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MEMORANDUM

TO: HONORABLE MAYOR &
CITY COUNCIL

FROM: Deanna J. Santana

SUBJECT: Update P25 Radio System Implementation **DATE:** August 26, 2011

INFORMATION

Recent reports in the news media provide conflicting conclusions regarding the status of the new P25 radio system. The purpose of this Information Memo is to report on the status of the system implementation and identify remaining issues to be resolved, as reported to me by the Department of Information Technology.

Background

The City of Oakland deployed a new P25 public safety interoperable radio communications system on June 5, 2011. Prior to launching the new system, the City's first responders were equipped with an analog radio system that was nearing 20 years old and was experiencing well-publicized service interruptions and periods of instability.

The new digital P25 system meets approved national standards and ensures interoperability with P25 systems in neighboring jurisdictions in times of emergency or when necessary in the course of daily operations.

The planning, design and implementation of the new P25 system took several years, as is typical for any new technology. Prior to the launch, the Department of Information Technology and the Oakland Police Department conducted an initial 30-day BETA testing during the month of May.

Once the system launched on June 5, the City anticipated a 90- to 120-day post-implementation period which is necessary to stabilize the system and fine tune the hardware and software. Technical issues inevitably arise from the deployment of new technology, especially with a system as complex as the new P25 system. Typically during the implementation period, technicians work with users to resolve any technical issues, conduct user training and make necessary adjustments to the system.

Still, this post-implementation period can be challenging, since we strive to migrate and stabilize 2,000 radio users on this new system without causing any major disruption in day-to-day operations as they become more acclimated to it and we continue to address the remaining issues. We are currently at Day 82 of that 90- to 120-day implementation period.

During this period, public safety personnel have raised issues about challenges they are encountering in the field related to the operation of the radio system. Although the implementation period is understandably frustrating for radio users, safety of first responders and the public are our top priority, and we are working diligently to quickly resolve the reported issues.

Progress Made During Post-Implementation Period

Embedded IT Technical Support in Police and Fire Dispatch to Quickly Address Problems

Since the system launched in early June, technical experts from the vendor team—Harris and Dailey/Wells—have been working 24/7 with our IT staff as well as users and command staff from the Oakland Police Department and Oakland Fire Department to identify and resolve problems as they arise.

Met with Vendor Presidents to Secure High-Level Commitment to Resolving All Issues

During my first week on the job the first week of August, I called a meeting with the presidents of the two vendor companies to ensure that they understood the critical importance of this project and secure their commitment to resolving the issues quickly and thoroughly. During that meeting—and with the Police Chief, the Fire Chief, OPD Command staff, the Interim IT Director and labor representatives present—the company presidents agreed to a two-week term to achieve critical corrective action and improved performance. That two-week window closed on August 19.

During that meeting, the company presidents acknowledged that more than eight weeks after the new system launched, they discovered that they had to correct a critical software problem which was affecting the radios and radio sites; they acknowledged that the system had been launched using an incorrect version of the software which significantly affected radio and system performance.

Identifying and resolving this issue alone consumed the first four to six weeks of implementation. However, this critical time period further eroded first responders' confidence in the radios.

Achieved Improved System Performance Following Software Upgrade

The correct version of the software was installed on August 3 and 4, and performance of the P25 system infrastructure, which consists of the microwave network and radio site equipment, has notably improved.

Daily Tracking of Incidents Indicates Marked Improvement

The Oakland Police Communications Division compiles a daily list of incidents reported by field units. This process of incident tracking has been a long-standing practice to establish trends to assist the technical team in focusing on problem areas that need to be addressed.

Prior to the hardware and software upgrade in early August, officers in the field reported numerous intermittent problems indicating dropped calls, bad/distorted audio, constant beeping sounds and radios going into “signal search” (CC Scan) mode on a constant basis.

During the two-week period following the upgrade—August 5 – 19—reported incidents dropped from 399 to 232, indicating a 42 percent performance improvement compared to the two-week period prior to the upgrade, as shown in the table below.

Table 1: Two-Week P25 Radio System Incident Report Analysis

2-WEEK PERIOD 22 JULY - 4 AUGUST 2011		2-WEEK PERIOD 5 AUGUST - 19 AUGUST 2011	
Cutting in and out	43	Cutting in and out	3
Unable to transmit	64	Unable to transmit	28
Unable to receive transmission	12	Unable to receive transmission	6
Unable to copy radio	57	Unable to copy radio	26
Poor transmission	68	Poor transmission	37
Poor reception	8	Poor reception	11
Intermittent signal	5	Intermittent signal	21
Failed radio	20	Failed radio	31
CCScan	88	CCScan	59
Bleed over	2	Bleed over	2
Beeping	0	Beeping	1
Other	24	Other	0
Bad connection	0	Bad connection	1
Reported dead spots	8	Reported dead spots	6
TOTAL INCIDENTS	399		232

Additional Measures Required to Improve Radio Performance

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Radio Batteries

The DIT Radio Shop identified that low batteries were a contributing factor to poor radio performance. New portable and mobile radio batteries will be purchased to replace those batteries that have reached the end of their useful life. Reconditioning the existing radio batteries has not produced the expected battery runtimes needed to support a full shift of a field unit.

P25 Radio System Incident Report Analysis

DIT will continue to work with the vendor to evaluate the incident report areas listed above to determine if further adjustments can be made to the system to reduce the number of reported incidents, as well as conduct ongoing training, trouble-shoot identified problems and monitor the performance of the radio system.

Committed to Continuous Performance Improvement

Preventive Maintenance Inspections (PMI)

DIT will conduct a quarterly preventative maintenance inspections on all portable and mobile radios in addition to the P25 infrastructure to ensure all system components are performing to the manufacturer's specifications.

Stakeholder Feedback Loop

In order to collect regular feedback from the radio users and quickly respond to any problems, weekly and monthly stakeholder meetings take place. The stakeholder team consists of Police, Fire, vendor engineers and DIT radio staff. DIT will continue to monitor the system for an extended period of time to detect any system problem recurrence.

In addition, DIT has taken the following measures to continuously collect feedback about system performance:

- DIT staff and the on-site vendor radio system engineers address issues reported by radio users on a daily basis.
- Implemented additional training programs for the individual user and communications dispatch personnel.
- Conduct regular status briefing sessions for user group command staff.
- Work with OPD at patrol lineups to brief officers on the current status of the radio system and provide radio best practice informational bulletins.
- Continue to work with Oakland Fire Department personnel to develop a custom approach for their specific needs.

Despite any radio disruptions that may arise, priority calls are being addressed, and technical experts from the vendor team—Harris and Dailey/Wells Communications—are working 24/7 to address the remaining issues. DIT will continue to monitor the daily incident reports to ensure the trend of improvement continues.

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Independent Consultant

Despite the above-mentioned improvement of the system and the efforts underway by DIT staff and vendor technical experts to improve system performance, there are still issues that must be resolved for the system to be considered fully functional.

I am in the process of obtaining a neutral, third-party to assist the City with obtaining a thorough analysis of the issues and recommend specific measures that will optimize the system's performance. At the appropriate time, I will provide further detail about this effort, but am in exploratory discussions at this point.

My expectation is that by the close of business of the 120-day period (the 1st week of October), we will have addressed the performance problems and, more importantly, begun to have established confidence in the new system.

In closing, it is important to acknowledge the patience and professionalism of our first responders during this time of transition.

Respectfully submitted,



DEANNA J. SANTANA

City Administrator

For questions please contact Ken Gordon, Interim Director, Department of Information Technology, at 238-2023.