



**Report to the
Board of Directors**

**Recommendation to Proceed with Phase 2
of the 800 Megahertz Radio Refresh Project**

April 2015



Purpose

- To provide an update on the Airports Authority's 800 Megahertz (MHz) public safety radio communication system technology refresh project since approved by the Board in January 2014.
- The Business Administration Committee approved and recommends to the Board that it approve staff proceeding with spending \$12.9 million on Phase 2 of the Radio Refresh project.

Background

- In January 2014, the Board of Directors approved the award of a Radio System Technology Refresh contract to Motorola Solutions of Schaumburg, IL, for a multi-phase technology refresh strategy.
- The Committee requested staff to provide updates on each phase prior to initiating subsequent phases.

Phased Implementation (updated)

Phase 1: Foundation

Phase 1: ESTABLISH FOUNDATION

- » Master Site Infrastructure refresh
- » Replace end-of-life subscriber radios.
- » Replace end-of-life Public Safety Recording System.



Phase 2: Capacity, Coverage, and Redundancy

Phase 2a: EXPAND CAPACITY & COVERAGE

- » Replace end-of-life site controllers
- » Increase channel capacity
- » Add an Radio Frequency (RF) Site at DCA Shops Building
- » Add an RF site at Arlington Water Tower

Phase 2b: ESTABLISH REDUNDANCY

- » Add a redundant master/and prime site to IAD.

Phase 2c: LEVERAGE ENTERPRISE NETWORK

- » Replace remote RF site with IP-Based radio equipment.
- » Transition communications backhaul to IP Enterprise Network.

Phase 3: Innovation

Phase 3a: CUSTOMER ENHANCEMENT

- » GPS
- » Automatic Vehicle Location
- » Over the Air Programming
- » Short Message texting
- » Over the Air Rekeying

Phase 3b: BUSINESS INNOVATION

- » Radio over IP

Phase 1 Update: Radio Core Successfully Replaced

- In February 2015, staff replaced existing “Master Site” with a new Motorola IP core “Master Site” which resulted in an increase of the Radio System’s reliability and interoperability with our mutual aid partners.
- Mitigated the risk associated with some end of life components within the current radio system.
- Replaced 16-year old non-public safety subscriber radios and installed a diagnostic analyzer to proactively monitor system activity.

Phase 2: Coverage, Capacity & Redundancy

Staff is preparing to plan and implement the next phase of the Radio Refresh project within a 24-month timeframe:

- Enhance system coverage
 - by adding a secondary radio frequency (RF) site at the DCA Shops Building
 - by adding a RF site at Arlington Water Tower
- Build out a redundant Master/Prime Site at IAD for disaster recovery.
- Increase system capacity by adding channels.
- Improve connectivity by transitioning from copper circuits to Ethernet-based connectivity.
- Upgrade Public Safety and Airport Operations subscriber radios (NCR Encryption Requirements).



Revised Project Cost Forecast

Original Project Budget (Phases 1, 2 and 3): **\$33.3M**

Anticipated Project Spending:

Phase 1 Spending: **\$ 6.8M**

Phase 2 Funding Requested:

Equipment (Hardware/Software) **\$10.1M**

Engineering/Services/Training **2.7M**

Miscellaneous Expenses **0.1M**

\$12.9M

Revised Phases 1 and 2 Forecasted Cost: **\$19.7M**

Conclusion

The Business Administration Committee approved and recommends to the Board that it approve staff proceeding with spending \$12.9 million on Phase 2 of the Radio Refresh project.



Ronald Reagan Washington National Airport



Dulles Corridor Metrorail Project



Dulles Toll Road



Washington Dulles International Airport



METROPOLITAN WASHINGTON
AIRPORTS AUTHORITY

REPORT TO THE BOARD OF DIRECTORS
RECOMMENDATION TO PROCEED WITH PHASE 2
OF THE 800 MEGAHERTZ RADIO REFRESH PROJECT

APRIL 2015

PURPOSE

The purpose of this brief is to provide an update on the Airports Authority's 800 Megahertz (MHz) public safety radio communication system technology refresh project since approved by the Board in January 2014. The Business Administration Committee approved and recommends to the Board of Directors that it approve staff proceeding with spending \$12.9 million for Phase 2 of the Radio Refresh project.

BACKGROUND

The Airports Authority operates a Motorola 700/800 MHz Trunked Radio System purchased in 1997 that provides mission critical communications for the Airports, Dulles Toll Road operations and our mutual aid partners. The system is comprised of proprietary hardware and software components, some of which are no longer supported by Motorola Solutions, Inc. and others that are reaching the end of their life cycle. All of the Airports Authority's mutual aid partners operate Motorola radio systems, and it is essential to maintain seamless interoperability for emergency incidents that may occur at the Authority or elsewhere in the National Capital Region (NCR).

DISCUSSION

Upgrading the radio system is an approved project in the current Capital Program with a budget of \$33.3 million. In January 2014, the Board of Directors approved the award of a Radio System Technology Refresh contract to Motorola Solutions of Schaumburg, IL, for a multi-phase technology refresh strategy. The Airports Authority utilized the competitively procured Prince William County, VA contract, which allowed the Airports Authority access to the same pricing and discounts. The project will be implemented in several phases over a five-year period. The first phase was planned to be implemented over a two-year period and entailed refreshing the Airports Authority's master radio site and selected end-of-life components of the existing radio system. Subsequent phases would address coverage, capacity, redundancy and business innovation requirements.

PHASE 1

Phase 1 involved refreshing the Airports Authority's master radio site and selected components of the existing radio system that are no longer supported and reaching the end of useful life. Utilizing the Master Site Refresh approach entailed significantly less costs than deploying an entirely new radio system, and by leveraging the remaining useful life of the Airports Authority's existing radio system hardware investment, a fully supported technology platform is achieved while maintaining and improving interoperability with other public safety users in the NCR.

This phase was implemented in 2014 and 2015. The final cost of Phase 1 was contracted for \$6,871,932.

PHASE 2

Phase 2 will address capacity, coverage, and redundancy and will be implemented over the next 18-30 months as the components reach the end of support. The Airports Authority will continue to leverage the technology that will bridge the new P25 Master Site Core and existing radio frequency (RF) infrastructure as the project progresses. As part of Phase 2, staff will:

- Expand the system coverage at DCA by adding a secondary RF site at the Shops Building.
- Expand the system coverage by addressing coverage gap between DCA and Tysons by co-locating with Arlington County at the Arlington Water Tower.
- Build out a Master/Prime Site at IAD for disaster recovery.
- Enhance system capacity by adding on the current 11 channel system
- Transition connectivity from current copper circuits to Ethernet-based connectivity.

The projected cost for Phase 2 is \$12.9 million.

Next Steps

The Business Administration Committee approved and recommends to the Board of Directors that it approve staff proceeding with spending \$12.9 million for Phase 2 of the Radio Refresh project.

Prepared by:

Office of Technology

April 2015

Proposed Resolution

Recommending that Staff Proceed with Phase 2 of the Radio Refresh Project

WHEREAS, In January 2014, the Board of Directors approved the award of a Radio System Refresh Technology Refresh Contract to Motorola Solutions, Inc., for a multi-phase technology refresh strategy with a total cost not to exceed \$20 million;

WHEREAS, Phase 1 was implemented in 2014 and 2015, at which time the radio core was successfully replaced;

WHEREAS, Staff is preparing to plan for implementation of the next phase of the Radio Refresh project, which will address the radio system's coverage, capacity and redundancy over a 24-month period: now, therefore, be it

RESOLVED, That the Business Administration Committee approves proceeding with Phase 2 of the Radio Refresh Project for a projected cost of \$12.9 million, consistent with the staff recommendation presented on March 18, 2015.

*Recommended by the Business Administration Committee on March 18, 2015
For Consideration by the Board of Directors on April 15, 2015*