OFFICE OF INSPECTOR GENERAL
PALM BEACH COUNTY

AUDIT REPORT: 2013-A-0001
OPEN SKY PUBLIC SAFETY RADIO SYSTEM,
MUNICIPAL PUBLIC SAFETY COMMUNICATIONS CONSORTIUM (MPSCC)

Dennis Schindel
Director of Audit

Sheryl G. Steckler
Inspector General

"Enhancing Public Trust in Government"

SUMMARY RESULTS AT A GLANCE

We self-initiated this audit after a series of critical newspaper articles reported on concerns raised by the City of West Palm Beach (WPB) regarding the cost and performance of the Harris Corporation (formerly M/A-COM) OpenSky digital public safety radio system. Acquisition and implementation of the OpenSky system has been managed by the Municipal Public Safety Communications Consortium (MPSCC) established in July of 1999 and incorporated as a non-profit government organization in April of 2000. The goal of the MPSCC was to plan, design and implement a county wide interoperable municipal public safety radio system.

Better Planning and Project Management of Open Sky Could Have Improved System Implementation

While a great deal has been accomplished, and many obstacles overcome, OpenSky has taken almost a decade to become operational since the MPSCC was first formed. During that time MPSCC membership significantly declined from 33 municipalities to the current membership of six municipalities plus the School District Police. As a result, the original goal of having a county wide interoperable public safety radio system for the majority of municipalities has not been fully realized.

As we reviewed the history of this project we identified the following weaknesses in the planning and management of OpenSky that prevented a timelier and more effective implementation:

Planning

- Funding for the project was not adequately established before moving forward. This resulted in a significant gap of over five years between contract award (2001) and contract execution (2006). The lack of progress during that period resulted in the majority of member municipalities withdrawing from the MPSCC. This also resulted in over $258,000 in dues paid to the MPSCC by municipalities that eventually withdrew and received no benefit from those payments.

- System requirements and specifications originally established in the Request for Proposal (RFP) issued in December 2000 were not adequately re-evaluated when the contract was signed in June 2006. One key specification, OpenSky's ability to penetrate inside buildings (the 12dB[1] attenuation factor), remained unchanged. The inability of OpenSky to penetrate structures exceeding 12dB is a weakness that can impact officer and public safety in

[1] dB (decibels) is a unit used to measure radio signal strength. Buildings generally reduce signal strength. This is referred to as the attenuation factor.

all municipalities on the OpenSky system.

Management

Implementation of OpenSky has lacked a strong project management structure. Project manager responsibilities have been too fragmented and there was little documentation showing that project schedules and milestones were monitored and adjusted as delays occurred. Lack of strong project management oversight has led to a number of implementation problems including:

- The original target date of March 21, 2007 for completion and acceptance of Phase1 was significantly exceeded. The first of the three Phase1 municipalities, Palm Beach Gardens (PBG), did not become operational until September 2009 and the second, Palm Beach (PB) not until April 2010. The third, WPB is still not operational. System acceptance occurred on July 20, 2010 over 40 months after the original target date.

- Acceptance testing processes were not always strictly adhered to. Also, the final acceptance test required by the contract was not completed.

- System interoperability[2], a key requirement included in the contract, was not formally tested and results documented prior to system acceptance. After we brought this to their attention, the MPSCC had their consultant conduct a limited test of interoperability with the County system on August 14, 2012. We observed that test and voice communication worked.

- The final acceptance test performed in WPB in August 2009, was not well planned and managed and no formal assessment was conducted to identify the exact causes for and resolve the problems that resulted in that test being terminated. Identifying and addressing the specific causes could have resulted in a determination of whether OpenSky will work in WPB.

Contracting Practices Used in OpenSky Did Not Adequately Protect Expenditure of Public Funds

During our review we identified a number of issues with the contracting practices followed by the MPSCC including concerns with the terms and conditions of the M/A-COM (Harris) contract for OpenSky.

The total cost for the OpenSky contract was $4,566,000 to cover Phase 1 of the system (deployment of OpenSky in PBG, PB and WPB). Based on the terms, conditions and payment schedule established in the contract, MPSCC paid $4,002,824 (88%) of the total contract price before OpenSky went through full acceptance testing. In addition, a clause in the contract allowed the vendor to deem OpenSky accepted without all acceptance tests being successfully completed and without formal acceptance by the MPSCC.

In contrast, we found that in a similar contract between New York State and M/A-COM for a statewide OpenSky system, the State was not obligated to pay M/A-COM until Phase 1 was completed, tested and accepted. Considering that this was relatively new and unproven public safety radio

[2] The ability of police officers on OpenSky to talk directly with officers on the County and other municipal public safety radio systems.

technology, stronger contract provisions should have been in place to better protect the MPSCC and its members.

As previously mentioned, there was a five year gap between the award of a contract to M/A-COM and the actual execution of a contract between MPSCC and M/A-COM. Considering the length of time, we question whether a new RFP or other solicitation should have been issued in lieu of signing a contract with M/A-COM based on an RFP developed five years earlier.

Finally, we also identified three other contract issues:

- A consulting contract was issued by Palm Beach County in the initial stages of the MPSCC public safety radio project, in which three payments totaling $89,353 were made for deliverables that could not be performed. The three deliverables were for installation, testing and acceptance; however the payments were made four years before a contract for a system was signed.

- A consulting contract was issued by the MPSCC with no documented deliverables to support the payment of $164,510.

- A purchase order was issued by the MPSCC for $85,764 in additional radio equipment that should have been purchased by a contract "change order."

OpenSky is Performing to Contract Specifications in Five Municipalities

The MPSCC has deployed the OpenSky public safety radio system in the municipalities of PBG, PB, Atlantis, Jupiter and Juno Beach. The system has been operational in PBG for over three years, in PB for over two and half years and in Atlantis for almost a year with no major system problems or outages reported. Acceptance test results show that OpenSky is performing to contract specifications.

In August, 2012, we observed acceptance testing prior to deployment of OpenSky in Jupiter and Juno Beach and found that overall the system performed well. Also, interoperability has been achieved with the County and other municipalities. In addition, the Palm Beach County School District Police are currently implementing and testing OpenSky under a separate contract with Harris. The MPSCC has worked effectively with Harris to overcome early problems and get OpenSky operational in the five municipalities.

Our Survey of Officers Using OpenSky Had Mixed Results

Although OpenSky is operational in five municipalities, there appears to be performance issues that the MPSCC will need to address as it continues to manage and maintain OpenSky. In a survey we conducted of police officers in PBG, PB and Atlantis, over 69% indicated that they experienced radio problems that could impact officer and public safety. Most common among problems cited were dead spots, poor audio quality and dropped calls.

These results differ significantly from what we observed in the Jupiter/Juno Beach test and could indicate the system is performing better in some areas than others. The MPSCC must address this, especially since the types of problems reported in our survey could impact officer and public safety.

Questions Remain Unresolved on OpenSky Operability in WPB

To date, WPB has invested over $5.1 million in OpenSky. However, the system has not been successfully deployed in WPB. Plans for deployment were halted after significant problems were encountered during a final acceptance test in August 2009.

Several enhancements have been made to the OpenSky system since that failed test in WPB that have improved system performance. In addition, a later test performed in WPB by an independent firm, RCC Consultants, Inc (RCC) in February of 2011 concluded that OpenSky performed well except for concerns involving indoor coverage in certain buildings that exceeded the 12dB contract specification.

However, for OpenSky to meet the needs of WPB, and mitigate officer and public safety risks, the system needs to perform better than current contract specifications. This may require additional transmission sites at an estimated cost of $440,000.

WPB has a number of options available to them. Based just on the next five years' net costs, WPB's least cost option would be to move to the County's current Motorola analog system. However, as we discuss more fully in the details of our report, other factors, including future costs to migrate to digital technology need to be considered in making a decision among the various options.

We were also informed that the MPSCC, Harris and WPB are currently discussing the option of providing WPB with the Harris P-25^{IP} digital radio system integrated with OpenSky. We have not seen the cost estimate on this proposal.

With regard to OpenSky as an option, since WPB has never passed a full acceptance test, additional testing would be needed to determine how well the current OpenSky configuration performs throughout WPB.

The MPSCC has Considered Both Maintenance and Future Plans for OpenSky

The contract with M/A-COM (Harris) OpenSky includes language that requires Harris to provide, "full availability of all parts, components or comparable parts and service for a period of seven (7) years on all Seller manufactured infrastructure equipment and for five (5) years on all subscriber equipment from the last date of manufacture." Harris Corporation has announced OpenSky2 as the next generation of the OpenSky product line which uses the same radios and backbone equipment as OpenSky.

The MPSCC contracts with the local Citation Communications office for 24/7 OpenSky support. The MPSCC has a reserve bank account with a balance of $448,821 as of September 30, 2011. However, this balance is not based on any planning or analysis of the future replacement costs for OpenSky and the MPSCC will need to begin setting aside funds now for eventual system replacement.

Stronger Accounting and Administrative Procedures and Controls Are Needed

As part of our review, we identified funding of $7.1 million that has been received by the MPSCC since its inception. We tested expenditures totaling $5.1 million to verify funds were properly spent and accounted for. Our sample did not identify any improper expenditures.

In performing the audit work, we noted that certain MPSCC's accounting and administrative procedures and processes were not well developed. MPSCC lacks:

- Financial statements in conformity with governmental accounting standards.
- A formal budget policy and defined accounting roles and responsibilities.
- Inventory tracking controls over capital equipment.
- A travel and expense reimbursement policy.
- A document retention policy.
  .
- Segregation of duties for payment transactions.

In addition, MPSCC has never had an annual audit of their financial statements, although it is required by the inter-local agreement with their members.

We also noted, in our sample testing of expenditures, five payments totaling $32,656 lacked a required second authorizing signature, and eleven expenditures totaling $55,647 lacked evidence of required MPSCC Board approval.

These conditions are due in part because, since its inception, MPSCC has operated without any full time salaried employees, and finance activities have been conducted by staff from municipal member police departments as collateral duties. We do not believe this arrangement is sustainable long term.

More Coordination and Cooperation between the MPSCC, the County and Municipalities Can Further the Goal of County Wide Interoperable Public Safety Radio Communications

During the mid nineties and into the early 2000's several committees, subcommittees and working groups were formed to address the radio communication needs of the County and the municipalities, such as the Countywide Public Safety Communications Committee (CPSCC) and the Communications System and Operations Policy Advisory Committee (CSOPAC). They have all since been disbanded. Meanwhile, the MPSCC has implemented OpenSky which, while serving far fewer municipalities than originally planned, still represents a significant investment of both time and money in establishing an interoperable municipal public safety radio communication system.

The County meanwhile, recently initiated a renewal replacement sole source procurement to replace end of life backbone equipment for their current Motorola SmartZone 3.0 analog public safety radio system. This purchase will enable the County to continue to operate their current Motorola analog system for the immediate future while also paving the way for an eventual conversion to a digital public safety radio system.

Other municipalities, such as Delray Beach, Boynton Beach and Boca Raton are also facing decisions on the replacement of their aging analog public safety radio systems.

As technology advances and all parties move forward with plans for enhancing or

replacing current radio systems, it would benefit the County and its citizens to re-establish a public safety radio communication committee, with representation from the County, municipalities and the public safety community.

Such a committee could help ensure more cohesive planning and coordination that achieves appropriate levels of interoperability, while providing the various public safety entities flexibility in choosing among systems and technologies available now and in the future.

Our report contains 18 findings and 26 recommendations to address those findings.

We received responses from the City of West Palm Beach, Palm Beach County, and the MPSCC. All three entities generally agreed with those recommendations for which they were responsible for taking action. We summarized their responses in the body of the report and have included each response in its entirety as a separate attachment.

BACKGROUND

Planning for a countywide public safety radio system can be traced back to 1990 with the issuance of the Kalmanoff Report, a comprehensive study of the County's criminal justice system and services related to crime. That report recommended a consolidation of police communication services among County and municipal law enforcement agencies. Early efforts focused on developing a countywide system that would encompass both County and municipal public safety agencies. Ultimately, estimates for such a countywide system were deemed too costly. Eventually the County moved forward to procure an 800 MHZ Motorola analog radio system for the use of County entities.

The municipalities meanwhile, through the Countywide Public Safety Communications Committee (CPSCC), a committee of the Criminal Justice Commission formed in August 1994, started planning for a municipal solution. Their efforts led to the creation on April 1, 2000 of the not for profit Municipal Public Safety Communications Consortium (MPSCC). MPSCC's mission was to provide management, administration and technical services necessary to establish a countywide interoperable public safety radio system for use by County municipalities. Initial membership for the MPSCC included 33 municipalities and the Palm Beach County School District Police.

The MPSCC utilized a contract issued by the County with L. Robert Kimball & Associates (Kimball) to develop a Request for Proposal (RFP) for the procurement of a public safety radio system. The RFP titled “Provision of Municipal Voice and Data Interoperable Radio Network” was issued on December 7, 2000. On March 23, 2001 a letter of award for contract negotiations was issued to TYCO M/A-COM. After a five year delay, due to lack of funding, a contract was signed between the MPSCC and TYCO M/A-COM on June 22, 2006 for an 800 MHz OpenSky Voice and Data Digital Radio Communication System. The contract price was $4,556,000 which covered equipment and services for build out of Phase 1 to include PBG, PB, and WPB. Harris Corporation (Harris) acquired the contract through acquisition of M/A-COM on May 29, 2009.

OBJECTIVES, SCOPE AND METHODOLOGY

The scope of our audit of the OpenSky public safety radio system acquisition and implementation encompasses both performance and financial objectives.

The primary audit objectives addressed the following:

1. Was the Public Safety Radio System procurement and implementation adequately planned and managed?
2. Does OpenSky meet the operability needs of the MPSCC member municipalities?
3. What are the future plans for maintenance and support?
4. Have all Federal, County and Municipal funds been adequately controlled, accounted for and properly expended?

Our methodology included but was not limited to:

- An historical review of the Countywide public safety radio project;
- A review of the contracts associated with the public safety radio project;
- A review of the implementation planning and management of OpenSky;
- A review of the OpenSky testing by MA/COM (Harris), the MPSCC and others;
- A judgmental sample selection based on the financial materiality and testing of the MPSCC financials including policy, budget, and expenditures;
- A survey of the current OpenSky radio system users; and
- Interviews with MPSCC members, OpenSky technical support staff, and professionals/administrators associated with public safety radio systems.

This audit was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

FINDINGS AND RECOMMENDATIONS

PLANNING AND MANAGEMENT OF OPEN SKY

While the MPSCC has gotten OpenSky operational in five municipalities, it has taken over a decade to get to this result. In evaluating the history of this project, we identified a number of weaknesses in the planning and management of OpenSky that have contributed to delays and other implementation problems that the MPSCC has experienced. Some of these represent lessons learned that need to be avoided in future projects of this nature.

Finding (1): FUNDING ISSUES WERE NOT RESOLVED BEFORE INITIATING A CONTRACT SOLICITATION

The MPSCC did not have an approved source of funding available when they initiated the procurement of a municipal public safety radio system back in 2000. On December 7, 2000, the MPSCC issued an RFP entitled ""Provision of a Municipal Voice and Data Interoperable Radio Network". On February 16, 2001, two proposals were submitted in response to the RFP, one by M/A-COM and the other by Motorola. On March 23, 2001, the MPSCC sent an award letter to M/A-COM advising them of the intent to move forward with contract negotiations to purchase the M/A-COM OpenSky radio system. The cost of OpenSky in the M/A-COM proposal was between $13.6 million and $17 million based on the MPSCC membership, which at that time, consisted of 33 municipalities and the School District Police.

Documentation we obtained showed that the CJC and subsequently the MPSCC planned to fund the project with a surcharge on traffic tickets commonly referred to as $12.50 money.[3] The Board of County Commissioners passed resolutions in 1999 and again in 2002 to allow for allocation of a portion of the County's $12.50 money to municipalities to support their participation in the County's intergovernmental radio communication program (ICP). Funds would be allocated to each municipality based on that municipality's actual $12.50 collections. The projected $12.50 fund balance for the 33 municipalities participating in the MPSCC OpenSky system as of October 31, 2001 was $1.74 million. The MPSCC's funding plan was to use this amount as a down payment for the contract. The balance would be funded over ten years using the estimated $1.1 million annual $12.50 funds that would accumulate in each MPSCC member's municipal accounts.

However, from the beginning, County administration maintained that the OpenSky system does not meet the eligibility requirements for $12.50 money. The MPSCC disputes this; however County administration has consistently maintained that expenditures for OpenSky are not eligible for $12.50 funds. Without access to $12.50

[3] Per Florida Statute 318.21 (9), $12.50 from each moving traffic violation must be used by the county to fund that county's participation in an intergovernmental radio communication program approved by the Department of Management Services"

money, the MPSCC had no other specific source of funding. As a result, the MPSCC could not proceed with negotiating and signing a contract with M/A-COM for the OpenSky system until 2006; five years after they issued the award letter.

During this five year period, as the MPSCC attempted to secure funding, 25 of the original 33 member municipalities, as well as the School District Police withdrew their membership. This significant drop in membership reduced the size and cost of the OpenSky system sufficiently to allow the MPSCC to proceed in 2006 with a contract for a Phase 1 build out that would be funded by the three Phase 1 municipalities, PBG, PB, and WPB.[4]

Without a firm commitment for funding the MPSCC should not have proceeded with contract solicitation and award. Since the five year delay in getting the project started resulted in the significant drop in MPSCC membership, the original goal of establishing a countywide municipal public safety radio system was diminished. In addition, it resulted in some municipalities expending funds for which they received no benefit. As the following schedule shows, there were 11 municipalities who paid a total of $258,559.50 in dues to the MPSCC from 2002 to 2008. These municipalities subsequently withdrew from the MPSCC. In accordance with their Interlocal agreement they were not entitled to a refund of the membership dues and as a result, they received no benefit.

Membership payment summary from the municipalities which dropped out the MPSCC on or before FY 2008:

	FY 2002	FY 2003	FY 2004	FY2005	FY2006	FY2007	FY2008	
Deposit membership Dues:								
Town of Lantana	4,000.00	4,000.00	4,000.00	4,950.00	4,950.00	4,950.00	6,985.00	
Village of North Palm Beach	4,000.00	4,000.00		4,950.00	4,950.00	4,950.00		
Boynton Beach	15,000.00	15,000.00	15,000.00		18,562.50	18,562.00		
South Palm Beach	4,000.00							
Palm Springs	4,000.00							
Manalapan	4,000.00							
Tequesta	4,000.00							
Boca Raton	15,000.00							
Lake Clarke Shores	4,000.00							
Greenacres	10,000.00	10,000.00	10,000.00	12,375.00				
Lake Worth	10,000.00	10,000.00	10,000.00	12,375.00				**Grand Total:**
Total	78,000.00	43,000.00	39,000.00	34,650.00	28,462.50	28,462.00	6,985.00	**258,559.50**

Recommendations:

1) The MPSCC should ensure that sufficient funding exists before proceeding with any procurement and especially before awarding a contract.

[4] After the contract was signed in 2006 additional membership changes occurred resulting in the current MPSCC membership of 6 municipalities. Also, the School District Police rejoined the MPSCC in 2010 and is implementing OpenSky under a separate contract with Harris Corporation.

Management Response: MPSCC

1) The MPSCC will continue to provide the proper procurement practices by requiring funding to be established prior to purchase or contract for purchase.

Finding (2): SYSTEM REQUIREMENTS AND TECHNOLOGY CHANGES WERE NOT ADEQUATELY RE-EVALUATED FIVE YEARS AFTER THEY WERE FIRST ESTABLISHED

As we discussed above, over five years elapsed between the issuance of the RFP in December, 2000 and the signing of a contract with M/A-COM for OpenSky in June, 2006. Considering that length of time, we believe the MPSCC should have re-evaluated system requirements and issued a new RFP to determine if additional vendors, more advanced technology, or both were available to meet their members' needs. Also, MPSCC membership had substantially changed, from 33 municipalities when the RFP was issued, to 8 when the contract was signed. During that five year period there were also significant changes occurring to building structures and building codes.

One key contract specification that was left unchanged from the original proposal was the requirement to penetrate buildings of a certain density (attenuation factor of 12dB). The RFP issued in December 2000 categorized building structures as Light (8dB attenuation factor), Medium (12dB attenuation factor) or Heavy (20dB attenuation factor). The RFP specified a general coverage requirement of Medium Buildings throughout the county except for two Special Coverage Areas. Amendment #3 of the RFP clarified the Special Coverage area in that it recognized that certain "heavy" buildings such as hospitals, banks, condominiums, etc. may not have the required interior coverage and asked vendors to propose various solutions to this problem. The contract that the MPSCC signed with M/A-COM in 2006 did not address Special Coverage areas previously identified in the original RFP.

The Special Coverage areas identified in the original RFP along with changes in infrastructure that occurred over the intervening five year period, further suggest that the MPSCC should have considered reaching out to vendors through a Request for Information (RFI)[5] in order to obtain current information regarding technology advances and building/structure density. In lieu of the RFI, the MPSCC should have re-issued the RFP. Officials with the MPSCC indicated that they were unaware of any new technology by Motorola or other vendors and therefore did not see any reason to issue a new RFP in 2006.

Because the radio system was purchased using a revised negotiated proposal by one vendor, it is unknown if an RFP or RFI could have produced a more technologically improved radio system and/or a better price for a radio system. In addition, leaving the specification for in-building penetration unchanged at 12dB has resulted in insufficient coverage in denser buildings. This needs to be resolved as OpenSky is being been built out, as we have recommended in other sections of this report.

[5] A request for information (RFI) is a standard business process whose purpose is to collect written information about the capabilities of various suppliers. Normally it follows a format that can be used for comparative purposes.

Finding (3): IMPLEMENTATION DID NOT INCLUDE PLANS FOR RADIO COMMUNICATION FOR NON-LAW ENFORCEMENT OPERATIONS SUCH AS PUBLIC WORKS, UTILITIES AND TELEMETRY DATA

The contract for the MPSCC OpenSky radio system was focused on public safety radio communications and did not directly address other radio communications such as non-police voice communication and/or analog telemetry data communications. These other two-way radio communications needs for existing or continued legacy system requirements should have been included in the implementation of the new radio communication system.

With the exception of WPB, MPSCC members' needs for public safety (police) radio communications has been addressed by the selected OpenSky radio system. This includes the implementation of OpenSky in the PBG, PB, Atlantis, Jupiter, and Juno Beach. However, there is a question of how well all the radio communication needs of the WPB can be met by OpenSky.

WPB utilizes its current Motorola SmartNet radio system for public safety (police), public utilities (voice and telemetry data), public works, parks and recreation, and volunteer groups such as Citizens on Patrol. The focus of implementation of OpenSky in WPB has been for their Police Department radio communication needs. Although possible solutions to non-police communication needs may have been discussed, no plans to solve these issues within the OpenSky configuration have been formalized or agreed upon between WPB and the MPSCC. Since implementation of OpenSky was intended to replace the existing Motorola SmartNet system, without a cost effective solution for their non-police radio communication needs, OpenSky may not adequately meet all the radio communication needs of WPB.

When we discussed this with the MPSCC, they indicated that each municipality was responsible for identifying their individual radio subscriber unit needs and purchasing those subscriber units outside of the MPSCC contract. We acknowledge that this has been the process that has been followed in acquiring subscriber units needed to operate on the OpenSky system. However, since the MPSCC was tasked with the mission to plan, design and implement a municipal public radio system for all its members, such planning should have included addressing all of their radio needs that would be impacted by the MPSCC system. This is especially important for WPB since they have a significant non-law enforcement public radio system configuration operating on their current Motorola SmartNet system that OpenSky was designed to replace.

Recommendations:

2) The MPSCC and WPB management should work together to determine whether OpenSky can provide the most cost effective solution for WPB's non-public safety radio communication needs.

Management Response: MPSCC

2) The MPSCC acknowledges this recommendation, and agrees that West Palm Beach's radio system needs, both public safety and nonpublic safety, need to be identified and a comprehensive solution provided.

Finding (4): IMPLEMENTATION OF OPENSKY LACKED STRONG PROJECT MANAGEMENT

"The Project Manager is the person responsible for ensuring that the Project Team completes the project. The Project Manager develops the Project Plan with the team and manages the team's performance of project tasks. It is also the responsibility of the Project Manager to secure acceptance and approval of deliverables from the Project Sponsor and Stakeholders. The Project Manager is responsible for communication, including status reporting, risk management, escalation of issues that cannot be resolved in the team, and, in general, making sure the project is delivered within budget, on schedule, and within scope."[6]

OpenSky project management was outsourced to Kimball, the MPSCC's implementation contractor. Kimball then assigned responsibility to a third party project manager from General Dynamics Corporation. In addition, both M/A-COM (Harris) and Citation Communications had project managers assigned to the planning and implementation of OpenSky.

We found little documentation of project schedule changes, milestones date tracking, issue (problem) resolution, task assignments, or regular status reports by the Kimball assigned project manager. It appears that without the adequate project management support for the OpenSky project, local technical staff at PBG and members of the MPSCC took on various project management duties and responsibilities although no one was specifically designated as having overall project management responsibility.

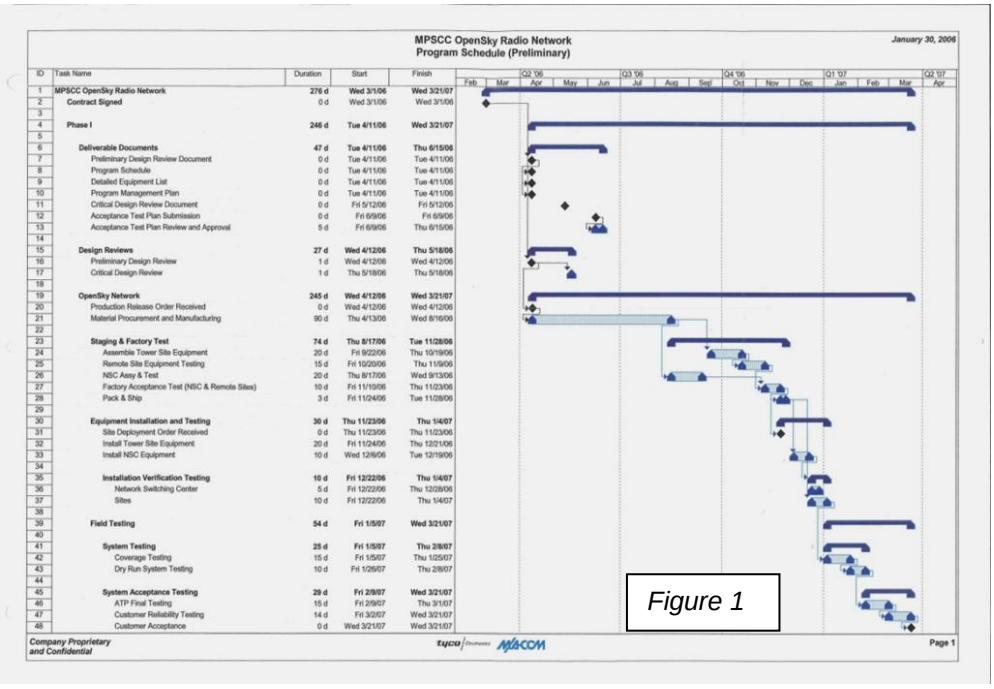


Figure 1

The only project management documentation we could find was the

[6] http://www2.cit.cornell.edu/computer/robohelp/cpmm/Project_Roles_and_Responsibilities.htm

original contract project schedule *(Figure 1)* and a plan to implement OpenSky in WPB following the RCC test in February of 2011 *(Figure 2, Page 31).* The original contract plan for OpenSky showed implementation of Phase 1, which included PBG, PB, and WPB, by March of 2007. This document was "Exhibit D" in the original contract between the MPSCC and M/A-COM and is dated January 30, 2006. Those milestone dates were significantly exceeded. Acceptance testing did not begin until July of 2009 and WPB, a Phase 1 city, is not yet operational. System acceptance occurred on July 20, 2010, over 40 months after the contract project schedule date.

In addition to significant delays in meeting the original 2007 milestone dates, there were a number of other problems we identified in carrying out and/or documenting various steps in the contract Acceptance Test Plan (ATP). A number of these problems ultimately contributed to the poor performance of the OpenSky system in the failed test conducted in August of 2009 in WPB. Following is a summary of those acceptance test issues:

RF Coverage Issues In WPB Were Identified But Not Fixed Before Proceeding With Acceptance Testing.

As a prerequisite to executing the formal ATP for Phase 1, M/A-COM (Harris) first performed an RF Integrity test to determine if there was sufficient radio frequency (RF) signal strength for on-street (outdoor) "talk out" and "talk in" as well as in-building (indoor) "talk out" and "talk in" in the planned coverage areas for Phase 1, PBG, PB, and WPB. The RF signal coverage maps showed that there was sufficient signal strength to proceed with acceptance testing of the OpenSky radio system. However, later it was discovered that the westernmost part of WPB known as Ibis had not been included in the RF Integrity map planned coverage area. In discussions with the MPSCC they indicated that this was an oversight. It was not clear how this omission occurred and why it was not identified when the RF maps were drawn in February of 2006. Better project management oversight might have resulted in recognizing and addressing this significant omission in coverage for WPB sooner.

Despite subsequently identifying this coverage omission, the MPSCC, their consultant and the vendor agreed to proceed with the radio system testing, including outdoor and indoor RF coverage and voice quality testing (DAQ[7] Test) before resolving the issues in Ibis.

The tests were conducted in all three Phase 1 municipalities, PBG, PB, and WPB, in July 2009. The test results showed that the system passed the DAQ test outdoor (840 grids tested) with 97.74% coverage and indoor (337 grids tested) with 97.03% coverage. However, the indoor test for western WPB, Ibis, was considered a "Not Tested by Mutual Agreement" area and not counted in the test result calculations. Based on the exclusion of Ibis from the DAQ indoor test, the MPSCC and Harris agreed that the indoor DAQ test was a failure for WPB. Although the DAQ test did not pass in WPB and the results were not accepted

[7] DAQ is Delivered Audio Quality.

and signed off on by the MPSCC and their consultant, the MPSCC and Harris agreed to move forward with additional parts of the acceptance testing.

We do not believe that the MPSCC should have agreed to proceed beyond the DAQ test until the coverage issues in WPB were resolved and the system passed the DAQ test. As we discuss later in this report, this became a significant problem when the final sequence in the acceptance test plan, the Reliability Test, was attempted and failed in WPB.

Acceptance Testing Procedures For the RF Coverage Test May Not Have Been Properly Followed.

One of the key tests in the acceptance testing sequence for any public safety system is the Radio System RF Coverage test which includes DAQ testing. This test, in addition to measuring the strength of the signal received by the radios throughout the predicted coverage area, measures the quality of the voice communication both talk out (from dispatch to the radio unit) and talk in (from the radio unit to dispatch). A sufficient number of locations (grids) are tested both outdoor and indoor to verify coverage throughout the required coverage area. A specific criterion is established for scoring the voice quality on a scale of 1 to 5. A voice quality score of 3.4 or higher is required to pass for each test point.

As previously discussed above, the DAQ test for OpenSky was conducted in July of 2009 covering all three Phase 1 municipalities, PBG, PB and WPB. The test was performed over four days starting on July 9th. The test results showed that for outdoor testing, 840 grids were tested with 821 scored as passing (97.74%). Indoor tests showed 327 out of 337 grids passing (97.03%).

As part of the documentation we reviewed for this test, we obtained a document marked "Confidential Kimball Use Only." This document represented notes taken by one of the Kimball consultants who participated in the DAQ test. This document contained a number of observations that seemed to question the procedures followed during testing, as well as the pass/fail scores being given. The document also noted numerous radio performance problems. Examples of observations made by the Kimball consultant include:

> *"I observed that, in most transmissions, [dispatch] only gives a short reply and not a few seconds of audio, which is what the test requires"*
>
> *"Overall, the grid is being considered as either "pass" or "fail" without regard to the scoring levels used in the ATP"*
>
> *"In my opinion, the system would not pass as there is a great deal of digital echo...audio dropouts, and partially broken transmissions throughout the area"*
>
> *Overall, I would estimate that more than 50% of the grids have less than DAQ 3.0, but some of these grids are outside the jurisdiction"*

> *"Also, in-building coverage is questionable...Given that this system is used for law enforcement, I am not comfortable with the overall coverage and quality"*

The Kimball consultant's observations taken as a whole appear to contradict the recorded tests results showing a pass rate above 97% for both outdoor and indoor DAQ testing. We saw no documentation from either the MPSCC or Kimball on how these observations were resolved. We discussed the Kimball document with the MPSCC and they indicated that some of the radio problems identified resulted from grid testing that was performed beyond the required coverage area to establish the outer boundaries of the system. They also stated that problems identified during that DAQ test were addressed and resulted in a number of significant improvements to the OpenSky system, many provided by Harris at no cost to the MPSCC.

We agree that the MPSCC has been effective in working with Harris to make substantial hardware and software upgrades that have improved system performance since this 2009 test. However, we also believe that the Kimball consultant's observations bring into question whether the recorded DAQ test results accurately reflect the system's performance at that time and whether the ATP test protocols were followed. Having recorded acceptance test results that show the system performing better than it actually is, even if the problems are eventually fixed, puts the buyer at risk for accepting a system that could subsequently require costly improvements to bring performance up to contract requirements. Having a stronger project management structure in place would help guard against any deviations from acceptance testing requirements or scoring of tests results that may not accurately reflect actual test results.

The Final Reliability Test Performed in WPB Was Not Well Planned and Managed.

Despite the fact that the July 2009 DAQ test was considered a fail for WPB, due primarily to lack of coverage in Ibis, the vendor and the MPSCC agreed that testing procedures should continue on to the final step in the acceptance testing sequence, the System Reliability test, per the contract's ATP for WPB, PBG and PB. A system reliability test was scheduled for WPB for August 31, 2009.

The “system reliability test” is described in the ATP as:

> The fourteen (14) day Reliability Test will be conducted once the Acceptance Tests listed above (Sections 1-13) have been approved by both the Seller and Buyer and is subject only to System Failure scenarios as defined in Table 1 below. The loading of the system will be comprised of no more than eight (8) users, being a mixture of 4 mobiles and 4 portables.

Failures shall be defined as follows:

Major System Failure - A Major System Failure shall be defined as occurring when the system experiences one of the failures of Seller-supplied hardware described in Table 1 which compromises the system's ability to operate as a wide area trunked radio system.

Minor System Failure - A Minor System Failure shall be defined as occurring when the system experiences one of the failures of Seller-supplied hardware described in Table 1 that is considered minor in nature and has no material effect on the overall operation of the system or major system components.

Table 1 - System Failure Definitions

	Failure Description	Major	Minor
a)	Failure of System Control Equipment	X	
a1)	Failover from Primary to Standby (SCE)		X
a2)	Failure of Primary & Standby (SCE)	X	
a3)	Failure of Network Administration Server		X
a4)	Failure of Regional Network Manager		X
b)	Failure of Site Control Equipment	X	
c)	Failure of Two (2) or more Site Base		X
d)	Failure of < One (1) Site Base Stations		X
e)	Failure of Cell Site		X
f)	Failure of Two (2) or more consoles	X	
g)	Failure of one console		X
h)	Failure of same or like item of backbone	X	
	equipment > Three (3) times during		
	Reliability Test period		

We found little documentation related to this test. However, from our interviews of individuals involved in various aspects of the test, we concluded this WPB test did not follow the test protocol described above. The WPB test used a test configuration that included a combination of Motorola and Harris equipment. Radio communications were transmitted through the OpenSky Gateway using both Harris and Motorola radios communicating to dispatch operators manning WPB's Motorola SmartNet dispatch consoles. A total of 40 officers were included in the test using some combination of Harris and Motorola portable and mobile radios.

During the test WPB officers were consistently reporting numerous radio communication failures and after three days, on September 2, 2009, the WPB test was cancelled over concerns for officer and public safety.

We could not clearly establish who, if anyone had overall responsibility for the planning and execution of this test. However, it was not controlled and managed by the MPSCC or their consultant Kimball, who was responsible for project management for MPSCC. According to one official with the WPB Technical

Team, they were not responsible for organizing or conducting the test although they did monitor some of the results. Officials within the WPB Police Department had various roles related to assembling, prepping and assigning out radios to the officers participating in the test but we were not able to establish whether anyone from WPB had overall responsibility for planning and managing the test. Again, a lack of sound project management by the MPSCC, with one individual having overall responsibility, resulted in this test being poorly planned and executed.

The West Palm Beach Test Results Were Not Adequately Documented and Evaluated

There were many reasons presented by Harris, the MPSCC, and WPB as to why the reliability test failed in WPB. These included:

- How the hardware and software systems were configured,
- How the users operated in a mix of the analog Motorola equipment and digital OpenSky equipment,
- Questions about whether Harris radios, which had been in storage, were properly prepped and batteries charged, and
- Inherit problems with the OpenSky system.

However, we were not able to locate any documentation that recorded the results of this test even for the abbreviated three day period that it was run. Also, as a follow-up to the abrupt termination of the test, there was no "root cause analysis" or after action report done by the MPSCC to make an informed, factual determination of the underlying cause(s) for why the OpenSky system performed so poorly. The system's performance in this test was especially puzzling given the results of the RF Coverage/voice quality (DAQ) test that was done less than two months earlier that showed over a 97% pass rate for both outdoor and indoor coverage.

The WPB Technical Team produced two reports critical of OpenSky subsequent to the August 2009 test, one dated November 08, 2009 and another dated September 20, 2010. Those two reports raised serious doubts among WPB officials about the viability of OpenSky to operate in WPB and the issue has remained unresolved to this date. The MPSCC should have done more to identify the causes for the poor performance of OpenSky in the August 2009 test. This could have resulted in a more timely resolution on whether OpenSky can work in WPB. This was another outcome of not having strong centralized project management in place.

Steps were skipped in the acceptance testing plan

Reliability Test: Despite the fact that the Reliability Test in WPB failed and was terminated after three days, the MPSCC decided to continue on with implementation of OpenSky in both PBG and PB. Without a formal reliability test, PBG went live with the OpenSky system on September 1, 2009 and PB went live on April 1, 2010. Therefore the OpenSky system never passed a full formal 14

day reliability test with documented test results. In reviewing the contract acceptance test documentation, we also noted that the fourteen step "Acceptance Test Procedures" which include the Reliability test were never signed-off by the MPSCC or their consultant/project manager Kimball.

Interoperability Test: The MPSCC RFP states, "The overall goal of this project is to develop the means to bring together all of the public safety agencies operating in Palm Beach County under one communications umbrella which will provide instant direct voice communications and data sharing." One of the objectives developed by the MPSCC was to "Provide countywide interoperable voice and data communications with seamless user roaming via one radio network between the thirty member municipalities, County, State, Federal and Military agencies."

The MPSCC contract, dated January 27, 2006, included in Section 9 of the Acceptance Test Procedures the testing of "Interoperability". However, when we requested documentation to support that interoperability of OpenSky was tested the MPSCC was unable to provide it. Subsequently as we were nearing the completion of our audit, the MPSCC staff, Citation Communications and Kimball performed and documented a test of OpenSky interoperability with the County Motorola system. through the OpenSky gateway. We observed this test. The test successfully established two way voice communication with a PBSO officer on the County Motorola system.

Recommendations:

3) WPB should work with the MPSCC to plan and schedule another System Reliability test utilizing the standard Harris equipment configuration.

4) The MPSCC needs to ensure for future acquisitions or any expansion of the current OpenSky system, that all acceptance testing required by contract is completely and fully documented.

Management Response: MPSCC

3) A proposal for a P25 system was received by the City of West Palm Beach.

4) The MPSCC agrees and will arrange for any future testing to include more extensive and comprehensive documentation.

Management Response: WPB

3) A proposal for a P25 system was received by the City.

OIG Comment:

If the MPSCC and WPB move forward with acquisition of a P25 system, recommendation 3 will no longer be applicable. A new acceptance test plan will need to be developed, performed and documented as part of the acquisition of a P25 system.

CONTRACTING PRACTICES

During our audit we identified a number of issues with contracting practices followed by the MPSCC including concerns with the terms and conditions of the M/A-COM (Harris) contract for OpenSky.

Finding (5): THE CONTRACT PAYMENT SCHEDULE COULD HAVE BEEN CONSTRUCTED TO PROVIDE MORE PROTECTION FOR THE EXPENDITURE OF PUBLIC FUNDS

The total cost for the OpenSky contract was $4,566,000 to cover Phase 1 of the system (deployment of OpenSky in PBG, PB, and WPB). Based on the terms, conditions and payment schedule established in the contract, MPSCC paid $4,002,824 (88%) of the total contract price to the vendor before OpenSky was subjected to acceptance testing.

In contrast, under the terms of a contract that was executed between the State of New York and M/A-COM for OpenSky, the State was not obligated to pay M/A-COM until the Primary Region (Phase One) was completed, tested and accepted. Ultimately, the system was unable to pass Phase One acceptance testing and the contract was terminated. Considering that this was relatively new and untested technology, at a minimum the MPSCC could have established a contract payment schedule that would have provided for a more substantial portion of the total contract price to be paid upon successful passage of all acceptance testing.

We acknowledge that as the system was built out and went through acceptance testing, the MPSCC was successful in working with Harris to fix problems, upgrade hardware and software and tune the system to perform to contract specifications. However, the original contract was with M/A-COM and therefore, it is unknown whether the MPSCC would have achieved the same level of success working with M/A-COM without the leverage of a more substantial payment held pending successful completion of acceptance testing.

Recommendations:

5) For all future contracts MPSCC should ensure contract terms and conditions are sufficient to adequately protect public funds.

Management Response: MPSCC

5) In the future, milestones in MPSCC contracts will provide for more extensive validation of functionality, both in the development of the milestone and in its essential value based on the dollar amount of the milestone payment.

Finding (6) ACTIONS TAKEN BY THE MPSCC RESULTED IN ALLOWING THE VENDOR TO INVOKE THE BENEFICIAL USE CLAUSE

On July 20, 2010, Harris Corporation sent a letter to MPSCC requesting final contract payment. In the letter, Harris advised the MPSCC that PBG and PB had successfully transitioned to the OpenSky system, and therefore since they were operationally using OpenSky for "beneficial use," it was considered accepted by the buyer.

This letter was written based on the Beneficial Use clause of Section 13.2 of the contract which states:

> "Notwithstanding the Acceptance Testing of the System set forth in Section 13.1 above, if Buyer commences use of any portion of the System for its intended purpose, other than for the express purpose of training or testing as mutually agreed upon by Seller and Buyer in writing, prior to System Acceptance it shall be considered as being for the "Beneficial Use" of the Buyer and the applicable portion of the System shall be deemed accepted by Buyer. Seller must provide written notice to Buyer of any portion of the System as being for "Beneficial Use", specifying which portion of the System as being for "Beneficial Use" or said "Beneficial Use" will be waived until the date of such written notice to the Buyer from the Seller."

On August 26, 2010, the MPSCC Board met and approved payment of the final invoice for the Harris contract. On September 9, 2010, the MPSCC issued check number 141 in the amount of $553,176 to the Harris Corporation. The amount of the check represented payment of $325,000 for System Acceptance in accordance with section 9.1.5 of the contract and payment of $228,176 for Final Payment in accordance with section 9.1.6 of the contract.

While this clause is not uncommon in contracts such as this, the MPSCC's decisions to deploy OpenSky in PBG and PB before resolving performance issues in WPB did not appear to take into account the implications of this contract term. Allowing Harris to deem the system accepted and receive final payment while the largest Phase 1 city, WPB, was not operational and had not passed the final acceptance test, left the MPSCC with little or no leverage to get Harris to address the problems.

Finding (7): PAYMENTS WERE MADE FOR SERVICES OUTSIDE OF THE SCOPE OF A CRIMINAL JUSTICE COMMISSION CONTRACT

To initiate the project, the Criminal Justice Commission (CJC) entered into a consulting contract with L. Robert Kimball and Associates, Inc.(Kimball) on May 2, 2000 for $185,000. The scope of the contract was for "Support Services for the Municipal Public Safety Communications Radio Project" and included the following professional service payment milestones as referenced in Exhibit "C" of the contract:

Milestone 1:	Completion of Phase I	10%=$18,850
Milestone 2:	RFP Release	20%=$37,700
Milestone 3:	Selection of Vendor	20%=$37,700

Milestone 4:	Beginning of System Installation	20%=$37,700
Milestone 5:	Beginning of System Testing	20%=$37,700
Milestone 6:	System Acceptance by County	10%=$18,500

The contract stated:

> Article 3 – Payments to the Contractor, Sub Section A states in part "The contractor will bill the county at the amounts set forth in Exhibit C for services rendered toward the completion of the Scope of Work/Services." Article 3 – Payments to the Contractor, Sub Section B states "Invoices received from the CONTRACTOR pursuant to this Contract will be reviewed and approved by the COUNTY'S representative, indicating that services have been rendered in conformity with the Contract and then will be sent to the Finance Department for payment."

Our review of documentation showed that payments totaling $131,950 were made for completion of the first four milestones. Subsequently, a final payment was made on November 20, 2001 in the amount of $51,653 for "final work completion" and the total amount paid on this contract was $183,603. As the above schedule shows, milestones #4, 5 and 6 were for system installation, system testing and system acceptance. However, as previously mentioned, due to delays in obtaining funding, a contract to purchase the OpenSky system was not executed until June, 2006. Therefore those final three milestone tasks could not be performed.

Correspondence we obtained dating back to 2001 between the then Director of CJC and Kimball indicated that Kimball performed other services such as research, attendance at meetings and educational presentations. However, the contract was never amended to reflect that significant change in the scope of services or a determination made whether those services should have been paid at the same rate as the deliverables established in the contract. As a result, Kimball was paid $89,353 in 2001 for three milestone deliverables that were not performed.

Recommendations:

6) When contract deliverables are changed during the execution of a contract, a contract amendment or change order must be issued and a determination made whether contract costs should be adjusted.

Management Response: MPSCC

6) The MPSCC agrees that change order forms need to be executed. Also, contract changes will continue to be taken before the Board of Directors for discussion and approval.

Finding (8): CONTRACT DELIVERABLES WERE NOT ADEQUATELY DOCUMENTED

On May 22, 2006 the MPSCC entered into a contract in the amount of $164,510 with L. Robert Kimball and Associates for the provision of telecommunications and related technology services. The contract provided thirteen (13) tasks or provisions of services. These Included:

Task 1 MPSCC Advocate and General Consulting Services
Task 2 Review of M/A-COM Contracts & Equipment Lists Comprehensive System Design Review
Task 3 Project Kick-Off Meeting
Task 4 FCC Licensing and frequency Coordination
Task 5 Contract Compliance
Task 6 System Staging
Task 7 interoperability System design and implementation
Task 8 Implement the Migration/Cutover Plan
Task 9 Final System Acceptance Testing
Task 10 System Coverage Acceptance Testing
Task 11 Training
Task 12 System Documentation
Task 13 Project Close out

Payments on the contract were made beginning on October 5, 2006 and the final payment was made on August 12, 2010. During the course of this audit, requests were made by the OIG to the MPSCC and L. Robert Kimball and Associates regarding the deliverables by task as outlined in Exhibit “A” of the contract. Neither organization was able to provide documentation to support satisfaction of these deliverables. As a result, the OIG was unable to substantiate the delivery of the services as contracted.

Recommendations:

7) The MPSCC must ensure that they receive adequate supporting documentation of all contract deliverables before contract payments are made.

Management Response: MPSCC

7) The MPSCC agrees with this recommendation.

Finding (9): MPSCC FAILED TO ISSUE A CONTRACT CHANGE ORDER

The MPSCC and M/A-COM (Harris) entered into a System Purchase Contract in the amount of $4,556,000 on June 22, 2006 for the provision of “Multiple Voice and Data Interoperable Radio Network”. M/A-COM was responsible to design, furnish, deliver, and install the hardware and software for the System and provide the documentation, deliverables and services in accordance with the terms of the contract.

On December 3, 2007 a payment in the amount of $85,764.15 was made for additional equipment to relocate one of the two network switching centers for the purpose of system redundancy. This payment was made via MPSCC Purchase Order (07-100) dated April 1, 2007 and outside the contract terms and conditions of the contract between the MPSCC and M/A-COM (Harris) corporation. The contract was not amended to provide additional dollars for additional services or an increased scope of service. The contract provides in Section 8.1.1 that:

> Section 8.1.1 of the contract states: "In the event of any change in the Hardware after the approval by Buyer and Seller of the Detailed Equipment List, Seller shall prepare and submit a request for Change Order in accordance with the procedures set forth in this section requesting an equitable adjustment in the price to reflect any added cost and expense of such change."

Recommendations:

8) All MPSCC purchases made for additional OpenSky Hardware and/or Software should follow the terms of the contract with M/A-COM (Harris) and be purchased by a contract Change Order.

Management Response: MPSCC

8) The MPSCC agrees with this recommendation.

THE OPERABILITY OF OPEN SKY

The MPSCC has overcome a number of challenges in implementing OpenSky. Funding uncertainties and a shrinking membership base represent two of those challenges. However, perhaps the biggest challenge has been implementation of the digital radio technology itself. Most experts agree that digital radio systems are the future for public safety radio. They offer many advantages over older systems including more efficient use of radio frequencies. In the wake of September 11, 2001, the Federal government in an effort to promote interoperability has encouraged first responders, including those in State and local governments to move toward digital radio technology. Numerous State and local governments have done so over the past decade, motivated by the availability of millions of dollars in Federal grant money, pending FCC narrow banding requirements and the need to replace aging and capacity limited analog systems.

However, implementation of digital radio systems in the public safety environment has proven to be challenging, not just in Palm Beach County. There is a well documented history of implementation problems plaguing state and local governments throughout the country. The problems are not specific to any one product or manufacturer. At worst, such as in the case of New York State, projects were terminated altogether. In other cases, entities went back to their older analog system until problems with the digital system could be resolved. In most cases, additional network hardware and/or antennas had to be installed, and software upgrades and other fixes made, resulting in extensive delays and cost overruns.

While the MPSCC's implementation of OpenSky has not been without its share of problems as we discuss in this report, with the exception of WPB, they have gotten the system operational and performing to contract specifications in the remaining five municipalities. On balance, their results to date appear better than many other efforts throughout the country. The following summarizes our assessment of the operability of OpenSky.

Finding (10): MPSCC HAS DEPLOYED OPENSKY IN FIVE MUNICIPALITIES

OpenSky is currently operational in the municipalities of PBG, PB, Atlantis, Jupiter and Juno Beach. The following schedule shows the dates the radio system became operational in each municipality:

Municipality	Date Operational
Palm Beach Gardens	September 1, 2009
Palm Beach	April 1, 2010
Atlantis	December 15, 2011
Jupiter	May 14, 2012
Juno Beach	May 14, 2012

As the schedule shows, OpenSky has been operational in three of these municipalities from 9 months to 3 years. The system has performed to contract specifications and there have been no major system failures.

The MPSCC has been effective in working with the current vendor, Harris, to overcome some of the earlier problems. A number of upgrades have been provided by Harris including, at no additional cost, a major software upgrade, an upgrade of the subscriber units (mobile and portable radios) from the Harris P-7200 to Harris P-7300 models and new noise canceling mobile unit microphones. The MPSCC has also installed three additional “fill in" transmission sites to address coverage issues in PBG, PB, and western WPB. Harris provided two of these cell site antennas at no cost.

The MPSCC has designed OpenSky with multiple layers of redundancy. There are two geographically separate switching centers which house the backbone equipment for the system. One of the switching centers is located in a Category 5 rated building and both operate with three levels of power, FPL, generators and battery backup. The switching centers each have multiple gateway interfaces which provide for interoperability with the County radio system. Each switching center is served by microwave transmissions set up in a "ring configuration" for redundancy purposes. The primary switching center located in the Category 5 building is a particularly well designed site and has 5 additional “emergency” dispatch consoles to support dispatchers from other OpenSky members in emergency situations.

In April, 2012 the MPSCC submitted a request to the Florida Department of Management Services (DMS) for approval of their Phase 2 expansion as meeting the requirements of Florida's 2009 Law Enforcement Communication Plan (LECP). The Phase 2 expansion covers the municipalities of Atlantis, Jupiter, Juno Beach, and the Palm Beach County School District Police. The Phase 2 expansion includes twelve

additional transmission sites which will significantly expand the OpenSky footprint as well as further enhance coverage in some of the existing Phase 1 municipalities. On May 9, 2012, DMS approved the OpenSky Phase 2 expansion as meeting minimum performance standards of the 2009 LECP.

Also in April of 2012, as MPSCC was preparing to deploy OpenSky in Jupiter and Juno Beach (Jupiter/Juno), they conducted an acceptance test. The test performed was an "outdoor" and "in-building" voice quality DAQ test, the same test that was considered a failure in 2009 for WPB. As part of our audit testing, we arranged to observe the Jupiter/Juno test. The test was conducted over three days on April 19th, 20th, and 23rd.

From our observation of this test, we concluded that the OpenSky system works well. Voice communication was generally clear and coverage met or exceeded contract specifications. *(See details in Appendix 1).* The indoor Jupiter/Juno DAQ test results indicate that the system performed significantly better than in the July 2009 indoor DAQ test that was considered a failure in WPB.

However, we did identify one area of concern in our observation of the testing. Indoor test areas that failed the DAQ test, but were found to exceed the contract specification of 12dB building penetration were discarded from the test results. While this may be the correct testing protocol when testing OpenSky's performance against the contract specifications, those "failed test areas" represent a potential officer and public safety risk.

It is our understanding that the same indoor DAQ testing protocol was used for all the MPSCC municipalities and for the second DAQ test done by a third party for WPB in February 2011. This has resulted in a number of indoor locations where OpenSky will not work even though it meets contract specifications. These "dead spots" should be documented and evaluated to determine if they pose an unacceptable level of risk and whether they can be resolved to mitigate officer and public safety risks.

Recommendations:

9) The MPSCC should establish a process to document and evaluate all failed indoor test locations even those that exceed contract specifications to determine if they pose a significant officer and public safety risk that needs to be resolved. Officers should be periodically reminded to document and report locations where radio communication failures occur so that they can be recorded, mapped and evaluated to determine if additional fixes are needed.

Management Response: MPSCC

9) In the future, documentation identifying structures that exceed contract specifications for building radio signal penetration will be identified as part of the acceptance test planning (ATP) and made part of the testing protocol. Note, as a standard, buildings that are known to exceed the penetration value guaranteed by contract are not considered a failure of the contract, nor will be in the future,

however it will be documented for officer safety. Other solutions implemented for building coverage will be determined as necessary by the particular member agencies.

Finding (11): OUR RADIO SURVEY OF OFFICERS SHOWED MIXED RESULTS AND INDICATE POTENTIAL OFFICER AND PUBLIC SAFETY ISSUES

As part of our audit we developed a survey form to gather feedback from officers on the OpenSky system in PBG, PB and Atlantis. We obtained feedback from 165 officers. The majority of the officers we surveyed (90%) had been using the OpenSky radios for more than 6 months.

This survey provided an opportunity for officers to provide feedback on how the system is performing in a variety of situations that officer's encounter in carrying out their duties on a day to day basis. The survey instrument was designed to gauge the officers' opinion with respect to improvement, reliability, problem identification, problem frequency, problem resolution, safety, and any loss of functionality when using the OpenSky radio system. *(See Appendix 2 for a copy of the two page survey instrument).*

The results of the survey showed that 67% agree the system is an improvement over the old system, 79% felt properly trained, and 65% felt the system worked properly over 95% of the time. In terms of the Harris radio equipment, 83% rated the vehicle (mobile) unit as better or the same as the old system and 78% rated the portable (handheld) unit as better or the same as the old system. In response to a question as to whether the officers considered the system a total failure, 89% responded that they did not consider OpenSky a total failure.

However, in response to the following statement, "*There are radio problems that I encounter that are serious enough to adversely impact officer and public safety",* 69% strongly agreed or agreed. Among the most commonly reported problems were dead spots (no signal) followed by audio quality and dropped calls. Together they represent 82% of all the problems reported by the officers in our survey. *(See Appendix 3 for a more complete summary of the survey results).*

Our survey instrument also provided the opportunity for the officers to make specific comments. The officer's survey comments were positive, negative and neutral as can be seen from a sample of officers' comment in response to our first "agree or disagree" survey statement. "*The new digital radio system is an improvement over the (old) legacy system"*:

"Life saver"
"Voice quality and reception is greatly improved"
"Old system had numerous dead areas in town, with the new system, these all nearly have been eliminated"
"No difference noted"
"Too many dead spots which are an officer safety issue"
"No improvement, same problems in different areas"
"I do not believe the system works better at all"

However, for our statement regarding officer safety, the comments were overwhelmingly negative. A sample of those comments includes:

"Sometimes I can't understand what is said, underwater sound"
"Dead spots/loss of signal-cannot keep up"
"There are still some interior dead spots...Most are quickly corrected upon report"
"Dead spots in city, radio works fine in some areas then not at all 50 ft away"
"When I get out of the car and turn on the portable, it takes five seconds"
"*Lots of "dead spots" loss of signal in buildings such as the hospitals and some office buildings*"

We discussed these results with MPSCC officials. They indicated that problems being experienced by the officers are continually monitored and that our survey results do not reflect the type or extent of problems that are being reported to them. However, they have no formal system to document problems reported and how they are resolved.

While we recognize that there have been ongoing improvements being made to OpenSky, the survey results indicate that system users believe there are problems in several of the municipalities that are considered fully operational and relatively problem free. During our observation of the more recent test in Jupiter/Juno, we did not note any audio quality or dropped call issues. However, as previously stated, we did note “dead spots” particularly indoors.

From our observations, OpenSky performed much better in the Jupiter/Juno test than our officer survey results seem to indicate for PBG, PB and Atlantis. This could indicate the system is not performing consistently throughout the coverage area. One thing that is true of all public safety radio systems, whether analog or digital, is that how well they perform in one geographic location is no guarantee of how well they will perform in another. Performance is dependent to a great degree on where and how many transmission sites and other signal boosting devices are installed in a given area; other signal interference that may be occurring; and, the nature of the terrain and building infrastructure in that area.

So while evidence exists to show that overall, OpenSky is performing to contract specifications, our officer survey results point to a potential area of risk that the MPSCC must address to ensure problems that could impact officer and public safety are promptly corrected.

Recommendations:

10) The MPSCC needs to focus on identifying the cause(s) and resolving the three major problem areas identified by users in this survey as dead spots, audio quality, and dropped calls. Additional system testing may be needed in these three municipalities to determine if additional radio infrastructure is needed to improve coverage.

11) The MPSCC needs to implement a formal incident resolution system (help desk) to address any concerns raised by the users of OpenSky. This system should follow a standard set of technical systems guideline (such as ITIL[8]) to document and resolve all incidents and/or problems. This system should include mapping of any reported coverage problems to determine if certain locations or structures are chronic problem areas that need to be corrected.

Management Response: MPSCC

10) This is a process that we regularly perform to maintain the integrity of the system. We regularly survey officers and solicit their input for any areas that they may identify with communication problems, have fixed those problems, and will continue to do so.

11) The MPSCC agrees and will develop in-house policies/procedures to achieve this recommendation within the next 120 days.

Finding (12): THE QUESTION OF OPERABILITY OF OPENSKY IN WEST PALM BEACH REMAINS UNRESOLVED

To date WPB has spent approximately $5,178,000 on OpenSky. However, OpenSky has not been deployed in WPB and acceptance testing was never completed.

At the end of August 2009, as the MPSCC was preparing to deploy OpenSky in WPB a final acceptance test was conducted. The test involved 40 officers using a combination of Harris OpenSky radios and Motorola radios from WPB's existing Motorola system. This test was terminated after three days, due to numerous voice communication failures that were considered to pose an officer safety risk. The poor performance of OpenSky during this test resulted in a significant dispute between the MPSCC and WPB, including the WPB Technical Team (Team) who is in charge of operating WPB's current Motorola radio system. To date this dispute has not been resolved and the test that failed in August of 2009 has never been re-run.

As previously mentioned on page 25, there have been a number improvements made to OpenSky since the failed August 2009 test. In particular, three additional cell sites were installed including one in the western part of WPB known as Ibis to resolve coverage problems previously identified. The software upgrades as well as the upgrade of the portable radios have also improved system performance.

There have also been two additional tests performed in WPB since the failed test in August, 2009. In a July 2011 report to WPB evaluating all acceptance testing performed on OpenSky, Harris provided documentation on a test they performed in January of 2010, six months after the failed August, 2009 test. This test was a re-run of in-building RF Coverage/voice quality (DAQ) testing that was attempted in July of 2009 but did not pass (outdoor testing passed). According to Harris, the re-run confirmed

[8] **ITIL®** is the International Technology Infrastructure Library standards and guidelines for technology service management support.

that in-building coverage met or exceeded minimum contract requirements (for 12dB buildings).

Subsequent to this test, WPB contracted with an independent radio engineering firm, RCC Consultants, Inc. to observe another test of OpenSky. Conducted on February 17th and 18th, 2011, this was another RF Coverage/voice quality (DAQ) testing procedure. Signal strength measurements were taken by three teams in 156 grids throughout WPB. Voice checks were also performed with dispatch and test results were collected by both field and dispatch teams using the Harris equipment. This test was conducted after the new cell tower was added near Ibis for western WPB.

The test results showed that 151 out of 156 grids (96.79%) passed, exceeding the contract requirements of 95%. In reporting their overall results the RCC report stated:

> "*Overall, the coverage testing results were subjectively very good in terms of the satisfaction of the Police officers participating in the testing"* In the conclusion to their report RCC stated, "*RCC Consultants, Inc. believes that overall, based on this limited test, West Palm Beach, Florida's OpenSky outdoor coverage is excellent with clear voice quality both in the field and at PSAP* [dispatch]*"*. The RCC report also makes this statement, *"Please note that in the last part of the testing, the three crews were checking the most challenging structures and the most challenging areas within those structures...Overwhelmingly, the majority of these locations passed the tests and the overall results exceeded expectations".*

The RCC test results appear to provide some credible evidence that with the improvements that have been made, OpenSky performed significantly better in WPB than the July 2009 test results indicated and met the contract requirements. However, in placing reliance on the RCC test it is important to point out the limitations of the test performed as well as other results presented in the RCC report. In describing the testing methodology, RCC provided the following statement which summed up the limitations of this test.

> "*It must be noted that the testing applied in this case was not a repeat of the rigorous testing performed by the vendor in the past. The test that RCC observed represented a retest of a small citywide sample as a simplified verification of those previous coverage tests. Rigorous acceptance testing of a complex and advanced system requires specialized tools, more structured approach and more time."*

While RCC's overall conclusion was that the vendor passed this test, their report included a section that discussed what they labeled as "trouble spots". They listed thirteen buildings and/or specific locations within buildings where there were heavy RF penetration losses exceeding 12dB. The list included three hospitals, the basement of the Police Station and a high school. RCC stated that this list represents only those buildings that were tested. This would seem to indicate that a full test might identify additional buildings with RF penetration losses exceeding 12dB. In their report, RCC

noted the Palm Beach County Fire Code[9] requires the owner's of buildings that fail the RF penetration test install bi-directional amplifiers (BDA) to resolve the signal strength problem.

Based on all the test results we have reviewed, we have two conclusions regarding the operability of OpenSky in WPB. First, a more rigorous test of the current OpenSky configuration is needed in WPB to validate the results of the more limited test that RCC observed. At a minimum this would need to include a test of signal strength (RF coverage testing), voice quality (DAQ) and system reliability (14 day Reliability Test). Second, in order for OpenSky to meet the needs of WPB and mitigate officer and public safety concerns, the system will have to perform better than current contract requirements. Performance only meeting current contract specifications, specifically penetration of buildings up to a loss factor of 12dB, would leave a number of buildings with no radio coverage as noted in the RCC test. Also, Harris in their July 2010 report to WPB that evaluated acceptance testing, invited WPB to work with them to identify areas requiring additional in-building penetration, an acknowledgement that the current contract requirement for 12dB penetration is not sufficient for WPB.

Subsequent to the RCC test, the MPSCC and the WPB police department staff developed a new OpenSky implementation plan *(Figure 2).* The implementation was scheduled to begin on May 1, 2011 and be completed on September 1, 2011. However, because of the issues and concerns that had been raised by WPB, the plan was never implemented.

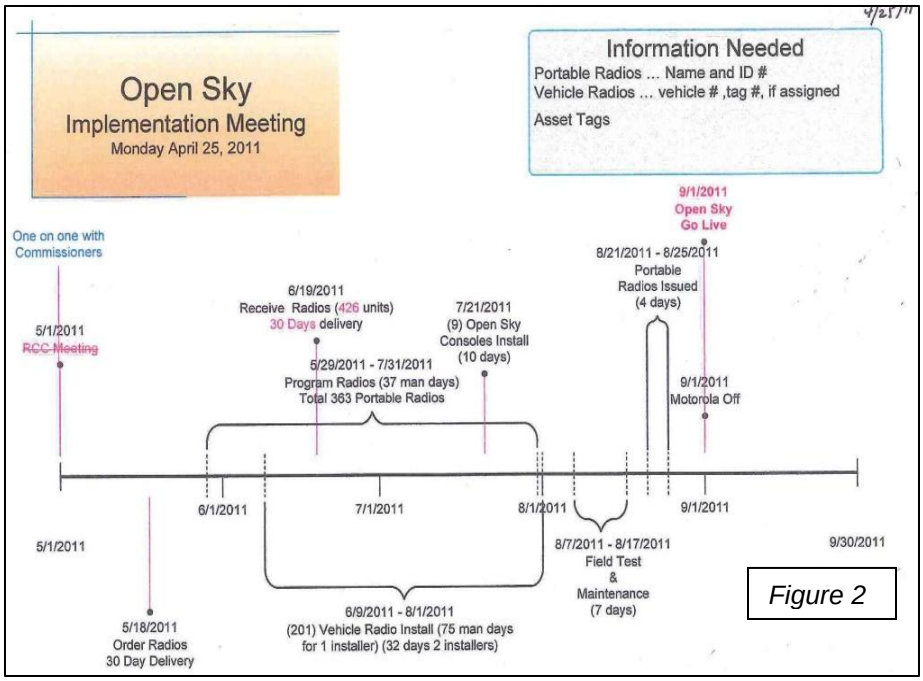


Figure 2

We were provided documentation from the MPSCC regarding a solution Harris had proposed for WPB that would require installation of two additional transmission sites. The estimated cost for this is $440,000. We are also aware that Harris has been discussing with WPB another option to provide WPB with a Harris P-25^{IP} digital radio system. We have not seen the cost estimate on that proposal. However, it is not clear whether acquiring a separate Harris P-25^{IP} system without also addressing the need for more signal strength by installing additional transmission sites will provide WPB with an adequate solution. The MPSCC and WPB

[9] Palm Beach County Local Amendments to the Florida Fire Prevention Code, 2008 Edition: (10.23) In all new and existing buildings and structures, minimum radio signal strength of –102.0 dBm (1.78 micro volts) in the frequency band of 806-824 / 851-869 MHz shall be maintained. Where this signal strength cannot be achieved, an 800 MHz bi-directional amplified system shall be installed to meet minimum radio signal strength required for effective emergency communications

need to work together to ensure that any option involving OpenSky or another Harris product would meet the needs of both the MPSCC and WPB.

Recommendations:

12) Before deciding whether to proceed with deploying OpenSky in WPB, the MPSCC and WPB need to perform a full DAQ test with sufficient test points to identify all buildings that have a loss fact greater than 12dB and determine what level of signal strength is needed to penetrate those denser buildings.

13) If the MPSCC and WPB decide to move forward with OpenSky or another Harris system, a separate contract with Harris should be executed that includes specifications that meet WPB's more challenging infrastructure. The contract should also provide adequate protections for the MPSCC and WPB if system performance does not meet contract specifications.

Management Response: MPSCC

12) West Palm Beach should perform a full DAQ test as suggested by the Inspector General.

13) Should the City of West Palm Beach move forward with OpenSky or another Harris system an amendment to the Interlocal agreement must be completed with the MPSCC and a contract executed with Harris.

Management Response: WPB

12) We concur.

13) We concur.

OIG Comment

Specific actions needed to address these recommendations will be contingent upon decisions made by WPB and/or the MPSCC on whether to deploy OpenSky or pursue an alternative solution. We will follow up on any actions needed to address these recommendations once that decision has been made.

Finding (13): GOING FORWARD THE CITY OF WEST PALM BEACH CAN CHOOSE AMONG SEVERAL OPTIONS FOR A PUBLIC SAFETY RADIO SYSTEM

The city of West Palm Beach has a number of options for meeting their public safety radio needs. As part of our review we did an analysis of four options that could be implemented without a lengthy system development and acquisition process. Our analysis included an estimated five year cost for each option. However, as we discuss, the two County options have potential future costs that cannot be fully identified without a test of current system coverage. The four options include:

1. Joining the County's Motorola SmartZone 3.0 as a Direct Connect customer,
2. Joining the County's Motorola SmartZone 3.0 as a Hub Connect customer,
3. Continuing on WPB's current Motorola SmartNet system, or
4. Remaining with MPSCC on the OpenSky system.

Financial data related to the first two options was based on a presentation made by Palm Beach County's Facilities Development and Operations Department to the West Palm Beach City Commission. The comparison of these four options was based on the following assumptions:

(1) 557 radios in total for WPB Police Department;
(2) 18 talk groups, SmartX and MTC Controller used for the County's Hub Connection option;
(3) 9 frequencies transferred to the County for the County's Direct Connect Option;
(4) 7 dispatch consoles used for either the County's Direct Connect or Hub Connect; and
(5) County's current resolution (R-2002-0192) for $12.50 reimbursement.

We did not include WPB's current investment of over $5.1 million in OpenSky in our five year cost analysis since this is a sunk cost and could not be recovered under any of the options. The following is a brief discussion of each of these options:

Motorola Direct Connect: Five Year Gross Cost $2,706,268

Under this option, WPB would continue to operate an analog radio system. However their five year gross cost could be reduced by as much as $1,170,000 from a County "frequency credit" if they transferred all 9 of their frequencies to the County. WPB could also offset up to another $464,986 in five year costs if they received their full share of $12.50 money under the current County resolution. The "frequency credit" and $12.50 offset would result in a five year net cost of $1,071,282, which would make this the least costly of the four options based on known costs.

However, this option could result in additional future costs. The County will eventually convert to a digital radio system and at that time WPB would need to upgrade or replace their current Motorola radios. Based on information provided to us by WPB radio support staff, sufficient radio inventory exists that can be upgraded to P-25 standards and this would cost approximately $120,000. The County's timeline for converting the County analog system to a digital radio system has not been firmly established. However, the County stated that the current

renewal/replacement purchase for their aging Motorola backbone equipment would allow them to operate as an analog system for six to eight more years.

This option could result in other infrastructure costs. The level of RF signal strength coverage the County system could provide to WPB as their public safety radio system provider has never been fully tested. Considering RF signal strength and building penetration issues already identified in WPB by RCC in the DAQ test of OpenSky, an indoor and outdoor full DAQ test of the County system in WPB would need to be performed. If additional RF signal strength is needed, WPB would incur additional infrastructure costs which could include antenna changes and/or required in-building BDA's. However, those costs are unknown until a full city-wide DAQ test is performed.

Motorola Hub Connect: Five Year Gross Cost $4,437,006

Under this option, WPB would continue to operate an analog radio system. The County HUB Connection is the most costly option over the next five years. The five year gross cost less the "12.50 offset" of $464,986 would be a five year net cost of $3,972,020. Like the County Direct Connect option, there would be additional future costs of approximately $120,000 to upgrade their current Motorola radios to the P25 digital standard once the County converts to a digital radio system. Also, the eventual conversion to a digital radio system could involve additional infrastructure for WPB to ensure adequate RF coverage for transmission of a digital signal. Without performing the required full DAQ testing, those costs cannot not be reliably determined.

Current Motorola SmartNet System: Five Year Gross Cost $3,207,915

Under WPB's current Motorola analog 800 MHz SmartNet radio system, WPB spends approximately $641,583 every year for maintenance/operations. Their five year gross cost less the "12.50 offset" of $464,986 would be a five year net cost of $2,742,929. However, Motorola no longer provides the maintenance service since the system has reached the end of its life cycle. Over time, maintenance and support could become more difficult and more costly. In their September 2010 internal report on OpenSky, the WPB Technical Team that supports the SmartNet system indicated that at that time, they had three years of spare parts to maintain their current system at existing levels. Based on this, staying with the Current Motorola SmartNet system is not a viable option beyond 2013 and could put WPB public safety radio communications at risk if hardware failures occur that cannot be immediately fixed.

OpenSky: Five Year Gross Cost $2,879,082

Under this option WPB would convert to a digital radio system. Two one-time costs comprise over 70% of OpenSky's five year gross costs. This includes the additional costs to purchase the remaining 419 Harris radios needed, at a cost of $1,672,805. The other one-time cost is the estimated $440,000 needed to install two additional transmission sites to address in-building RF penetration issues identified in WPB. The remainder of WPB's five year gross cost for OpenSky consists of annual dues to the MPSCC currently budgeted at just over $153,000 per year.

Under the current County resolution R-2002-0192, WPB's costs for OpenSky would not be eligible for $12.50 offset. Therefore, the five year net cost would remain at $2,879,082. However, we are aware that based on the Palm Beach County Board of County Commissioners workshop held on August 21, 2012, County Administration is preparing a proposed County resolution that would allow municipalities on the OpenSky system to receive reimbursement for eligible expenses equivalent to their share of $12.50 money. If this resolution passes, WPB could receive up to the same $464,986 offset that we factored into the other three options. This would result in a five year net cost of $2,414,096. Also, since our estimate includes the cost to purchase the additional Harris digital radios as well as additional infrastructure to address in-building RF penetration, there are no other unknown future costs to consider with this option.

As discussed earlier in this report, it is our understanding WPB is also in discussions with Harris Corporation for a fifth option that would include purchasing the Harris P-25^{IP} digital public safety radio system. We have not seen a cost estimate for this option.

Recommendations:

14) WPB should carefully consider each of their options. To assist in making the best decision, WPB should consider using an independent radio system consultant to thoroughly evaluate the City's needs, including their unique and more challenging infrastructure needs.

15) WPB should have their radio Technical Team assess the timeframe left for replacing their current aging system so that can be factored into any decision on moving forward with any of their available options.

Management Response: MPSCC

14) West Palm Beach has hired a consultant to evaluate their options.

15) MPSCC concurs.

Management Response: WPB

14) We concur. An independent consultant was hired in September 2012.

15) We concur.

Management Response: Palm Beach County

14) &15) The County agrees with Recommendations 14 and 15 but disagrees with some of the direct statements made/financial and technical conclusions drawn and/or implied by the findings leading up to those recommendations.

FUTURE PLANS FOR MAINTENANCE AND SUPPORT OF OPENSKY

Finding (14): PLANS FOR SYSTEM SUPPORT, MAINTENANCE AND FUTURE PLATFORM MIGRATION ARE BEING ADDRESSED BY THE MPSCC

Support and Maintenance

The contract with M/A-COM (Harris) for the purchase of the OpenSky public safety radio system includes language that requires Harris to provide, "full availability of all parts, components or comparable parts and service for a period of seven (7) years on all Seller manufactured infrastructure equipment and for five (5) years on all subscriber equipment from the last date of manufacture."[10]

A system management agreement is in place between the MPSCC and Citation Communications which includes provision of services such as:

- Monitor and troubleshoots radio, microwave, and other wireless communications devices.
- Providing input to determine communication network hardware and software equipment needs including installation of equipment.
- Maintaining backup and restores capabilities of all communications, security, and software files including policies, and security for the communications network.
- Testing and evaluates new telecommunications hardware and software.
- Maintaining inventory of communications computer hardware and components.
- Maintaining a system for evaluation and reporting communications network performance, usage and twenty-four hour emergency contacts.
- Maintaining database of FCC licenses and providing assistance with FCC license issues.
- Annual radio site inspections and testing.
- Developing and maintaining a database of all radios used on the system.

Migration

On August 2, 2010 Harris Corporation announced the next generation of the OpenSky radio system, OpenSky2. OpenSky2 utilizes the same radios, dispatch consoles, and backbone equipment utilized with existing OpenSky systems. The OpenSky2 system "incorporates significant technical and service advancements into the OpenSky platform."

In keeping with the technical changes in public safety radio communications, the MPSCC plans to migrate the current OpenSky system to the newer OpenSky2 platform.

[10] Citation Communications has stated that the existing OpenSky Harris P7300 radios and the C3 Maestro dispatch consoles being utilized in the system are currently being manufactured by Harris Corporation.

Funding Future System Replacement

As of September 30, 2011, the MPSCC has $448,821 in its business reserve bank account. The account was established in June 2006. From our review of the financial records, we noted the account is essentially the MPSCC's savings account and together with a separate checking account has been used to deposit revenue and cover expenses. It has not been established as a separate restricted reserve account for funding future system replacement. Also, the reserve amount is not based on any analysis of the future cost to replace OpenSky at the end of its useful life. As such, the account may not have an adequate balance to fund the eventual system replacement.

Recommendations:

16) The MPSCC should begin planning for system replacement and consider collecting additional funds from members to establish a separate reserve account to adequately fund future system replacement costs.

Management Responses: MPSCC

16) Within the next year the MPSCC will develop a program to sufficiently address the recommendation suggested by the Office of Inspector General.

ADMINISTRATIVE AND ACCOUNTING PROCEDURES AND CONTROLS

Since MPSCC's inception, it has received funding of $7.1 million from various sources: grants, loans, membership dues, project implementation funds, deposits, and interest revenue. Identified funding from FY 2002 to December 2005 (before the contract was executed with M/A-COM) was $711,091 and expenditures were $75,395. From January 2006 to the end of fiscal year 2011, MPSCC received $6.43 million and spent $6.08 million. The available balance as of September 30, 2011 was $670,761.

As part of our review, we tested expenditures totaling $5.1 million to verify funds were properly spent and accounted for. Our sample did not identify any improper expenditures.

However, in performing the audit work, we noted that certain MPSCC's accounting and administrative procedures and processes were not well developed. The MPSCC has no full-time salaried staff, and accounting was performed as a collateral duty by police department personnel from member municipalities. Prior to 2006 accounting duties were performed by the former Chief of Police of Boynton Beach and since January 2006 by the Special Projects/Telecommunications Officer and the Fiscal Coordinator, Palm Beach Gardens Police Department. Various administrative duties have also been carried out by municipal staff as well as one of MPSCC's contractors. We question whether the current MPSCC staffing arrangement is sustainable and we have specific recommendations to address this in discussing the following findings related to accounting and administrative weaknesses.

Finding (15): MPSCC LACKS A FORMAL ACCOUNTING SYSTEM AND SINCE INCEPTION HAS NOT HAD COMPLETE AND AUDITED FINANCIAL STATEMENTS

During the past ten years, MPSCC has received millions of dollars from its members, from Federal grants, and from loans. In order to account for all the revenue and expenditure transactions, we obtained the bank statements from 2006 to 2011 and the detailed transaction records from MPSCC. We were unable to obtain any bank statements prior to January 2006. Since there was no chart of accounts or account codes, the transaction records were prepared using Microsoft Excel by a PBG's Police Department Fiscal Coordinator, and no general ledger and sub-ledgers were prepared. As a result, we were unable to trace activities that occurred prior to January 2006 to bank statements.

We also noted that MPSCC has not prepared financial statements on an accrual basis from FY 2000 to FY 2011 that could then be audited by an independent auditor. According to the MPSCC's Inter-local Agreement Section 8.K, which was signed in December 1999, an annual audit of financial records should be conducted by an outside auditing firm at the end of each fiscal year. However, the governing board had not arranged any annual audits even though the consortium members had agreed to require it.

Without a more formal accounting system and without any part time or full time salaried staff with the appropriate accounting expertise, the MPSCC could find it a challenge to prepare complete and accurate financial statements that could then be audited. The only financial statement schedules we found are in the MPSCC's informational tax returns prepared by Caler, Donten, Levine et al, P.A. which contain a Statement of Revenue, Expenses and Changes In Net Assets or Fund Balances and Balance Sheet prepared on the cash basis of accounting. As a non-profit government corporation the MPSCC's annual financial statements would need to be prepared on an accrual basis.

The MPSCC has already taken action to address a number of these accounting issues. We were notified by MPSCC's Executive Director that the annual audit had been budgeted for FY 2013 and an external auditor will be hired to perform the MPSCC's annual financial audit. MPSCC also intends to hire accounting personnel to maintain financial records and prepare the financial statements on an accrual basis.

Recommendations:

17) We recommend that MPSCC arrange for an annual financial audit. The annual audit is an essential component to show MPSCC's accountability for contributions and expenditures according to the mission of the organization. The annual audit should be conducted by an independent audit firm and audit fees should be budgeted accordingly.

18) The Board of Directors should also consider hiring professional accounting personnel or a competent third-party to manage MPSCC's accounting activities and prepare the annual financial statements. Structured and timely accounting should be established for the long-run to handle the substantial funds from/to various sources.

Management Responses: MPSCC

17) The current budget (2012/2013) established by the MPSCC contains funding for such an audit to be conducted.

18) Currently a scope of work is being developed, after which, through a proper procurement bid, personnel will be hired based on the job description and scope of work developed. Projected timeline is 120 to 180 days.

Finding (16): MPSCC LACKED CERTAIN KEY FINANCIAL CONTROL POLICIES AND PROCEDURES

During our review of MPSCC's internal control policies and procedures, we noted that the MPSCC only had purchasing guidelines & accounts payable procedures, and a cost allocation & revenue policy.

No annual budget policy: We noted that there was no budget policy and no budget-to-actual comparison had ever been made at the end of each fiscal year. Therefore, the actual expenditures exceeded the budgeted amount for three consecutive fiscal years - 2008, 2009, and 2010. When the actual expenditures exceeded the budgeted amount, the reserve fund was applied without formal approval.

Since there was no budget policy, each line item on the annual budget was not clearly defined as to purpose and use. For example, one of the budget line items "Harris software license" included upgrades not only for software but also for hardware (radios, consoles, and infrastructure equipment).

During our review of MPSCC's financial records, we noted that the MPSCC spent a total of $101,738 ($31,200 in federal grant money and $70,538 in municipality contributions) from FY 2003 to FY 2011 for legal services. The actual charges for attorney services were $28,352 for FY 2006 and $24,187 for FY 2011 while the budgeted amount was $10,000 for FY 2006 and $15,000 for FY 2011, resulting in an unapproved variance of $27,539.

Lack of procedures for tracking fixed asset: We noted that the fixed assets did not have any tags in place and there was no tracking system for the location of the fixed assets. However, the security around the fixed assets which remained with the MPSCC appeared adequate.

No travel and reimbursement policy: In the early years of the MPSCC, members traveled out-of-state for project training and meetings. It was our understanding that a

related travel policy or expenditure reimbursement policy related to members' travel did not exist.

No document retention policy: We noted that a majority of documents of the MPSCC dated from FY 2000 to FY 2005 were stored with the Criminal Justice Commission. However, the documents were not archived in an organized manner. From FY 2006 and on, MPSCC began to retain its own documents in appropriate categories. However, no document retention policy has been established.

Instance of a lack of segregation of duties: During the invoice-payment process, the Fiscal Coordinator performed two duties for the MPSCC - recording the transactions and verifying the delivery of goods.

After bringing these matters to their attention MPSCC has begun taking action to correct these weaknesses. Actions being taken include:

1. MPSCC planned to keep more than minimum required amount in a reserve account and a chart of accounts will be established;
2. MPSCC will set up a monthly tracking form for all of the line-item accounts and the Board of Directors will review it at the MPSCC's monthly Board meeting. This will minimize the chance of over-spending.
3. MPSCC will establish separate budget line items for software upgrade and hardware (radios, consoles & infrastructure equipment) upgrades;
4. For all other policies and procedures mentioned above, MPSCC started to establish them accordingly. For example, MPSCC began building a database for the fixed assets and was waiting for asset tag orders. The database will list the entire infrastructure owned by MPSCC.

Recommendations:

19) There should be a Board agreement/policy concerning budget and budget-to-actual reviews, and the purpose and the use of operating reserves. This policy should define and set goals for reserve funds, describe authorization for use of reserves and outline requirements for reporting and monitoring.

20) The MPSCC needs to establish a policy for fixed assets including the use of fixed asset tags.

21) MPSCC needs to establish travel policies including types and amounts of allowable expenses.

22) MPSCC should establish a document retention policy.

23) The organization should have policies established for segregation of duties of key transactions. The person who records the transactions should not be the person who also verifies the delivery of goods. The duties of authorization, recording, custody and reconciliation should be segregated.

24) The MPSCC should consider hiring administrative staff to ensure that all of the additional policies, procedures and processes that need to be put in place get timely established and are consistently maintained and carried out going forward.

Management Response: MPSCC

19) The board will develop a policy documenting procedures for the above recommendation within the next 120 days.

20) The board will develop a policy documenting procedures for the above recommendation within the next 120 days. The MPSCC, at the suggestion of Inspector General, already started the fixed asset tagging process and will be completed within the next 90 days.

21) Policy will be established within the next 90 days.

22) Policy will be established within the next 90 days.

23) The formal policy will be developed within the next 120 days; however implementation of that policy is currently being utilized to achieve the best segregation of duties possible.

24) As mentioned in recommendation 18, we are currently preparing the scope of work (under development).

Finding (17): THE MPSCC DID NOT ALWAYS COMPLY WITH EXISTING ACCOUNTS PAYABLE AND PURCHASING PROCEDURES

We selected a sample of ninety expenditures to test the accounts payable procedures. Seventy-four expenditures (82.% of the testing population) complied with the accounts payable procedures. However, sixteen payments (18%) did not comply. Five payments totaling $32,656 showed only one signature on each check to authorize the payment, while the MPSCC's accounts payable procedures required two authorized signatures. The remaining eleven payments totaling $55,647 were each over $2,500 and per accounts payable procedures, required Board approval. Those were necessary expenditures. However, we were unable to obtain any supporting documents showing Board approval.

We also found that the MPSCC tax preparer was recommended directly by MPSCC personnel and their services were purchased without first obtaining three quotes. Per MPSCC's Procurement policy, expenditures under $10,000 require three quotes. From 2005 to 2010 the tax preparer fees ranged from $715 to $1,775 per year.

Recommendations:

25) The governing board of MPSCC should ensure that all the activities are in compliance with internal control standards.

Management Response: MPSCC

25) The MPSCC agrees. Quarterly meetings are already being planned and will be established for compliance review, within the next 90 days.

ACHIEVING THE GOAL OF INTEROPERABLE COUNTYWIDE RADIO COMMUNICATION

Finding (18): THERE IS A NEED TO REESTABLISH A COUNTYWIDE PUBLIC SAFETY RADIO COMMUNICATIONS COMMITTEE

Going back to the early 1990's the County and its various law enforcement entities recognized that with the number of separate law enforcement/public safety agencies operating in the county and with many having their own communications systems, they were unable to effectively communicate with each other. A number of efforts were undertaken to begin to address this situation. However, in 1994, after extensive research, the County Communications Committee advised that state of the art technology was not sufficient to provide a large enough network to accommodate the needs of the County and the needs of the municipalities, other than on an emergency basis only. All parties were disappointed, frustrated and concerned. Extensive friction existed among the cities and the county entities. The Criminal Justice Commission resolved this dissension by establishing the Countywide Public Safety Communications Committee (CPSCC). The purpose of the CPSCC was to focus on law enforcement and public safety communication planning for municipalities throughout the county.

Several years later, in 1999 the County established, through a County resolution, the Communications and Systems Operations Policy Advisory Committee (CSOPAC). CSOPAC's mission was to develop a countywide technical, operational and financial plan for implementation of an interoperable communications system for both public safety and general government agencies. CSOPAC membership included both County, municipal and other public safety agency officials. It was provisioned to sunset in two years.

The CPSCC evolved into the MPSCC which went on to acquire, implement and manage the M/A-COM (Harris) OpenSky system. The CSOPAC sunset in 2001 and the during that time the County went on to acquire, implement and manage the Countywide 800 MHz Motorola SmartZone system.

OpenSky while serving far fewer municipalities than originally envisioned still represents a significant investment of both time and money in establishing an interoperable municipal public safety radio communication system. With the Palm Beach County School District Police currently implementing OpenSky, the system will have a more

extensive countywide footprint. Also, the MPSCC recently received approval from the Florida Department of Management Services for OpenSky's Phase 2 configuration as meeting the minimum requirements of the State Law Enforcement Communication Plan.

Considering that five municipalities are currently operating on OpenSky, the Palm Beach County School District police are implementing OpenSky, and Palm Beach County is moving toward a major upgrade of the County's Motorola system; it may be appropriate to reestablish a committee like the CPSCC or CSOPAC. Such a committee could help ensure more cohesive planning and coordination that achieves appropriate levels of interoperability, while providing the various public safety entities flexibility in choosing among systems and technologies available now and in the future.

Recommendations:

26) Establish a countywide public safety radio communications committee to ensure coordination and compatibility between all organizations involved in implementation, support, and/or use of public safety radios.

Management Response: MPSCC

26) The MPSCC believes that previously established committees, that have since been disbanded, allowed for dialogue and views for public safety communications to at least be shared for discussion and for familiarization of other systems. Hopefully a new committee can be formed so that proposed radio planning and philosophies for the future can be shared. We wholeheartedly support the development of this committee.

Management Response: Palm Beach County

26) There are several existing operational planning committees already in place which have, in whole or in part, overlapping memberships and/or communications system missions. The establishment of an additional planning committee will dilute the existing committees' attendance/success.

However, information sharing is warranted so that each entity can plan its future. To that end, the County would agree to schedule, host and staff an annual Public Safety Radio System Communications Information Sharing Workshop with the administrator, police chief and fire chief from each agency being invited to attend.

QUESTIONED COST

Questioned Cost: $253,863

ATTACHMENTS

Attachment 1 – West Palm Beach Management Response
Attachment 2 – Palm Beach County Management Response
Attachment 3 – MPSCC Management Response

ACKNOWLEDGEMENT

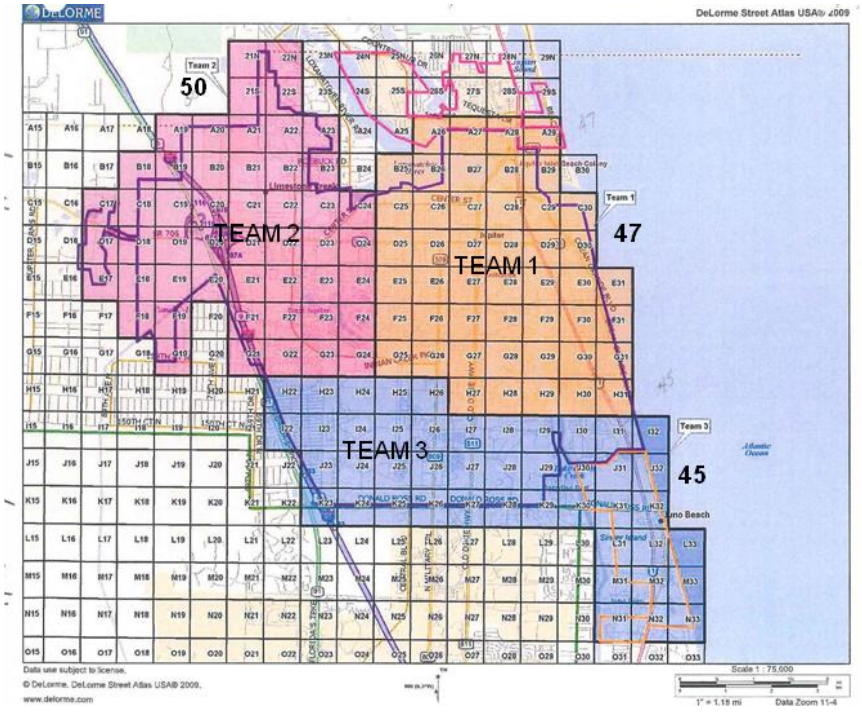
The OIG would like to extend our appreciation to the management and staff of the various entities we engaged with for the cooperation and courtesies extended to us on this audit. This includes MPSCC officials, City Managers, Police Chiefs and staff of the MPSCC member municipalities, Palm Beach County Facilities Development & Operations Department, and the Criminal Justice Commission. We would also like to thank the police officers of Palm Beach, Palm Beach Gardens and Atlantis for their participation in our officer survey of OpenSky.. This report is available on the OIG website at: http://www.pbcgov.com/OIG. Project conducted by John Lynch, Auditor II, Elle Walrond, Auditor I, Alan Russell, Contract Oversight Specialist II and Dennis Yeskey, Contract Oversight Specialist II under the supervision of Dennis Schindel, Director of Auditing. Please address inquiries regarding this report to Dennis Schindel by email at inspector@pbcgov.org or by telephone at (561) 233-2350.

APPENDIX 1 - Jupiter/Juno Beach DAQ Test

The first test day, April 19, 2012, was focused on testing radio voice quality outdoors and the second day and third days were focused on indoor testing. A Delivered Audio Quality (DAQ) score of 3.4 or above was required for passing the test. Four personnel from Office of Inspector General (OIG) audit team observed the three-day radio testing.

Delivered Audio Quality	Subjective Performance Description
DAQ 5.0	Speech easily understood.
DAQ 4.5	Speech easily understood. Infrequent Noise/Distortion.
DAQ 4.0	Speech easily understood. Occasional Noise/Distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.
DAQ 2.0	Understandable with considerable effort. Frequent repetition due to Noise/Distortion.
DAQ 1.0	Unusable, speech present but unreadable.

According to the testing map grids, participants were divided into three teams. Team 1 was in charge of the orange grids, team 2 the pink grids and team 3 blue grids. Each team included three persons- one officer from Jupiter Police Department, one person from Citation Communications and one auditor from OIG audit team. One OIG auditor was stationed each day at the Palm Beach Gardens Police Department Dispatch Center. OIG team alternated daily to a different team and the Dispatch Center for observation. A total of 142 grids were tested. We observed the following results:



Outdoor Test (April 19th)

During the outdoor testing, the team would pass through each grid. The voice quality test was conducted at a randomly selected location along the driver route within each grid using the portable radio. Team members would exit the vehicle, call dispatch and record the clarity of the call, DAQ 1.0 to 5.0. We observed the calls which had clear and intelligible communication.

APPENDIX 1 (Continued)

Indoor Test (April 20th, 23rd)
During in-building testing, test calls were placed from the portable radio to the dispatcher from locations within a building. If a building failed the voice quality test at any location, then additional tests were made at other locations within the building to determine if the loss characteristics of failed test locations exceed MPSCC's specified 12dB. Testing was completed in apartment buildings, homes, schools, a medical center, banks, various stores, restaurants and bars.

A few locations exhibited failed loss characteristics:

- Beacon Cove elementary school lobby area;
- Two bank locations within the safety deposit area (Predicted dead spots exceeded 12dB),
- A Condominium in Jupiter, 300 Ocean Trail (Parking garage only exceeded 12dB),
- A Condominium in Jupiter, 176 Helios Drive (East stairwell exceeded 12dB),
- Juno Beach Resort (Second floor west stairwell exceeded 12dB),
- Jupiter Medical Center first floor beside elevator (This location exceeded 12dB);
- The Bear's Club inside one of the townhomes (The Bear's Club communications was determined to be an antenna adjustment issue),
- Wal-Mart – the center of store (one location exceeded 12dB);
- A Condominium in Juno Beach.

In the Acceptance Test Procedures for indoor DAQ, the 95% "reliability acceptance criteria" only includes locations (test points) that are within the 12dB requirements of the contract specifications. Test Points that exceed the contracted 12dB penetration requirement and score less than 3.4 are "discarded" and not included in the calculation of reliability acceptance. Therefore, it should be noted that the acceptance rate calculation for the indoor DAQ test does not include the discarded failed test points. Outdoor DAQ tests include all test points.

Dispatch
We also observed the communication at the Palm Beach Gardens Police Department Dispatch Center. We heard clear and intelligible communication except on the above listed areas. The Palm Beach Gardens dispatcher provided us with a excel spreadsheet for the three days of testing. Each row of the spreadsheet contains the Team Number, Grid Number, Address (or location description), and a "pass or fail" indicator for each test point

APPENDIX 2 - Survey Questioneer

OpenSky Radio System Survey

Code A

SECTION ONE:

KEY for Answering: Circle your answer and if needed, add a comment.

SA - Strongly Agree
A - Agree
D - Disagree
SD - Strongly Disagree

1. The new digital radio system is an improvement over the (old) legacy system.

SA - A - D - SD Optional Comment: _____

2. The radio works properly over 95% of the time.

SA - A - D - SD Optional Comment: _____

3. The radio system problems that I report are resolved in a timely manner.

SA - A - D - SD Optional Comment: _____

4. There are radio problems that I encounter that are serious enough to adversely impact officer or citizen safety.

SA - A - D - SD Optional Comment: _____

5. Training has provided me with sufficient expertise to best utilize the new radio equipment.

SA - A - D - SD Optional Comment: _____

6. This new system requires me to carry a second communications device in order to be assured that I will have communications at all times.

SA - A - D - SD Optional Comment: _____

7. This new system has the "interoperability" that allows me to have radio communications with other public safety departments outside of my municipality that are not on OpenSky.

SA - A - D - SD Optional Comment: _____

8. This new system is a total failure.

SA - A - D - SD Optional Comment: _____

Survey V9 Page 1 of 2

APPENDIX 2 (Continued)

OpenSky Radio System Survey

Code A

SECTION TWO:

KEY for Answering: Check all that apply.

1. What kind of problems has your radio equipment experienced, how often and where?

Kind / How Often / Where

___ (a) Dropped calls / ___ Daily, ___Weekly, or ___Occasionally / ___Indoors ___Outdoors ___In Vehicle
___ (b) Audio quality / ___ Daily, ___Weekly, or ___Occasionally / ___Indoors ___Outdoors ___In Vehicle
___ (c) Mic Sensitivity / ___ Daily, ___Weekly, or ___Occasionally / ___Indoors ___Outdoors ___In Vehicle
___ (d) Dead spots / ___ Daily, ___Weekly, or ___Occasionally / ___Indoors ___Outdoors ___In Vehicle
___ (e) Other; _____
___ (f) None *(Kind of Problem, How Often, and Where)*

KEY for Answering: Check one and if needed, add a comment.

2. How long have you been using the new digital radio system?

___ (a) Less than one month
___ (b) More than one month
___ (c) More than three months
___ (d) More than six months

Optional Comment: _____

3. How would you rate the new digital Vehicle unit as compared to the (old) legacy system?

___ (a) Better
___ (b) Worse
___ (c) About the same

Optional Comment: _____

4. How would you rate the new digital Portable unit as compared to the (old) legacy system?

___ (a) Better
___ (b) Worse
___ (c) About the same

Optional Comment: _____

5. Are there any important feature(s) or functionality that you feel you have lost with the switch to the new digital system?

___ (a) No
___ (b) Yes If Yes, List/Describe lost feature(s): _____

SECTION THREE:

Add any comment(s) you think may be important in making the OpenSky project successful or any "show stopper" that can restrict OpenSky from being successful

_____

Survey V9 Page 2 of 2

APPENDIX 3 - Summary Survey Results

Score Sheet for OpenSky Radio System Survey

SURVEY COMBINED Total number of Forms : **165**

Section One:
Statements

	SA	A	D	SD	Σ	SA+A	D+SD	Statement:
1	32	73	41	12	158			*The new digital radio system is an improvement over the (old) legacy system.*
	20.3%	46.2%	25.9%	7.6%		66.5%	33.5%	
2	28	76	47	9	160			*The radio works properly over 95% of the time.*
	17.5%	47.5%	29.4%	5.6%		65.0%	35.0%	
3	25	71	31	14	141			*The radio system problems that I report are resolved in a timely manner.*
	17.7%	50.4%	22.0%	9.9%		68.1%	31.9%	
4	56	55	37	13	161			*There are radio problems that I encounter that are serious enough to adversely impact officer or citizen safety.*
	34.8%	34.2%	23.0%	8.1%		68.9%	31.1%	
5	28	98	26	8	160			*Training has provided me with sufficient expertise to best utilize the new radio equipment.*
	17.5%	61.3%	16.3%	5.0%		78.8%	21.3%	
6	35	51	46	27	159			*This new system requires me to carry a second communications device in order to be assured that I will have communications at all times.*
	22.0%	32.1%	28.9%	17.0%		54.1%	45.9%	
7	27	80	24	16	147			*This new system has the "interoperability" that allows me to have radio communications with other public safety departments outside of my municipality.*
	18.4%	54.4%	16.3%	10.9%		72.8%	27.2%	
8	3	14	82	56	155			*This new system is a total failure.*
	1.9%	9.0%	52.9%	36.1%		11.0%	89.0%	

Section Two:
Questions

1	Dropped Calls	Audio Quality	Mic Sensitivit	Dead Spots	Other	None	Σ	Question:
	60	90	35	118	11	12	326	*What kind of problems has your radio equipment experienced, how often and where?*
	18.4%	27.6%	10.7%	36.2%	3.4%	3.7%		
2	< One Month	> One Month	> Three Months	> Six Month				
	0	10	6	144			160	*How long have you been using the new digital radio system?*
	0.0%	6.3%	3.8%	90.0%				
3	Better	Worse	Same					
	75	25	48				148	*How would you rate the new digital Vehicle unit as compared to the (old) legacy system?*
	50.7%	16.9%	32.4%					
4	Better	Worse	Same					
	72	36	52				160	*How would you rate the new digital Portable unit as compared to the (old) legacy system?*
	45.0%	22.5%	32.5%					
5	No	Yes						
	120	36					156	*Are there any important feature(s) or functionality that you feel you have lost with the switch to the new digital system?*
	76.9%	23.1%						

Section Three:
This is a "Comment Only" section.

Excellent
Good
Poor
Bad
Info Only

ATTACHMENT 1 - Management Response West Palm Beach

The City of West Palm Beach

"The Capital City of the Palm Beaches"

Ed Mitchell
City Administrator
P.O. Box 3366
401 Clematis Street (33401)
West Palm Beach, FL 33402
Telephone: 561-822-1400
Fax: 561-822-1424
e-mail: emitchell@wpb.org

November 19, 2012

Dennis Schindel, Director of Audits
Office of Inspector General, Palm Beach County
P.O. Box 16568
West Palm Beach, Fl 33416

Dear Mr. Schindel,

Below is the City's response to your audit recommendations in the November 8, 2012 Draft Report on the Audit of the Municipal Public Safety Communications Consortium (MPSCC). These responses are to the recommendations that were specifically addressed to West Palm Beach.

Recommendation No. 3: WPB should work with the MPSCC to plan and schedule another System Reliability test utilizing the standard Harris equipment configuration.

Response: A proposal for P25 system was received by the City.

Recommendation No. 12: Before deciding whether to proceed with deploying Opensky in WPB, the MPSCC and WPB need to perform a full DAQ test with sufficient test points to identify all buildings that have a loss factor greater that 12db and determine what level of signal strength is needed to penetrate those denser buildings.

Response: We concur

Recommendation No. 13: If the MPSCC and WPB decide to move forward with Opensky or another Harris system, a separate contract with Harris should be executed that includes specifications that meet WPB's more challenging infrastructure. The contract should also provide adequate protections for the MPSCC and WPB if system performance does not meet contract specifications.

Response: We concur.

"An Equal Opportunity Employer"

ATTACHMENT 1 (Continued)

Recommendation No. 14: WPB should carefully consider each of their options. To assist in making the best decision, WPB should consider hiring an independent radio system consultant to thoroughly evaluate the City's needs, including their unique and more challenging infrastructure needs.

Response: We concur. An independent consultant was hired in September 2102.

Recommendation No. 15: WPB should have their radio Technical Team assess the timeframe left for replacing their current aging system so that can be factored into any decision on moving forward with any of their available options.

Response: We concur

Thank you for the opportunity to comment.

Sincerely,

Edmund Mitchell

Ed Mitchell, City Administrator

"An Equal Opportunity Employer"

ATTACHMENT 2- Management Response Palm Beach County

Facilities Development & Operations Department

2633 Vista Parkway
West Palm Beach, FL 33411

Telephone - (561) 233-0200
Facsimile - (561) 233-0206
www.pbcgov.com/fdo

November 27, 2012

To: Dennis Schindel, Director of Audit
Office of Inspector General

From: Audrey Wolf, Director
Facilities Development & Operations

Re: ***Draft Audit Report of OpenSky Public Safety Radio System***

The County has the following management responses to two (2) findings of the draft audit report.

Finding (13)

The County was asked by City Staff to prepare a summary of the options for the City of West Palm Beach to connect to the County system, costs associated with those options, along a history of the County's historical and current (then) position on $12.50 distributions. The County advised the City Staff that any summary would merely be a broad description of the options and a recitation of the County costs offered to other cities basically on a unit basis. Because of the lack of specific City system requirements, the numbers contained in that presentation could not be used directly for any financial conclusions. The County costs provided could only be applied AFTER a thorough technical analysis ending in a definitive set of systems requirements. Further, the presentation would only be a summary and not reflect the variances which exist among the County options, nor the impact of timing, both of which impact the financial conclusions.

The summary was prepared in the form of a power point presentation which was delivered to Staff for comment. The County never received any comments, nor was the presentation ever delivered by County or City Staff to the City Commission.

The County agrees with Recommendations 14 and 15 which conclude Finding 13, but disagrees with some of the direct statements made/financial and technical conclusions drawn and/or are implied by the findings leading up to those recommendations. The County would suggest that the recommendations be moved to another section and the finding deleted. Further, this finding does not seem to be within the stated scope/purpose of the audit.

ATTACHMENT 2 (Continues)

Finding (18)

Since the time that the CSOPAC sunset, the conclusions, policies and objectives have been re-affirmed multiple times including as recently as August 2012. As such, there is no basis or need for reconvening any type of CSOPAC-like committee. Further, there are several existing operational planning committees already in place which have, in whole or in part, overlapping memberships and/or communications system missions (ie: Chiefs of Police Association- Communications Sub-Committee, PSAP Committees, CSRCC - Law Enforcement User Group, CRSCC – Fire/Rescue EMS User Group, and CRSCC – Public Works User Group). The establishment of an additional planning committee will dilute the existing committees' attendance/success.

However, information sharing is warranted so that each entity can plan its future. To that end, the County would agree to schedule, host and Staff an annual Public Safety Radio System Communications Information Sharing Workshop with the administrator, police chief and fire chief from each agency being invited to attend. The workshop would bring together all agencies and provide the various existing operational committees and provide a single opportunity for others that may routinely participate in the operational committees to receive/discuss status and issues at a single meeting. At a minimum, the agenda would include:

1. Presentations by each agency operating a radio system regarding the current condition of its system, its funded initiatives, and planned future initiatives.
2. Presentations by each planning committee regarding new operational objectives and required system functionality to meet those goals.
3. Identification of follow-up action items for established committees.

While certainly #1 is important, the amount of preparation and open participation of the existing operational committees is key to making the workshop successful.

If you have any questions or would like to discuss further, please do not hesitate to call.

c: Robert Weisman, County Administrator
Nancy Albert, Director ESS
Mark Filla, ESS/Public Safety Radio System Administrator

ATTACHMENT 3 - Management Response MPSCC

MPSCC

Municipal Public Safety Communications Consortium
Of Palm Beach County, Inc.
A Florida Not-for-Profit Corporation
260 Orange Tree Drive
Atlantis, Florida 33462

Phone: (561) 965-1700 ♦ Fax: (561) 968-9443

Chairman
Robert G. Mangold

November 28, 2012

Dennis Schindel
Director of Audit
Office of the Inspector General
PO Box 16568
West Palm Beach, FL 33416

Dear Mr. Schindel,

The Municipal Public Safety Communications Consortium (MPSCC) is pleased to review and provide a response to the Inspector General's Office (IG) evaluation of the sourcing and implementation of the interoperable countywide public safety radio system. The members who are implemented of the MPSCC – Atlantis, Juno Beach, Jupiter, Palm Beach, Palm Beach Gardens, Jupiter Inlet Colony, and the School Board – are in general agreement with the report, and are pleased to read that the ultimate findings report a functional, interoperable system with good performance and validate that there were no improper expenditures.

The implemented consortium members agree with the IG's assessment that the MPSCC has accomplished the task of successfully installing a system that performs to contract specifications. The MPSCC is also pleased that the IG's report notes that the system test results to-date appear better than many other similar efforts around the country. Further, the MPSCC appreciates the acknowledgement that we worked well with each other, and with Harris, to address issues during implementation that ultimately yielded a positive result.

Several areas for improvement were proposed by the IG in the report related to the management of the consortium. The MPSCC welcomes the IG's suggestions for continuous improvement and is working toward solutions to many of the recommendations. In fact, in a separate evaluation, the MPSCC's own ad-hoc governance committee identified some of the same issues last summer.

Taking all points of feedback in the report as constructive, the members of the MPSCC appreciate the thorough evaluation summarized in the IG report. The members who have implemented the system stand ready to work together and with other agencies and

ATTACHMENT 3 (Continued)

municipalities toward an interoperable public safety radio system. It is the goal of the consortium to ensure that systems work across agencies seamlessly and safely, and that any technological upgrades or enhancements are implemented in a fiscally-responsible way.

Sincerely,

Members of the Municipal Public Safety Communications Consortium (MPSCC) implementing the Open Sky public safety radio system:

Mo Thornton, City Manager, City of Atlantis	Chief Robert G. Mangold, Chairman, MPSCC, City of Atlantis Police Department
Andrew D. Lukasik, Town Manager, Town of Jupiter	Chief Frank J. Kitzerow, Town of Jupiter Police Department
Joseph F. Lo Bello, Town Manager, Town of Juno Beach	Chief Brian Smith, Town of Juno Beach Police Department
Peter Elwell, Town Manager, Town of Palm Beach	Kirk W. Blouin, Director of Public Safety, Palm Beach Police Department
Ron Ferris, City Manager, City of Palm Beach Gardens	Chief Stephen J. Stepp, City of Palm Beach Gardens Police Department;
	Colonel Ernie Carr, Executive Director, MPSCC, Palm Beach Gardens Police Department

Sincerely,

Robert G. Mangold, Chairman
Municipal Public Safety Communications Consortium

Page **2** of **2**

ATTACHMENT 3 (Continued)

Office of Inspector General Recommendations

#1 The MPSCC should ensure that sufficient funding exists before proceeding with any procurement and especially before awarding a contract.

Response: The MPSCC will continue to provide the proper procurement practices by requiring funding to be established prior to purchase or contract for purchase.

#2 The MPSCC and West Palm Beach management should work together to determine whether OpenSky can provide the most cost effective solution for the WPB's non-public safety radio communication needs.

Response: The MPSCC acknowledges this recommendation, that every aspect of West Palm Beach's radio system needs both public safety and nonpublic safety be established and provide a comprehensive solution including cost.

#3 WPB should work with the MPSCC to plan and schedule another system reliability test utilizing standard Harris equipment configuration.

Response: A proposal for P25 system was received by the City of West Palm Beach.

#4 The MPSCC needs to ensure for future acquisitions or any expansion of the current OpenSky system, that all acceptance testing required by contract is completed and fully documented.

Response: The MPSCC will arrange for that testing in the future, either new or retesting, that a more extensive and comprehensive documentation approach be required by contract.

#5 For all future contracts the MPSCC should ensure contract terms and conditions are sufficient to adequately protect public funds.

Response: In the future, milestones in MPSCC contracts will provide for more extensive validation of functionality, both in the development of the milestone and in its essential value based on the dollar amount of the milestone payment.

#6 When contract deliverables are changed during the execution of a contract a contract amendment or change order must be issued and determination made whether the contract cost should be adjusted.

Response: The MPSCC agrees that change order forms be executed in the future and continue to take contract changes before the Board of Directors for discussion and approval.

#7 The MPSCC must ensure that they receive adequate supporting documentation of all contract deliverables before contract payments are made.

ATTACHMENT 3 (Continued)

Response: The MPSCC agrees with this recommendation.

#8 All MPSCC purchases made for additional OpenSky hardware and/or software should follow the terms of the contract with M/A-Com (Harris) and be purchased by contract change order.

Response: The MPSCC agrees with this recommendation.

#9 The MPSCC should establish a process to document and evaluate all failed indoor testing locations even those that exceed contract specifications to determine if they pose a significant officer and public safety risk that needs to be resolved. Officers should be periodically reminded to document report locations where radio communication failures occurred so that they can be recorded, mapped and evaluated to determine if additional fixes are needed.

Response: Separate and distinct documentation identifying structures that exceed contract specifications for building radio signal penetration in the future will be identified as part of the acceptance test planning (ATP) and made part of the testing protocol, to evaluate the density of the building and determine penetration values of that building for acceptable radio communications. Note, as a standard, buildings that are known to exceed the penetration value guaranteed by contract are not considered a failure of the contract, nor will be in the future, it will be documented for officer safety. Other solutions implemented for building coverage will be determined as necessary by the particular member agencies.

#10 The MPSCC needs to focus on identifying the cause(s) and resolving the three major problem areas identified by users in this survey as dead spots, audio quality, and dropped calls. Additional system testing may be needed in these three municipalities to determine if additional infrastructure is needed to improve coverage.

Response: This is a process that we regularly perform to maintain the integrity of the system. We regularly survey officers and solicit their input for any areas that they may identify with communication problems, have fixed those problems, and will continue to do so.

#11 The MPSCC needs to implement a formal incident resolution system (helpdesk) to address any concerns raised by the users of OpenSky. The system should follow a standard set of technical system guidelines (such as ITIL [8]) to document and resolve all incidents and/or problems. This system should include mapping of any reported coverage problems to determine if certain locations or structures are chronic problem areas that need to be corrected.

Response: Through the teamwork with individual municipalities developing in-house policies/procedures, to achieve this recommendation will be put into place within the next 120 days.

#12 Before deciding whether to proceed with deploying OpenSky in West Palm Beach, the MPSCC and WPB need to perform a full DAQ test with sufficient test points to identify all buildings that have a loss factor greater than 12 dB and determine what level of signal strength is needed to penetrate those denser buildings.

ATTACHMENT 3 (Continued)

Response: West Palm Beach should perform a full DAQ test as suggested by the Inspector General.

#13 If the MPSCC and West Palm Beach decide to move forward with OpenSky or another Harris system, a separate contract with Harris should be executed that includes specifications that meet WPB's more challenging infrastructure. The contract should also provide adequate protections for the MPSCC and West Palm Beach if system performance does not meet contract specifications.

Response: Should the City of West Palm Beach move forward with OpenSky or another Harris system an amendment to the Interlocal agreement must be completed with the MPSCC and a contract with Harris.

#14 West Palm Beach should carefully consider each of their options. To assist in making the best decision, WPB should consider hiring an independent radio systems consultant to thoroughly evaluate the city's needs, including their unique and more challenging infrastructure.

Response: West Palm Beach has hired a consultant to evaluate their options.

#15 West Palm Beach should have their radio Technical Team assess the timeframe left for the replacing their current aging system so that can be factored into any decision on moving forward with any of their available options.

Response: MPSCC concurs.

#16 The MPSCC should begin planning system replacement and consider collecting additional funds for members to establish a separate reserve account to adequately fund future system replacement cost.

Response: Within the next year the MPSCC will develop a program to sufficiently address the recommendation suggested by the Office of Inspector General

#17 We recommend that the MPSCC arrange for an annual financial audit. The annual audit is an essential component to show the MPSCC's accountability for contributions and expenditures according to the mission of the organization. The annual audit should be conducted by an independent audit firm and audit fees should be budgeted accordingly.

Response: The current budget (2012/2013) established by the MPSCC contains funding for such an audit to be conducted.

#18 The Board of Directors should also consider hiring professional accounting personnel or competent third-party to manage MPSCC's accounting activities and prepare the annual financial statements. Structured and timely accounting should be established for the long run to handle the substantial funds from/to various sources.

Response: Currently a scope of work is being developed, after which, through a proper procurement bid, personnel will be hired based on the job description and scope of work developed. Projected timeline is 120 to 180 days.

ATTACHMENT 3 (Continued)

#19 There should be a Board agreement/policy concerning budget and budget to actual reviews, and the purpose and the use of operating reserves. This policy should define and set goals for reserve funds, described authorization for use of reserves and outline requirements for reporting and monitoring.

Response: The board will develop a policy documenting procedures for the above recommendation within the next 120 days.

#20 The MPSCC needs to establish a policy for fixed assets including the use of fixed asset tags.

Response: The board will develop a policy documenting procedures for the above recommendation within the next 120 days. The MPSCC, at the suggestion of Inspector General, already started the fixed asset tagging process and will be completed within the next 90 days.

#21 The MPSCC needs to establish travel policies including types and amounts of allowable expenses.

Response: Policy will be established within the next 90 days.

#22 MPSCC should establish a document retention policy.

Response: Policy will be established within the next 90 days.

#23 The organization should have policies establishing for segregation of duties of key transactions. The person who records the transactions should not be the person also verifies the delivery of goods. The duties of authorization, recording, custody and reconciliation should be segregated.

Response: The formal policy will be developed within the next 120 days; however implementation of that policy is currently being utilized to achieve the best segregation of duties possible.

#24 The MPSCC should consider hiring administrative staff to ensure that all of additional policies procedures and processes that are needed to be put into place get timely established and are consistently maintained and carried out going forward.

Response: As mentioned in recommendation 18, by the OIG (additional personnel), we are currently preparing the scope of work (under development).

#25 The governing board of the MPSCC should ensure that all activities are in compliance with internal control standards.

Response: The MPSCC agrees; and quarterly meetings are already in the planning and will be established for compliance review, within the next 90 days.

#26 Establish a countywide public safety radios communications committee to ensure coordination and compatibility between all organizations involved in implementation, support, and/or use of public safety radios.

Response: The MPSCC believes that the once established and disbanded Countywide Public Safety Radio Communications Committee and Communications Systems and Operations Policy Advisory Committee

ATTACHMENT 3 (Continued)

(CSOPAC) before disbandment in 2001 allowed for dialogue and views for public safety communications to at least be shared for discussion and for familiarization of other systems. Hopefully a new committee can be formed so that proposed radio planning and philosophies for the future can be shared. We wholeheartedly support the development of this committee.

Findings

The Office of Inspector General has produced a 47 page report stating their findings and recommendations. The MPSCC has responded to all recommendations from the IG. The findings are generally adequately documented with some degree of certification but there are areas in the findings that are subjective and arbitrary as to the IG's opinions, and lacks sufficient detail and analysis showing cause-and-effect, in some instances.

As an example, the IG puts their emphasis on the lack of management, when in fact, there were many uncontrollable factors that impacted the delay of installation as briefly reviewed below.

IG document page 2 paragraph 1 management

The original target date of March 21, 2007 for completion and acceptance of phase 1 was significantly exceeded. The first of the three phases 1 municipalities, Palm Beach Gardens (PBG), did not become operational until September 2009 in the second, Palm Beach (PB) until April 2010. The third, WPB is still not operational. System acceptance occurred on July 20, 2010 over 40 months after the original target date.

MPSCC Response:

Management, or the lack of, was not the primary cause for delay. Tower site acquisition was the salient cause; the last tower site was brought online in 2009.

The timing of Town of Palm Beach coming live on the system was not a project management issue, but designed. The Town waited for the legacy system reconfiguration to be completed, which would provide backup for officer safety and system redundancy.

Management played only a small part of delaying the system acceptance in July 2010. As stated, tower site acquisition, the inability to establish a tower site in IBIS took many months. The use of West Palm Beach's wastewater tower site was challenged and delayed by Palm Beach County for many months. This represents only some of the issues encountered by the MPSCC during implementation. However, the underlying cause for the system delay was in fact tower site acquisition.