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CITY MANAGER

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June 2, 1986

Budget and Finance Committee
Sacramento, California

Honorable Members in Session:

Subject: City Communications Center Upgrade and Public Safety Records Management Systems Project

SUMMARY

This report requests that the Budget and Finance Commitee approve a proposal to both enhance the City's Communications Center and install a combined Public Safety records management system project. It is requested that the Committee recommend City Council approval of the attached Resolution which:

1. Approves the City's Communications Center computer enhancements and the Public Safety records management system project and directs staff to incorporate these projects into the City's Five Year Capital Improvement Program.

2. Authorizes the City Treasurer to incorporate monies for the Phase I equipment, software, and related services listed in this report with the planned Certificate of Participation issue. The total estimated cost for this project is $2.930 million with financing costs of $1.7 million.

BACKGROUND

a. City Communications Center

1. Dispatch/Radio Requirements

The City's Communications Center is experiencing a number of problems in connection with computer disk capacity, terminal response speed, and port availability for additional terminals. In preparing the initial request for proposal (RFP) for the computer aided dispatch (CAD) system, staff projected that dispatch requirements would not change significantly in the new automated environment. Therefore, Planning Research Corporation (PRC) was asked to design a system geared for message switching and dispatch workload increases of only 8% annually. Unfortunately in calendar 1984 and 1985 alone, the

amount of message activity has increased 24.7% (from a daily average of 59,841 messages in March 1985 to 74,630 as of January 1986) while disk utilization increased 23.75%. During peak periods, terminal response time is unacceptably slow, resulting in longer periods of time between receipt-of-call and ultimate dispatch. Staff analysis indicates that given the existing delays, it is not possible to add any mobile digital terminals (MDT) to the system without further degrading dispatch response time. In addition, the existing dispatch computer is unable to support all of the planned MDT's for the fire stations and Police/Fire vehicles.

Within the Fire system, there are additional problems related to radio/data interface. The Fire dispatch system was originally designed to run voice and data information on one voice radio channel. Due to system incompatabilities (in some cases, voice blocked data and vice versa), data information is now run on the main Fire voice channel while voice traffic is carried on the backup channel. This operational adjustment increased the use of the backup channel which resulted in interference with several other public agencies in northern California.

As a part of the 1985-86 Approved Budget, the City applied and has received approval for a new 800 Mhz data channel which will permit the Fire Department to regain the full use of its voice channels. The Police Department needs to begin operation of its second 800 Mhz channel during the same period. Both departments need to acquire radio equipment in order to fully use these data channels.

2. Power

Another major on-going problem at the City Communications Center is the lack of a uninterrupted power supply (UPS) for the CAD/message switching computer. The importance of a continuous on-line backup power supply was not known at the time that the original system design specifications were prepared, however, the requirement for such a power source has become more obvious as surges and/or reductions have occurred at the Center. The existing building generators need about twenty seconds to achieve their full operating power; thus, ten or fifteen second power losses leave the computer without a power supply. Several power fluctuations occurred during 1985 and Police systems support staff were able to reconstruct most of the records from backup tapes. However, since the dispatchers are constantly entering data and changing the status of vehicles, there is always the potential that computerized information would be lost as a result of such an incident.

3. Motorcycle Radios

Mobile radios on the Police motorcycles were originally installed

more than fifteen years ago. Many of the radios are now obsolete and all of them have required servicing within the last three years. In many cases, replacement parts are no longer being manufactured and the Police Department feels that it is no longer effective to continue to maintain rather than replace these radios.

b. Public Safety Records Management Systems (RMS)

1. Police

In 1971, the Police Department began to implement a batch records management program on the City's central mainframe. Access to the Sacramento County Automated Warrant information, California Law Enforcement Telecommunications System (CLETS) data, Department of Motor Vehicle records, as well as the City's Sacramento Crime and Arrest Reporting System (SCARS) information was provided through separate and independent systems. By the early 1980's, a Message Switcher Computer System (MSS) was installed to provide on-line, integrated access to various county, state, federal, and international criminal justice databases. The new MSS was installed on separate equipment within the Police Department. As these various information systems developed, it became obvious that a comprehensive look needed to be taken at all Police computerized data to ensure that projects were integrated and provided timely and accurate computer aided dispatch, on-line access to information from outside agencies as well as internal records, and acceptable response times.

The Police Department hired the consulting firm of Main Hurdman, Inc. to conduct a comprehensive review of their information needs, taking into account such factors as system integration, technological developments in hardware and software, and where and how such a computer facility should be located and operated. At that time, Main Hurdman noted that the department had separate systems for capturing and entering data, leading to storage and maintenance redundancies. They recommended that a revised approach be taken which would centralize all Police information systems within the department itself, utilizing off-the-shelf programs to the extent possible. In addition, it was recommended that a Police mini-computer system be acquired which would accomodate growth in the volume of transactions and that support data processing staff be hired to maintain and manage the department's centralized records. These recommendations were reviewed and concurred with by Police and Data Processing staff.

2. Fire

The Fire Department is now developing its system requirements for an integrated records management program. The department currently has the Company Inspection System (CIS) information, Fire incident reports, hazardous material data, and underground tank records

programs. Each of these projects operates under separate batch mainframe and/or micro-based computer systems and are not internally linked together. Field officers need this information as well as other records management data such as equipment inventory listings, etc. It is not possible to develop a comprehensive automation master plan for the Fire Department using in-house staff in less than two years, given existing demands. This timeframe does not allow the department to have its analysis completed prior to having to convert the existing systems from the Sperry Univac computer in 1988.

3. General

Many of the previously described systems are installed on the City's Sperry Univac equipment and maintained by Data Processing personnel. During 1985, almost 19.5% of all programming hours and 29.6% of all on-line transactions were related to various public safety records management systems Both the Data Processing and Police Department Master Plans indicated that it would be more efficient for the City to use a decentralized data processing approach for specialized single-user programs. Specifically, the Data Processing Master Plan states in the 1985-90 Strategic Plan that:

> "Systems which perform functions and maintain data bases unique to a department may be developed as stand-alone systems" ... with ... "separate equipment for systems with potential specialized software needs (e.g. Police and Fire dispatching, Library, GSA 'GEMS' system, automated mapping, and scientific engineering systems)."

ANALYSIS

Hardware/software costs and a realistic implementation timetable were two of the main determining factors used in deciding how to address the Communications Center's operational problems. A multi-phased approach was recommended which would permit CAD and MDT enhancement activities to be implemented within Phase I and completed within the next twenty-four months. The implementation of integrated Police and Fire Departments' records management system programs would follow in Phase II. The proposed Phase I operational project is intended to:

- Eliminate the potential for power interruptions to the CAD computer system.
- Provide equipment for the new Fire and the second Police 800 Mhz radio channels.
- Enhance the entire CAD operation by providing faster computer throughput and records capacity.

- o Permit MDT's to be installed in all Police and Fire equipment and 21 Fire stations.

- o Provide for a Fire oriented Management Information System similar to the one currently used by the Police Department.

- o Begin to integrate a Records Management System for the Police Department and develop a Fire Department records management master plan.

- o Permit the hiring of required support personnel and project management staff.

- o Replace obsolete motorcycle radios.

These objectives were incorporated into a five point program which includes the following elements:

1. An Uninterrupted Power Supply

An analysis by General Services staff indicated that an on-line battery system will provide the best backup power source for the Public Safety computer. Preliminary plans have already been prepared which outline the requirements of the UPS and it is anticipated that delivery and installation of this item can be accomplished within a 120 day period.

2. Equipment of Police and Fire 800 Mhz Radio Channels

System specifications have been developed for equipping the Police and Fire 800 Mhz channels. The new Police radios will be compatible with existing equipment. In the case of the Fire Department, brand new data radios will be purchased.

3. Upgrade of the Current CAD Hardware/Software and MDT Installation

This phase of the project will involve purchase and installation of the following:

-Digital Equipment Company (DEC) PDP and VAX hardware.
-Room air conditioning.
-MDT's for the fire stations and Police/Fire vehicles.
-System software for the new PDP's and VAX equipment, a Fire Management Information System (similar to the one already installed for the Police Department), and the new MDT equipment.
-Police Records Management Equipment and Software.

In addition, a consultant will be used to handle all project management tasks associated with the implementation of this program

including providing overall project management assistance (developing implementation plans, monitoring progress, etc.), assisting in developing system operational policies and procedures, preparing user field guides, resolving hardware implementation and interface issues, testing, and providing hardware conversion assistance. It is expected that the use of a consultant will reduce the allocation of in-house resources and aid in faster implementation of the proposed work program.

4. A Records Management Program

The Police Main Hurdman report will provide the basis for the software selected for the Police records management program. Several vendors have presented preliminary information on the type of systems which are available and capable of handling all of the Police management records. As was previously indicated, the project management consultant will assist the Department in preparing the RFP for this project.

Data Processing and Fire Department staff will develop the RFP for a records management consultant. The consultant will be asked to prepare a Fire Department records management system master plan which will be used to determine Fire automation requirements over the next five to ten years. It is anticipated that the consultant could complete this task within six months.

5. Motorcycle Radio Replacements

Specifications have been developed to replace 27 mobile radio units which are currently installed on Police Department motorcycles. This project is currently included within the 1986-91 Capital Improvement Program (CIP Number POL-87-001) for debt financing.

Many of the costs related to Phase II will vary, depending upon information obtained during Phase I implementation (for example, the Fire RMS requirements). Given the multi-phased approach which is being proposed for this project, it is recommended that status update reports be returned to the Committee indicating how various activities are progressing. The first Phase I update and Phase II planning document should be ready for formal presentation in January 1987.

FINANCIAL

Program expenses which can be debt-financed are summarized below (more complete detail can be found in Exhibit "I"):

Capital Equipment and Systems	Cost
1. Uninterrupted Power Supply	$ 80,000
2. Equipping Police/Fire Radio Channels	145,980

Capital Equipment and Systems	Cost
3. Upgrading Current Hardware/Software and Installing MDT's	2,342,000
4. Records Management	258,600
SUBTOTAL COMPUTER/RMS ESTIMATED EXPENSES	$ 2,826,580
5. Motorcycle Radio Replacements	$ 103,000
TOTAL FINANCING COSTS	$ 2,929,575

System support personnel are required for ongoing activities related to the expanded computer system on a daily basis. Specifically, it is recommended that three computer operators, a systems software specialist, and a Police clerk be added to the Police Department's staffing complement. The new computer operators will provide twenty-four hour coverage for all Communications Center technical tasks, replacing supervising dispatchers who perform these functions when the operators are not present since there are currently only two computer operators. The software specialist will be assigned to the Communications Center to provide on-going system maintenance and analytical support while the Police clerk will be used in documenting system changes and enhancements and data entry. The employee service and equipment costs associated with this aspect of the program are as follows:

	Projected Cost
Personnel:	
System Software Specialist	$ 56,300
Police Clerk	25,540
Computer Operators (3)	95,217
Subtotal Annual Personnel Costs	$ 177,057
Equipment:	
Office Space	$ 26,000
Internal Furnishings, etc.	16,300
Sub-total Equipment Costs	$ 42,300
COMPUTER/RMS OPERATING COSTS	$ 219,357

The anticipated 1986-90 impact of this program is as follows:

	1986-87	1987-88	1988-89	1989-90
Employee Service Costs*	$ 150,212	$ 185,280	$ 194,544	$ 204,271
Net Maintenance**	16,044	122,223	178,147	178,204
One-Time Equipment	42,300	26,000	-0-	-0-
Debt Service	-0-	-0-	1,130,320	1,126,120
NET OPERATING IMPACT	$ 208,556	$ 333,503	$1,503,011	$1,508,595

*Reflects .75 FTE Software Specialist and .50 FTE Police Clerk for the initial year of implementation.

**Includes motorcycle radio maintenance costs.

The anticipated 1986-87 net operating costs will be offset by the proposed defunding of capital project POL 86-003 (Police Department Mini-Computer). The cash amounts which were proposed ($350,00 in 1986-87 and $370,000 in 1987-88) will no longer be required once the debt financing proposal is approved.

RECOMMENDATION

It is requested that the Budget and Finance Commitee approve this proposal to both enhance the City's Communications Center and install a combined Public Safety records management system project. It is further requested that the Committee recommend City Council approval of the attached Resolution which:

1. Approves the City's Communications Center computer enhancements and the Public Safety records management system project and directs staff to incorporate these projects into the City's Five Year Capital Improvement Program.

2. Authorizes the City Treasurer to incorporate monies for the Phase I equipment, software, and related services listed in this report with the planned Certificate of Participation issue. The total estimated cost for this project is $2.930 million with financing costs of $1.7 million.

Respectfully submitted,

Solon Wisham, Jr.

Solon Wisham, Jr.
Assistant City Manager

COMMUNICATIONS CENTER PROJECT COST ESTIMATE DETAIL 6/ 3/86

Phase I - July 1, 1986 through July 1, 1988

	Item	Unit Cost	Total Cost
1.	Uninterrupted Power Supply (UPS)	$80,000	$80,000
2.	Equip Radio Channels		
	A. Fire	60,343	
	B. Police	65,743	
	C. Spare Controllers	19,894	145,980
3.	Upgrade Current Hardware/Software and Install MDT's		
	A. Communications System Upgrade		
	1) DEC VAX Hardware	305,628	
	2) DEC PDP Hardware	34,524	
	3) DEC VAX Software	7,190	
	4) DEC PDP Software	3,590	
	5) PDP VAX Supplement Software	347,000	
	6) Tax and Installation	204,018	
	7) Air Conditioning	11,000	912,950
	B. Fire Management Information Software	10,000	10,000
	C. System Upgrade/Performance Enhancements		
	1) SNA Protocol	60,000	
	2) Color Dispatch Monitors	27,984	
	3) CRT Replacements	116,916	204,900
	D. MDT Installation/Implementation		
	1) Equipment		
	a) Fire Stations	149,156	
	b) Fire Front Line Equipment	210,800	
	c) Fire Rear Line Equipment	109,064	
	d) Police Vehicles	447,330	
	2) Software	97,800	1,014,150
	E. Project Managment Consultant		
	1) General Project Management		
	a) Implementation Plan		
	b) Hardware Installation Coordination		
	c) Coordination and Vendor Interface		
	2) Develop Policies and Procedures		
	3) Prepare User Guides		
	4) RFP Revision and Preparation	200,000	200,000
4.	Records Management		
	A. Police Hardware		
	1) DEC VAX Hardware	103,963	
	2) DEC VAX Software	150	
	3) Tax and Installation	6,237	
	B. Police Software	123,250	
	C. Fire RMS Consultant	25,000	258,600
5.	Motorcycle Radios	103,000	103,000
TOTAL COMMUNICATIONS PROJECT - PHASE I			2,929,580

RESOLUTION NO.

ADOPTED BY THE SACRAMENTO CITY COUNCIL ON DATE OF

RESOLUTION APPROVING THE CITY'S COMMUNICATION CENTER ENHANCEMENT PROJECT

WHEREAS, the City Council has approved the attached report and concurs with its recommendations.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

1. The City's Communications Center computer enhancements and the Public Safety records management system projects are hereby approved. Staff is hereby directed to amend the 1986-91 Capital Improvement Program and incorporate these projects into this program.

2. The City Treasurer is hereby authorized to incorporate monies for the Phase I equipment, software, and related services listed in the staff report with the planned Certificate of Participation issue. The total estimated cost for this project is $2.930 million with financing costs of $1.7 million.

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MAYOR

ATTEST:

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CITY CLERK