under manufacturer support up until at least 2018. The County demonstrated that it met or exceeded the requirements of the Purchasing Code for using a sole source procurement and the subject was publicly discussed and the economic justification is clear.

In addition, Staff believes that the conclusion of the OIG is also in error as it mischaracterizes various actions and supposed "facts". The key issues are described below.

- A. APCO 25 standards (voluntary, not mandatory compliance) were developed for the primary purpose of increasing interoperability through open architecture of only an over the air digital voice standard for public safety. While open architecture lends itself to a more competitive bidding environment, analog is in and of itself interoperable and the County has proven this since 2001. It is not reasonable to believe that the Federal government, by adopting a digital voice standard, envisioned accelerating the replacement of a system solely for the purpose of creating a competitive bidding scenario; 1) when interoperability already exists through other means, 2) is not otherwise required to meet new functionality or operational requirements, and 3) is not within the budget priorities of governmental entities. *Application of the IG's conclusion would result in the County and its governmental partners replacing expensive end user equipment that does not need to be replaced and spend money for the sake of saying it conducted a competitive selection. The IG's recommendation would also require the County to abandon the planning and written commitments made with its partners over the last 12 years to implement its recommendation.*
- B. Just because there is no specific report with a ribbon and bow relating to the County's plans for EOL issues does not mean that analysis, coordination and planning did not



occur. The County has been very diligent in monitoring and sharing system performance reports, analyzing past failures, and assessing future risk and mitigation strategies with County agencies and with its governmental partners. *The coordinated planning efforts of the County merging the interoperability, intergovernmental and financial policies and objectives gave the County security from funding constraints, the time necessary to evaluate options, and the flexibility to allow each local government to change or not change on its own schedule without jeopardizing interoperability.* There are few counties or cities of similar size and condition with this flexibility, set of options for the future and funds allocated to implement those plans. The OIG cited the Montgomery County MD 2009 report as an example. Yes, Montgomery County had a report with a ribbon and a bow, but that report was required to address a number of converging issues with the order of priority being; 1) developing a re-banding strategy, 2) addressing major operational issues such as coverage and system reliability in certain areas, 3) pending legislative changes which would make additional funding available for these purposes, and 4) EOL on system infrastructure.<sup>1</sup> With regard to the EOL issues on system infrastructure they were going to hire a consulting firm to undertake the planning and budgeted \$300,000 in FY 11 for that activity with additional \$1,700,000 for planning/design becoming available in FY 14 and no estimate or projection of funding availability for the estimated \$50M in actual expenditures for acquisition/implementation of new infrastructure in the FY11-16 CIP.<sup>2</sup> Staff was not able to find any further documentation on the web further updating the report, but we are aware that while they have purchased \$20M in new APX radios, they have yet to commit to any specific strategy for the EOL issues on their MSE or determine a path for migration to a P25 compliant system. In addition, the purchase of the radios would not have solved their documented operational issues. Staff does not see how the IG can point to this report as demonstrating a superior result for Montgomery County.

- C. The IG characterizes the \$14M spent on the System since 2000 as the cost associated with inadequate planning for EOL or Staff's predisposition to a sole source procurement. Not true. The approximately \$1,000,000/year was spent on reasonable maintenance of the system *and has not been spent addressing EOL issues.* The remainder of the funds spent with Motorola were required for the purchase of additional consoles and appurtenances as requested by municipalities by agreement and had nothing to with the County's maintenance or EOL issues.

Further, while it is accurate that expenditures to Motorola have been approximately \$41M since the system's inception in 2001, it is not accurate to compare the \$26.9M in initial system costs (system infrastructure and towers, dispatch consoles and subscriber units for all County entities including PBSO and Fire Rescue), to the approximately \$12M in infrastructure and console maintenance expenses of the County and its partner

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<sup>1</sup> This is based on Staff's reading of the 2009 report .

<sup>2</sup> This is based on a October 2010 Memo prepared by Montgomery County's IT Advisor and Senior Legislative Analyst.

cities or to the \$2M in operational/subscriber unit expansions. Any conclusions drawn between the cumulative or relative amounts of these expenditures are baseless.

While Staff does not concur with the OIG's findings and conclusions, Staff has previously committed to the Board in the August 21, 2012 BCC item and verbally at the meeting, that we will evaluate full system replacements prior to any future major replacement expenditures whether due to EOL issues, the needs for additional functionality beyond the existing system's capability, or the desire to achieve full P25 compliance.

C: Robert Weisman, County Administrator  
Nancy Albert, Director Electronic Services and Security  
Mark Filla, ESS/Public Safety Radio System Administrator  
Sheryl Steckler, Inspector General