

Memorandum



CITY OF DALLAS

DATE December 1, 2017

TO Honorable Mayor and Members of the City Council

SUBJECT **Radio System Replacement Project**

On Wednesday, December 6, 2017, you will be briefed on the Radio System Replacement Project. The briefing materials are attached for your review.

Please feel free to contact me if you have any questions or concerns.

A handwritten signature in black ink, appearing to read 'Jo M. Puckett', with a long horizontal flourish extending to the right.

Jo M. (Jody) Puckett
Assistant City Manager (I)

c: T.C. Broadnax, City Manager
Larry Casto, City Attorney
Craig D. Kinton, City Auditor
Billerae Johnson, City Secretary (Interim)
Daniel F. Solis, Administrative Judge
Kimberly Bizer Tolbert, Chief of Staff to the City Manager
Majed A. Al-Ghafry, Assistant City Manager

Jon Fortune, Assistant City Manager
Joey Zapata, Assistant City Manager
M. Elizabeth Reich, Chief Financial Officer
Nadia Chandler Hardy, Chief of Community Services
Raquel Favela, Chief of Economic Development & Neighborhood Services
Theresa O'Donnell, Chief of Resilience
Directors and Assistant Directors

Radio System Replacement Project

City Council Briefing
December 6, 2017

William Finch,
Chief Information Officer,
Communication &
Information Services



City of Dallas

Presentation Overview

- Background
- Procurement Process
- Implementation Plan
- Next Steps

Project Background

- Current system design over 40 years old
- Last radio system technology refresh over 20 years ago
- City Radio System vulnerability assessment performed concluded:
 - Radio network was not narrowband or P25 compliant
 - Radio coverage inadequate in areas of City and inside buildings
 - Radios susceptible to security breaches
 - Radio microwave system lacked fault tolerance

Project Background (Cont.)

- Project 25 (P25)
 - Suite of technical standards developed to provide digital voice and data communication suited to public safety and first responders
 - P25 is a direct replacement for an analog radio system as the City of Dallas's radio system
 - Key technology improvements with P25 includes:
 - Encrypted communications
 - Interoperability allowing different agencies to communicate among themselves
 - Additional GPS and location services, enhancing user safety in an emergency situation

Key Technology Improvement Examples

- Enables encrypted communications, which cannot be intercepted by a third party.
 - Prevents unauthorized monitoring with a scanner or streaming via scanner apps
- Enables interoperability allowing different agencies to communicate among themselves, even if they have different P25 equipment.
 - Most all agencies in surrounding counties use this type of radio system
- Enables GPS and location services on the radio device, enhancing user safety in an emergency situation.
 - Radios will transmit GPS when the emergency button is pressed showing user location

City of Dallas P25 Radio Project Approach

- The City is addressing recommendations in phases:
 - Phase 1 – Narrowband Radio Devices – Completed
 - April 2012: Public Safety and Budget, Finance & Audit Committees briefed on Overview of Radio System, FCC Narrowband Regulation and P25 Standard
 - Phase 2 – Microwave Communications System – Completed
 - April 2015: Public Safety Committee briefed on Progress update on Radio System Network Replacement
 - Phase 3 – Radio System Infrastructure – In Progress

Phase 1 – Narrowbanding

- Phase Status – Completed (December 2013)
 - Upgraded 8,275 radios for Police, Fire-Rescue, City Marshals, Office of Emergency Management and Water Utilities
 - All devices are P25 compliant
 - Total cost of \$27.7M



x17640824 fotosearch.com

Phase Created
More Narrow
Lanes
Resulting in
MORE Lanes of
traffic in the same
space



Phase 2 – Microwave Replacement

- Phase Status – Completed (December 2014)
 - New system provides:
 - Higher reliability & redundancy
 - Tripled capacity
 - Improved performance
 - Can expand to meet new needs
 - Total cost of \$6.6M



Phase 3 – Radio System Replacement

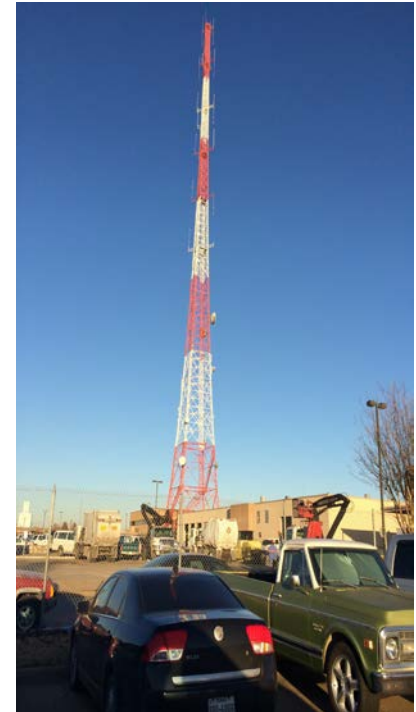
- Phase Status – Currently Underway



- Replace old and unsupported radio system and equipment



- 100% compliant with P25 Public Safety standard



Phase 3 – Planned vs Actual Timeline

1H15	2H15	1H16	2H16	1H17	2H17	1H18	2H18	1H19	2H19	1H20	2H20	1H21
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Planned Timeline

DEVELOP RFCSP	TECHNOLOGY SOLICITATION	BID EVALUATIONS	CONTRACT NEGOTIATIONS AND COUNCIL AWARD	PROJECT IMPLEMENTATION
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Actual Timeline

DEVELOP RFCSP	TECHNOLOGY SOLICITATION	BID EVALUATIONS	CONTRACT NEGOTIATIONS AND COUNCIL AWARD	PROJECT IMPLEMENTATION (30-35 months)
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Evaluation Criteria

Category	Ranking
Price/Value to the City	30%
Experience & Capability	25%
Functional / Technical Match to City Requirements	30%
City's Business Inclusion and Development (BID) Plan	15%
TOTAL	100%

- Fifty-five percent of possible points focused on vendors capability and how well proposed solution matches City's technical and functional needs

Evaluation Team Members

- Evaluation committee consisted of employees from the following departments and agencies:
 - Communications and Information Services
 - Dallas Police Department
 - Dallas Fire Department
 - Dallas City Marshals Office
 - Dallas Water Utilities
 - Dallas County Radio Communications
 - Dallas County Marshals Office
 - Office of Procurement Services

*The Office of Procurement Services only evaluated cost and the Office of Business Diversity only evaluated the Business Inclusion and Development Plan.

Evaluation Process

- Original system design proposals received January 2017
- Best and Final Offers submitted March 2017
- Vendors alternate system design proposals received July 2017
 - Motorola Score 85.11
 - Harris Score 77.32
- Motorola Solutions deemed the highest proposer based on their Best & Final Offer in September 2017
- Contract Negotiations occurred September – November 2017

Costs and Funding

System Total Cost – \$68.2m

Radio System (Software, Hardware and Installation) \$48.4m

- Municipal Lease Agreement Funds, \$48.4m (\$54.6m with interest)
 - City of Dallas, \$43.1m principle and interest
 - Dallas County, \$11.5m principle and interest

System Maintenance, 15 years - \$10.5m

- City of Dallas, \$7.9m (subject to annual appropriations)
- Dallas County, \$2.6m

Master Agreement for Radios, 5 years, \$7.2m

- Establishes pricing for radio devices for City and Dallas County
- Devices will be ordered on an as needed basis

Implementation Services provided by Black & Veatch, \$2.1m

- City of Dallas, \$1.6m (subject to annual appropriations)
- Dallas County, \$0.5m

Possible External Agencies

- Our flexible P25 network design allows for future growth and capacity for disasters, special events and other future public safety agencies
- P25 radio network current design will support up to 3000 additional radios with current design
- P25 radio network capacity can be increased as needed for future growth

Partnership with Dallas Public Safety Agencies

- Brief non-P25 cities and agencies about technical merits of Dallas' P25 radio system
- Provide technical assistance to cities and agencies with P25 related decisions and purchases
- Cities and agencies who decide to join the Dallas P25 radio network, ensure a successful technical transition and ongoing support services

Recommendation

City Council approval of the three agenda items for the purchase, installation, and maintenance contracts for the P25 radio system on December 13, 2017

1. Motorola Solutions Inc contract
2. Dallas County Interlocal Agreement
3. Black and Veatch Contract

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APPENDIX



Dallas County Cities and Agencies

P25 Cities
Addison
Balch Springs
Coppell
Farmers Branch
Garland
Grand Prairie
Irving
Mesquite
Richardson
Rowlett
Sachse

NonP25 Cities and Agencies	
Cedar Hill	Lancaster
Cockrell Hill	Seagoville
Dallas	Sunnyvale
DeSoto	University Park
Duncanville	Wilmer
Glenn Heights	DISD PD
Highland Park	DCCCD Police Department
Hutchins	Dallas County Hospital District PD

Non-P25 agencies could be potential users on Dallas Radio system. The numbers of radios are estimated at 1750 radios if all agencies became users



Examples of equipment being purchased



Dispatch Console



Radio Site Building



Generator



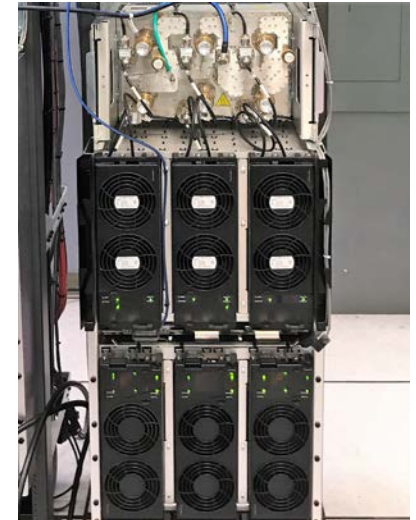
Portable Radios



Car (Mobile) Radios



Radio Tower



Radio Transmitter Racks

City of Dallas Financial Impact

BANK of AMERICA FINANCING FOR RADIO SYSTEM PROJECT							
	\$48,416,232	(\$10,201,941)					
	Annual	Dallas County	New System	Dallas County	City of Dallas	Net CIS	General Fund
	Payments	Allocation	Maintenance	Maintenance	Current O&M	Operating Increase	
FY 2017-18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2018-19	\$ 1,910,378.44	\$ (402,542.02)	\$ -	\$ -	\$ (291,274.00)	\$ 1,216,562.42	\$ 1,058,409.3054
FY 2019-20	\$ 5,458,224.14	\$ (1,150,120.08)	\$ -	\$ -	\$ (291,274.00)	\$ 4,016,830.06	\$ 3,494,642.1522
FY 2020-21	\$ 5,458,224.14	\$ (1,150,120.08)	\$ -	\$ -	\$ (291,274.00)	\$ 4,016,830.06	\$ 3,494,642.1522
FY 2021-22	\$ 5,458,224.14	\$ (1,150,120.08)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 4,579,294.81	\$ 3,983,986.4847
FY 2022-23	\$ 5,458,224.14	\$ (1,150,120.08)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 4,579,294.81	\$ 3,983,986.4847
FY 2023-24	\$ 5,458,224.14	\$ (1,150,120.08)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 4,579,294.81	\$ 3,983,986.4847
FY 2024-25	\$ 5,458,224.14	\$ (1,150,120.08)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 4,579,294.81	\$ 3,983,986.4847
FY 2025-26	\$ 5,458,224.14	\$ (1,150,120.08)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 4,579,294.81	\$ 3,983,986.4847
FY 2026-27	\$ 5,458,224.14	\$ (1,150,120.08)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 4,579,294.81	\$ 3,983,986.4847
FY 2027-28	\$ 5,458,224.14	\$ (1,150,120.08)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 4,579,294.81	\$ 3,983,986.4847
FY 2028-29	\$ 3,547,845.70	\$ (747,578.06)	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 3,071,458.39	\$ 2,672,168.7993
FY 2029-30	\$ -	\$ -	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 271,190.75	\$ 235,935.9525
FY 2030-31	\$ -	\$ -	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 271,190.75	\$ 235,935.9525
FY 2031-32	\$ -	\$ -	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 271,190.75	\$ 235,935.9525
FY 2032-33	\$ -	\$ -	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 271,190.75	\$ 235,935.9525
FY 2033-34	\$ -	\$ -	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 271,190.75	\$ 235,935.9525
FY 2034-35	\$ -	\$ -	\$ 749,953.00	\$ (187,488.25)	\$ (291,274.00)	\$ 271,190.75	\$ 235,935.9525
Totals	\$ 54,582,241.40	\$ (11,501,200.80)	\$ 10,499,342.00	\$ (2,624,835.50)	\$ (4,951,658.00)	\$ 46,003,889.10	\$ 40,023,383.52
	Dallas						
	\$ 43,081,040.60						

