Memorandum

MIAMI-DADE COUNTY

Date: March 5, 2015

To: Honorable Chairman Jean Monestime
and Members, Board of County Commissioners

From: Carlos A. Gimenez
Mayor

Subject: Status of P25 Radio System – Final Update
(Directive 141048)

The following information is being provided as a final report on the status of the progress of the emergency communication radio system (P25) as requested by Commissioner Sally A. Heyman during the May 14, 2014 Public Safety and Animal Services Committee meeting.

Miami-Dade County has one of the nation's largest 800 MHz radio telecommunications systems supporting Miami-Dade Police Department (MDPD), Miami-Dade Fire Rescue (MDFR), Miami-Dade Corrections and Rehabilitation Department (MDCR), Miami-Dade Transit (MDT), Public Works and Waste Management (PWWM), Water and Sewer (WASD), Miami International Airport (MIA), PortMiami, Miami-Dade County Public Schools (MDCPS), and 27 participating municipalities supporting both public safety and government operations. In addition to these local agencies, numerous state and federal agencies depend on this system for day-to-day communication among first responders, response to natural disasters and special events.

On August 6, 2004, the Federal Communications Commission (FCC) issued a report and order to modify its rules governing the 800 MHz band stating that public safety and other radios systems occupying the 800 MHz band were experiencing radio frequency interference as a result of the growth in adjacent commercial bands. The order required its users, including Miami-Dade County, to reconfigure operations by engaging in a frequency swap known as rebanding. On January 28, 2010 the Board of County Commissioners (Board) approved Resolution R-83-10 waiving the formal bid procedures to authorize the execution of a settlement agreement with Nextel South Corporation and a purchase agreement with Harris Corporation to address the FCC mandate. The rebanding effort, as required by FCC, and the ensuing agreements provided the County with a state of the art radio communications system of an estimated market value of $165,000,000, for a cost to the County of $25,000,000. The project was conducted in two phases for a total of two 20-channel radio systems.

Phase one (1) of this project was successfully completed by the end of December 2012. The following departments successfully migrated to the new radio system: MDT, PWWM, WASD, MIA, PortMiami and MDFR. The deployment of phase two (2), consisting of more than 50 local, state, federal, and tribal law enforcement and first responder agencies, began in earnest on January 2013. The complexity of this final phase required removing phase one (1) equipment for all radio sites to make room for phase two (2) infrastructure equipment and physically touching almost 14,000 handheld and trunk-mount radios across requiring multifaceted coordination and planning to ensure that law enforcement services to the community were not affected.

During the November 12, 2014 Public Safety and Animal Services Committee, staff members from the Information Technology Department (ITD) presented the Committee members with a P25 Radio System Project update (attached) indicating the history and issues encountered during the course of this project. At the time of this report, ITD, Harris Corporation, and MDPD were diligently working together to resolve issues reported by the end users and anticipated that the project would be successfully completed by the end of December 2014.

The last groups of users were migrated by November 18, 2014. The P25 Digital Radio System is fully functional and all user groups have migrated to the new platform. Almost 14,000 handheld and trunk-mount radios across local, state, federal, and tribal law enforcement and first responder agencies are operating on the P25 digital radio system. Since September 4, 2014, more than 8.9 million radio transmissions have been processed successfully by the system. Final acceptance of the system occurred on December 18, 2014. The frequencies used by the legacy platform were returned to the FCC December 21, 2014, thirty-three (33) days ahead of schedule.

To further enhance radio communications, Harris Corporation replaced antennas at two radio sites in the south, which improved coverage. In addition, the vendor has committed to provide the County with equipment to increase radio coverage in the south end of the County. ITD is evaluating a complete coverage analysis to ascertain future coverage needs.

Rigorous planning and commitment from all entities working as a team resulted in a successful cut-over without a major incident. Users on the new system have expressed high satisfaction with the improved audio quality that the new platform is providing throughout Miami-Dade County. The system is successfully processing millions of calls each month and is substantially capable of processing more calls upon demand.

If you have any further questions, please contact Angel Petisco, Director, Information Technology Department at 305-596-8455, or me directly.

c: Robert A. Cuevas, Jr., County Attorney
Russell Benford, Deputy Mayor, Office of the Mayor
Edward Marquez, Deputy Mayor, Office of the Mayor
J.D. Patterson, Director, Miami-Dade Police Department
Angel Petisco, Director, Information Technology Department
Charles Anderson, Commission Auditor
Christopher Agrippa, Clerk of the Board

MIAMI-DADE COUNTY
P25 RADIO SYSTEM
PROJECT UPDATE

Public Safety and Animal Services Committee
November 12, 2014

MIAMI-DADE COUNTY

PROJECT BACKGROUND

- Rebanding
  - FCC mandate
  - Separate public safety & commercial carrier frequencies
- Nextel Settlement / Harris Contract
  - 24,000 subscriber radios
    - handheld, mobile, batteries, accessories, etc.
  - P25 Digital Infrastructure
  - Market Value: $165,000,000
  - County Investment: $25,000,000
- BCC approval
  - January 2010

MIAMI-DADE COUNTY

CONTRACT HIGHLIGHTS

- 24,000 Dual-Band (700/800) Portable / Mobile Radios
  - 2 year warranty
- Moved to two industry standards
  - IP Packet based System
  - P25 Digital Public Safety Protocol
    - Subscriber Radio – Vendor Agnostic
- Removed 20 year old radio system
- In-building coverage improvement at 65 locations
- Replaced 10 older site Uninterrupted Power Supply (UPS) systems
- Replaced 71 dispatch consoles for Police/Fire/Transit
- Upgraded 4 tower sites
- Upgraded 4 sites A/C systems
- Upgraded 3 sites back-up power generators
- Provided same or better level of coverage as Legacy System

MIAMI-DADE COUNTY

PROJECT UPDATE

- Project History
- Reported Problems
- Get-well Plan Results
- Migration Schedule
- Future Improvements

MIAMI-DADE COUNTY

PROJECT HISTORY

- Project initiated in January 2010;
- First of two 20-channel radio systems successfully deployed by December 2012 as scheduled – 14,000 Radios;
  - Transit, Fire Rescue, WASD, Aviation, ISD, PWWM, Seaport, etc.
- Immediately began to work on deploying 2nd 20-channel system (B) by April 2014;
  - Performed a 100% cut-over of more than 14,000 subscribers in use by more than 60 law enforcement agencies;
  - After much testing, users reported complaints of multiple problems;
- May 2014
  - All system B users returned to EDACS (FallBack System)

MIAMI-DADE COUNTY

REPORTED PROBLEMS

Radio code issues:
Missing audio - code
Declaring emergencies - code
Multiple access retries – code
Bleed-over – user training
Garbled audio – coverage

Console Issues:
Lockups and crashes - code
Receiving emergencies - code
Patch bleed-in – code
Pre-emption – user training
Audio volume – user training / new
Dispatcher headsets
Status messaging – network issue

Radio Coverage / Interference

- Cutler Bay / Palmetto Bay
- Sunny Isles area

MIAMI-DADE COUNTY

GET-WELL PLAN RESULTS

- FCC granted frequency extension from July 22, 2014 to January 21, 2015;
- New firmware code eliminated radio/console code issues;
  - Extensive testing performed on hundreds of radios throughout the County
  - Acceptance only with user buy-in
- Thousands of batteries replaced despite out of warranty;
- Lapel Mics replaced;
- Identify poor coverage areas;
  - All present for legacy system
  - Antennas replaced at 2 radio sites in the South (small improvement)
  - One site converted to transmit – PSN
  - One Site needed in the South – SDGC is optimal
  - Complete coverage analysis to ascertain future coverage needs 2015
- Crafted focused migration strategy;

MIAMI-DADE COUNTY

MIGRATION STRATEGY

- Migrate small groups at a time;
- Provided re-training to all users;
  - What the system provides
  - What it does not provide - set the right expectations
  - Audio differences between old & new system
  - Trained dispatchers to recognize good/bad transmissions
  - Dispatchers guided field officers proper use of communications
    - Mic distance from mouth
    - Proximity of radios to each other
    - Having two radios on at the same time on different channels
- Daily roll call orientations – Dispatchers;
- District roll call visits;
- Perform ride-alongs with Officers;
- Review/Resolve problems daily;
- Monitor communications between Dispatcher and field units;

MIAMI-DADE COUNTY

MIGRATION SCHEDULE

- Migration resumed September 4, 2014;
- Nearly 21,000 public safety & general government radios on P25 today;
- Higher level of confidence
  - **Sept 4th – Sept 30th**: 805,304 Calls & 162 Complaints: **.02011% Ratio**
  - **Oct 1st – Oct 24th**: 1,404,827 Calls & 259 Complaints: **.01843% Ratio**

MIAMI-DADE COUNTY

MIGRATION SCHEDULE

District Group		# of Radios	Migration Date	Municipality Within District
1. North West	✓	509	9/4	Opa-Locka, Miami Lakes, Miami-Dade Public Schools
2. Kendall	✓	588	9/9	South Miami, Pinecrest, Miami-Dade Public Schools
3. Hammocks	✓	550	9/16	Miccosukee, Miami-Dade Public Schools
4. Mid West / Muni West	✓	1670	9/30	Airport Security, FIU South, Miami Springs, Virginia Gardens, West Miami, Doral, Hialeah Gardens, Medley, Sweetwater, Miami-Dade Public Schools NMB, Aventura, Golden Beach, Miami Shores, Sunny Isles Beach, FIU North, Miami-Dade Public Schools, Bal Harbour, Bay Harbor Islands, Biscayne Park, El Portal, Indian Creek, North Bay Village, North Miami, Surfside, Miami Gardens
5. Intracoastal	✓	2572	10/14	
6. Northside	✓	427	10/28	Miami-Dade Public Schools
7. South	✓	697	11/2	Cutler Bay, Palmetto Bay, Florida City, Homestead, Miami-Dade School Board, South Migrated one month earlier due to EDACS problems Special Bureaus, Robbery, Narcotics, Air, K9, PCB, Key Biscayne, Seaport , FBI, DOJ, FDLE, State Attorney, US Marshall, USCG, ME, Parks Security
8. HQ		3375	11/18	
9. Corrections		2300	11/18	

FUTURE IMPROVEMENTS

- Additional radio coverage
  - One site needed in the South – SDGC is optimal
    - Construction starts February 2015 subject to County and Citizen Advisory Board in District 9
  - Complete coverage analysis to ascertain future coverage needs by February 2015

MIAMI-DADE COUNTY