

DATE ISSUED: September 5, 2003 REPORT NO. 03-181

ATTENTION: Public Safety & Neighborhood Services Committee
Agenda of September 10, 2003

SUBJECT: Public Safety Communications Status Report

REFERENCE: CMR 01-251, November 21, 2001

SUMMARY

THIS IS AN INFORMATION ITEM ONLY. NO ACTION IS REQUIRED ON THE PART OF THE COMMITTEE OR THE CITY COUNCIL.

BACKGROUND

The City's four major public safety wireless communications systems are the 800 MHz Radio Network, the Mobile Data Terminal Network (MDT), the Digital Microwave Network, and the Digital Paging Network. These networks were implemented in 1990-91 as a result of the voter-approved \$35 million Public Safety Communications Project. At the time that the existing networks were placed into operation, it was anticipated that their technological life span would be 15 years. In fact, these systems are now at, or near, the end of their service and maintenance lifecycle. They must be replaced over the next several years in order to ensure that the critical communications requirements of public safety will continue to be met, now and in the future.

DISCUSSION

Specified as a high priority initiative in the Council-adopted Information Technology Strategic Plan (ITSP), the first step in the planning process for replacing and upgrading these critical wireless systems is the development of a Wireless Communications Long-Term Plan. Since the Information Technology & Communications Department (IT&C) is responsible for the design, installation and maintenance of the City's wireless communications systems and services, staff worked closely with both the Police and Fire/Rescue Departments in conducting a competitive procurement for a consultant to assist the City with this important planning task.

On November 26, 2001, the City Council approved an agreement with Tech/Knowledge, Inc. (T/K), a telecommunications and information technology consulting firm, to gather and analyze the City's communications systems users' current and future needs and to develop a proposed ten-year wireless plan for meeting those requirements.

The wireless communications long-term planning process was specifically designed to be inclusive, business-driven and consensus-based, as was the ITSP. To ensure the planning process properly addressed the needs of the City, extensive participation was sought from City stakeholders, including many end-users of the technology. The bulk of the input was provided by both internal and external stakeholders, including:

- City departmental management and operational representatives
- San Diego Data Processing Corporation (SDDPC)
- San Diego Unified School District
- San Diego Community College District
- Poway Fire Department
- Leading private sector wireless communications firms

The external agencies were involved in the process as users of the existing City systems.

In the development of the wireless plan, T/K also evaluated communications systems and facilities that are closely related to the wireless infrastructure. Examples of related systems include Computer Aided Dispatch (CAD) systems, dispatch equipment and facilities, a 3-1-1 public service answering point (call center) and the Emergency Operations Center (EOC).

The key objectives of the planning process were:

- Document and evaluate existing radio system problems including reliability, coverage area, interference, interoperability, and channel loading
- Develop a technically and operationally sound economic and progressive plan evolving from existing communications systems and assets to meet service needs and requirements over the next ten (10) years to provide the City with State-of-the-Art technology
- Position new radio system to take evolutionary advantage of emerging land-mobile radio technology including digital voice and data, trunked or cellular radio considerations
- Position the new radio system to make sure that interoperability is maintained with the County of San Diego Regional Communications System (RCS), associated users of the RCS and other fire and police mutual aid providers
- Position the new radio system to include existing external users of the current system, including the SD Unified School District, SD Community College District, Poway Fire Department. Assess the feasibility of adding other external partners.
- Assess current wireless initiatives and how they fit into the long-range plan and integrate to new network infrastructure(s) and technologies
- Develop specific recommended initiatives for implementation over the next ten (10) years and provide a high level cost estimate for the various portions of the project

Listing of Recommended Public Safety Initiatives

T/K recommends the City implement a number of key strategic initiatives over a ten-year period. The initiatives that are related to public safety requirements include:

	Initiative Cost Range	
	<u>Low</u>	<u>High</u>
<u>In-Progress:</u>		
Update City Paging Network	\$300,000	\$300,000
<u>Short Term (1-3 Years):</u>		
1. New Digital Microwave Network	2,550,000	3,000,000
2. Interim steps: Wide-Area Mobile Data Network	3,000,000	5,000,000
<u>Intermediate (4-7 Years):</u>		
1. Permanent steps: Wide-Area Mobile Data Network	6,000,000	8,000,000
2. Voice Radio Network & Control Equipment	60,000,000	70,000,000
3. Computer Aided Dispatch (CAD) Systems	10,000,000	12,000,000
4. Primary Public Safety Dispatch Facility	15,000,000	20,000,000
5. Improved Communications Technical Support Capabilities	650,000	750,000
6. Fire Station Alerting Network/Hardware	1,250,000	1,750,000
<u>Long Term (8-10 Years)</u>		
1. Convert Existing Fire Communications Center to Public Service 3-1-1 call center/backup Public Safety Communications/Training Facility	<u>4,000,000</u>	<u>5,000,000</u>
 Total Estimated Cost*	 \$102,750,000	 \$125,800,000

*Estimated cost does not include additional staff support for the project which will be proposed beginning in FY 2005.

Additional information related to each of the proposed initiatives is contained in the Attachment.

Financing

The City’s existing public safety wireless systems were funded in 1989 with a combination of Capital Improvement Project funds and voter-approved General Obligation bond funds. Staff is now analyzing financing alternatives for the estimated costs of the proposed next major public safety communications initiative and will develop recommendations for Council consideration over the next several months.

Staff’s emphasis during Fiscal 2004 will be directed at implementing the short term initiatives needed to ensure that critical public safety systems continue to operate reliably during the several years needed to plan and replace them. For example, upgrades to the City’s Digital Paging Network are funded and are now underway. Planning for urgently needed partial upgrades to the City’s 800 MHz Voice Network is underway along with interim steps to migrate Police and Fire/EMS users from the existing MDT Network to commercially-provided services. The MDT

Network is no longer supported by the vendor, there are no user devices available for this proprietary network and repair parts are becoming more difficult to acquire. The Police Department has begun to migrate from the MDT Network to commercial mobile data service and has approximately 500 units in operation today. The Fire/Rescue Department is in the project concept phase of their migration to commercial services and a pilot study is planned during the next few months.

Significant additional short-term funding (approximately \$7.5 million) is required over the next two fiscal years to complete the urgently needed Fire/Rescue MDT Network migration and to secure the consultant assistance necessary to develop individual network specifications and prepare bid documents for project implementation in 2005-2006.

Enactment of a Signal Booster Ordinance

One of the chief concerns of public safety personnel regarding the 800 MHz Radio Network is improved signal coverage. This includes both geographic coverage and effective “in-building” radio coverage.

While it is not economically feasible to provide “anytime, anyplace” radio coverage in a city the size and geographic complexity of San Diego, City staff is pursuing additional broadcast sites to improve areas of known signal gaps. To address the problem of “in-building” coverage for large commercial structures like high-rise buildings and hospitals, the consultant recommends that the City consider adoption of a “Signal Booster Ordinance.” Under such an ordinance, builders of new high rise buildings would be required to ensure that public safety communications can function within the facility. This would be accomplished by incorporating radio signal booster equipment in the facility when it is first constructed.

IT&C staff will work with Planning Department staff to review the feasibility of adoption of a “Signal Booster Ordinance.”

Respectfully submitted,

Richard E. Wilken
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& Communications

Approved: Rey Arellano
Deputy City Manager &
Chief Information Officer

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Attachments: 1. [Description of Recommended Key Initiatives](#)
2. [Wireless Communications Long-Term Plan](#)