

DATE: June 23, 2009

TO: Mayor and City Council

FROM: Technology Services Director  
Police Chief

SUBJECT: Public Safety Computer Aided Dispatch/Records Management System  
(CAD/RMS) Replacement

### **RECOMMENDATION**

That the Council approve the resolution providing authority to the City Manager to negotiate and enter into a contract for a new Public Safety Computer Aided Dispatch/Records Management System (CAD/RMS) with New World Systems and execute all documents necessary to implement the loan from the sewer fund to Technology Services and appropriate necessary funding for the project.

### **BACKGROUND**

In 1989, the City of Hayward purchased a new Computer Aided Dispatch System (CAD) and Records Management System (RMS). This system was purchased to provide support for public safety dispatch and the management of the related records and reports that resulted from police and fire responses. The system went live in 1991.

In most agencies prior to the 1990's, CAD systems were used to manage the location of resources, but did not make response recommendations. Dispatching fire and police officers was done by memory and paper dispatch cards.

In 1991, the new Public Resources Corporation (PRC) CAD/RMS system offered predefined unit assignments and recommendations based on the location of an incident, which the City implemented. This allowed for more reliable and consistent unit assignments while leveraging the speed and accuracy of computer technology. This system included a unified Records Management System (RMS) providing for more efficient data sharing. The PRC system managed all the requirements of Police and Fire CAD/RMS at the time of implementation.

By 2000, the Police Department was being hampered by a lack of access to the kinds of data available in newer records management systems. Beyond managing and archiving police and fire reports, the information contained in CAD/RMS databases had become the basis for responding to crime analysis needs, follow-up criminal investigations, resource management, and demands from the community. The existing system did not allow for this kind of access or data compilation, and

PRC had no plans to enhance the system as it was. Therefore, the Police Department began to investigate replacing the PRC RMS.

In 2000 the Police Department contracted with Orion Scientific Systems of Newport Beach (ORION) to provide a new RMS through an internal application development process. While they had developed significant systems for the California Department of Justice, they had never built or deployed a field-level police report management system. With little understanding of the business processes of a police department, the resulting system did not achieve the Police Department's expectations.

In 2004, the Fire Department recognized shortfalls in their report writing capabilities. Like the Police Department, outside forces were requiring new report writing functionality. One of the critical components was paramedic patient reporting. As a result of their specific needs, the Fire Department decided to purchase and use a new report writing system called FireRMS from Zoll Data Systems, a subsidiary of Zoll Medical Corporation (ZOLL).

At this point the RMS function of the PRC CAD/RMS was no longer used by either the Police or Fire Departments. The essential transfer of CAD information to the two unrelated RMS computer systems was accomplished through proprietary interfaces written by PRC.

## **DISCUSSION**

Currently, the City uses three different systems to perform mission critical Public Safety tasks: the PRC system for CAD and the ORION (Police) and ZOLL (Fire) systems for records management. With the advance of technology, there are significant support and performance benefits to utilizing an integrated system designed by a single vendor to support public safety technology needs.

The following key functions need to be considered in this discussion: accurate and timely dispatching of public safety resources to incidents; records management for both Fire and Police; medical records management and information for patients responded to in the field and/or transported to facilities; field reporting and mobile connectivity; evidence tracking, security, and management; corrections (jail) management; and Animal Services. In addition, modern public safety management requires easy access to complex data and event statistics for City personnel and the community; as well as the ability for Police personnel to compile and analyze multi-layered crime scene data to actively support investigations.

### **System Features**

Hayward's Communication Center is different than most cities because it supports both police and fire services, and any new system has to support the entire public safety response capability.

*Computer Aided Dispatch (CAD)* – The City of Hayward uses the CAD system to manage, track, and deploy emergency response personnel for the entire City. A byproduct of this process is the collection of the data from the 911 calls from the community, the telephone company's automated (telephone) number and location (address) databases (ANI/ALI), information

manually entered by dispatchers, communications between dispatchers, Mobile Data Terminal (MDC) communications from the field officers, original and final call types, and date and time information on all facets of the response including time of dispatch, identification of all field units dispatched, time of arrival, and time the incident was “cleared.” In 2008, the system managed 144,157 police and 15,836 fire incidents.

As previously noted the current system was purchased in 1989 and went live in 1991. This system was written in COBOL, a computer language developed for the Department of Defense to provide a common business language for computers. At the time, COBOL was heavily used in military and intensive use systems, but time has passed it by. Its use today is extremely limited and essential support and upgrades are becoming prohibitively expensive and complicated.

Initially CAD systems were used to input, manage, and track calls for service from the community. However, with advances in software and data transmission capabilities, modern dispatch centers and CAD systems have evolved into a clearinghouse for data mining and resource management. Specifically if it’s accessible, the data automatically compiled as a result of day-to-day public safety responses can be invaluable in command management decisions such as geographically creating and refining police beats, assigning officers, and strategically positioning fire stations; identifying trends for crime analysis; and in responding to requests for information from the community. State of the art CAD systems include mapping, automatic vehicle tracking, improved reporting, and dynamic unit assignments. The only way to take full advantage of this is to purchase a single, integrated solution from a single vendor.

The City’s current CAD system does not have mapping support. Dispatchers and field personnel still rely on printed and Internet maps. Modern systems integrate with the City’s up-to-date internal Geographic Information System (GIS) mapping capabilities. They provide instant visual indicators of all crime and fire/paramedic incident activity. Vehicle tracking allows dispatchers more flexibility to identify the closest field unit to emergency calls, resulting in improved efficiencies.

*Fire RMS* – The Alameda County Emergency Medical Services Agency (EMSA) is responsible for compiling and reporting mandated patient information. The system currently being used by Hayward Fire, the ZOLL Fire RMS system, is the standard for the County. There are indications that EMSA may further reinforce this standard by mandating its use in the near future. There will be an interface implemented between any new system and the existing FireRMS to enable communication between the two systems. Therefore, while we are recommending that the Fire Department continue using ZOLL at this point, it is important that a new CAD/RMS system have the capability of being upgraded with an integrated, single-vendor developed Fire RMS module.

*Police RMS* – The current ORION system does not support mission-critical functions including property reporting, integration with federal, State, and county computer systems, or the ability to efficiently write reports in the field. Other shortfalls include Case Management, Property Room Bar Coding, Alarm Tracking and Billing, and integrated Federal Uniform Crime Reporting (UCR) functionality. All this would be required in a new system.

Examples of real, operational advantages of a new CAD/RMS system include:

- Eliminating time consuming and error-inducing evidence management tasks, (e.g., documenting a gun collected as evidence will automatically query the Stolen Firearms Database and create a bar coded property tag indexing its evidence storage location),
- Automating the production of Uniform Crime Reporting (UCR), which is currently an extremely labor intensive manual monthly mandate.
- Automating and streamlining the management of the False Alarm Program to the point where it will replace one Police Records Clerk position.

Field Reporting – The ORION system does not provide for the efficient writing of reports in the field. Officers cannot enter information remotely and as a result end up returning to the Station to write and print reports. The new systems provide efficient remote report writing, which keeps officers in the community and available to address public safety issues, which is advantageous from a risk management perspective.

Mobile Computing – Beyond improved field reporting, police and fire field units need access to mapping and GIS data. New CAD products allow instant access to the Pictometry and IStreetView data as well as automated GPS directions to provide the field units with the fastest route to calls. Modern CAD systems also allow for the storage of floor plans and hydrant information making them available to each user in the field.

Evidence Tracking – Currently, there is no integration between the ORION RMS system and the property/evidence tracking program. As a result, this requires redundant data entry by officers, crime scene technicians, and the evidence management staff. Given that Hayward Police Department has an evidence inventory numbering in the millions of items, the amount of wasted effort and the inevitable human errors that are introduced are unacceptable. New systems include integrated property and evidence modules that allow officers to print out bar codes to tag evidence and streamline the inventory and essential “chain-of-custody” processes.

Corrections – New systems also include jail booking and management modules, allowing for a more streamlined booking process. They afford a more automated tracking system to ensure that the most effective methods of segregating and housing corrections residents are employed.

Animal Control – Currently the Animal Control systems are not integrated with any of the Police Department software. Animal Control reports are often criminal in nature and sometimes related to police incident reports creating manual case management issues. A new integrated system will provide a solution for Animal Control, allowing for seamless access and data exchange with the rest of the Department.

CALEA Accreditation – The new CAD/RMS should assist the Police Department with their ongoing efforts to be Commission on Accreditation for Law Enforcement Agencies, Inc., (CALEA®) accredited. The CALEA certification was created in 1979 as a credentialing authority through the joint efforts of law enforcement's major executive associations:

- International Association of Chiefs of Police (IACP);
- National Organization of Black Law Enforcement Executives (NOBLE);
- National Sheriffs' Association (NSA); and the
- Police Executive Research Forum (PERF).

The purpose of CALEA Accreditation Programs is to improve the delivery of public safety services, primarily by maintaining a body of standards developed by public safety practitioners and covering a wide range of up-to-date public safety initiatives; establishing and administering an accreditation process; and recognizing professional excellence.

Specifically, CALEA's goals are to:

- Strengthen crime prevention and control capabilities;
- Formalize essential management procedures;
- Establish fair and nondiscriminatory personnel practices;
- Improve service delivery;
- Solidify interagency cooperation and coordination; and
- Increase community and staff confidence in the agency.

## **System Selection**

In 2008, Ron Ace, newly appointed Chief of Police, became very concerned about the lack of analytical resources available to assist the Police Department in the apprehension of criminals and for the overall safety of our community. Understanding the limited existing technology available to the Police Department, the Chief directed his department to investigate the feasibility of upgrading our public safety systems. With the assistance of the Fire, Technology Services and City Manager Departments, the Police Department began the process of performing due diligence to find a solution to address the CAD/RMS situation.

Neighboring agencies were contacted to determine what systems were in use locally. It became quickly apparent that there were two leaders in Alameda County: Intergraph Corporation and New World Systems. Both vendors were contacted to discuss the City's needs and their ability to provide CAD/RMS services for our public safety network. Discussion points included their current system's functionality and how upgrading could provide efficiencies to Hayward. They understood that the City's intent was to achieve maximum integration of police and fire operations. Both Intergraph and New World Systems agreed to make a presentation to staff.

*Intergraph Corporation* – Intergraph Corporation provides CAD services for the Alameda County Sheriff, Alameda County Fire, and the City of Newark. The two County agencies were consulted regarding their experience with the system. The Sheriff's Department is satisfied with their selection of Intergraph Corporation. They are also utilizing Intergraph's report writing system. Both the dispatch center and patrol officers felt the system was working adequately and would perform well for Hayward.

The Alameda County Fire's Dispatch Center is using Intergraph to dispatch all the fire departments under contract with them. However, Intergraph is not providing any records management capabilities. The Alameda County Fire Department, like the Sheriff's Department, was very satisfied with the dispatch product. The Alameda County Fire Department has standardized the use of the ZOLL FireRMS product for records management and retention mainly for its capabilities concerning EMS reporting.

A select group of Hayward Police Department employees attended an Intergraph presentation. Intergraph proved to be a very thorough and professional organization. Employees were pleased with the level of attention and knowledge exhibited by Intergraph's staff. Intergraph's product provided many of the features that they believed needed to be upgraded, including a comprehensive computer aided dispatch system, field reporting, mobile computing, evidence tracking, and corrections. While these modules appear to perform adequately, there were several items that were of concern. The most important concern was the fact that the Intergraph solution was not a single system, but instead used separate CAD, RMS, and Mobile Systems with multiple interfaces to work together as a pseudo single system package. This does not meet the goal of a single, heterogeneous system and is outside what is generally considered "industry best practices."

*New World Systems* – The following agencies within Alameda County use New World Systems: San Leandro Police Department, Pleasanton Police Department, and Berkeley Police and Fire Departments. All three agencies were contacted. All are very pleased with the level of service they are receiving from the product. The detailed analysis performed by each agency, individually, before selecting New World was discussed with the appropriate staff members. All three agencies described how laborious their selection process was. All three cities are pleased with the high level of integration, continuity, and overall functionality the system provided. There were special commendations for the mapping abilities of the system.

The same group of Hayward Police and Fire Department staff attended a New World Systems presentation. Hayward employees were pleased with the level of attention and knowledge exhibited by New World Systems. While New World Systems also provided the same core modules as Intergraph, New World provided a much higher level of integration. Instead of one core product with interfaces to several disparate systems, New World provided a single integrated database with a complete enterprise suite of public safety modules. New World did an impressive job of explaining how an integrated system could streamline public safety processes. Although having one integrated database may seem insignificant, during the demonstration New World was able to show how quickly they could share data among different public safety functions.

After seeing both products, interviewing several agencies, and consulting the core user groups of staff members, it has been determined by the Police, Fire, and Technology Services Departments that New World Systems is best positioned to provide the most complete and integrated solution available in the market today. New World Systems will be able to provide a completely integrated public safety solution. Although the Fire Department will continue to use their current RMS provider for the short term, the long term solution allows them to adopt New World Fire RMS in the future when it is determined to be appropriate.

The New World system is built using modern industry standards including Microsoft Windows Server and SQL database software and is based on industry standard best practices. Users and support staff will realize greater efficiency through streamlined support and elimination of redundant data entry, which will reduce the effort now needed to perform these duties.

Furthermore, the Police Department will be able to utilize this system to more effectively and strategically plan and forecast future crime trends. These positive improvements will bolster efforts to increase the level and quality of service we provide to our community in direct support of Council's priority related to Crime/Public Safety.

### **FISCAL IMPACT**

After identifying the New World Systems CAD/RMS as the best solution to meet public safety dispatch and records management needs, staff explored how to get the best value for the City's dollar. The City's policies allow utilization of a procurement process followed by another comparable public agency in certain circumstances. This is referred to as a "piggyback" bid. In the case of the CAD/RMS project, the competitive process for which New World Systems was the selected bidder by City of Berkeley has been determined to be the best fit and appropriate basis for procuring the CAD/RMS system. The City Attorney's Office and the Finance-Purchasing Division have reviewed the City of Berkeley Request for Proposal (RFP) process, and the procurement process of other agencies that selected New World Systems. Both departments have determined that piggy-backing on the Berkeley contract is legally allowable and advantageous to the City.

Once New World Systems was identified as our preferred solution, a preliminary budget estimate, which is presented below, was obtained. This estimate is not a quote, but rather a basis upon which we will begin to negotiate a final contract.

*TABLE 1: Estimated Project Cost:*

	<u>Action/Service/Component</u>	<u>Sub-Unit Amount</u>	<u>Totals</u>
System Acquisition Costs	Application Software	\$ 939,766	
	Hardware	\$ 257,913	
	Installation Services	\$ 671,237	
	Data Conversion	\$ 88,513	
	User Training	<u>\$ 291,496</u>	\$ 2,248,925
10% Contingency			\$ 224,893
Implementation Consultant			\$ 150,000
Five Years Pre-paid Maintenance			<u>\$ 1,000,000</u>
<b>TOTAL ESTIMATED PROJECT COST:</b>			<b><u>\$ 3,623,818</u></b>

Software, Hardware and Five-years Pre-paid Maintenance – One-time system acquisition costs are estimated to be \$2.25 million. Staff recommends taking advantage of the option to pay five years of maintenance in advance, in order to take advantage of a 20% discount. Staff will also negotiate cost ceilings for maintenance starting in year six.

Implementation Consultant/Project Management – System implementation is significant and technically complex, estimated to take 12 to 18 months. It requires broad interdepartmental cooperation, and an experienced implementation consultant will be critical to the overall projects success.

Funding – Staff recommends funding the project using internal borrowing from the City Sewer Fund reserves. The City Manager, Finance, and Public Works departments have reviewed the proposed loan terms, which include: a) a seven-year loan from the Sewer Capital Fund to the General Fund; b) interest paid to the Sewer Fund will equal the City's monthly investment portfolio rate (currently 2.05%); c) deferral of the first payment due date to FY 2011; and d) the loan may be paid-off in advance if the City obtains alternative funding, such as grants. The debt service payments will be offset by grant funding (when obtained), the reduction of existing maintenance costs, and salary savings achieved through the elimination of one Police Records Clerk position. The City will continue to seek grant funding for this project.

## NEXT STEPS

The Council Technology Application Committee (CTAC) has recommended that the City Council vote to allow the City Manager to negotiate and enter into a contract with New World Systems for the procurement and implementation of a new CAD/RMS for public safety.

Prepared by:



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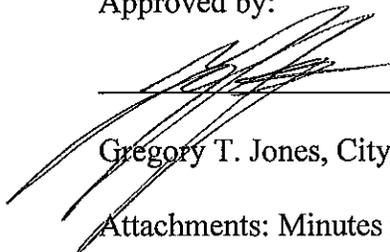
Ron Ace, Police Chief



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Clancy Priest, Technology Services Director

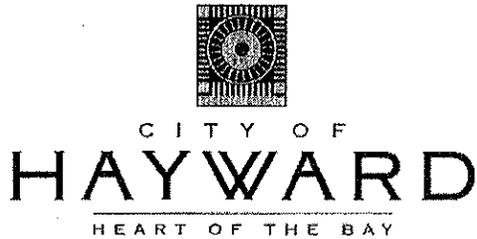
Approved by:



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Gregory T. Jones, City Manager

Attachments: Minutes from the June 10, 2009 CTAC meeting



## **Council Technology Application Committee (CTAC)**

### **Meeting Minutes of June 10, 2009**

**Members Present:** Michael Sweeney, Olden Henson and Bill Quirk

**Staff:** Greg Jones, Fran David, Michael Lawson, Clancy Priest, Ron Ace, Cindy Waters, Desi Calzada

**Guest:** Andy Wilson, Simon Wong, Craig Nelson, Charlie Baptista

#### **Public Comments:**

Andy Wilson resides at 31438 Greenbriar Lane, Hayward/Fairway Park neighborhood – stated he is familiar data validation concepts and asked if it had been tested in court. He asked what the scope of work for the project is, when does maintenance start and are software version upgrades included.

#### **1. Approval of Minutes: Approved**

#### **2. Review of the Public Safety Computer Aided Dispatch/Records Management System (CAD/RMS) Replacement report:**

Technology Services Director, Clancy Priest spoke to the Public Safety Computer Aided Dispatch/Records Management System (CAD/RMS) Replacement report submitted to the committee. The City Attorney discussed the subject of procuring the system through the piggyback of the City of Berkeley's process. The City Manager discussed how the City will fund the project. The Police Chief discussed the need for a modern system with improved technology for information gathering and control and how this would improve service to the community. The Chief considers this the biggest single issue outside of staffing. The Communication Manager highlighted how well a modern system will improve Public Safety. The vendor addressed how well the system will integrate with our other existing database system through MSSQL.

#### **3. Member Comments:**

Councilmember Quirk asked about cost and whether it is worth the expenditure, Chief Ace relayed that it was well worth it. Councilmember Quirk asked the Chief if he would rather have this system or staff. The chief replied that he would always want full staff but if he had to give up staff this system would be what he would want.

The Mayor stated he felt we should proceed and the Chief stated this is something that is needed. The Mayor asked about training. The vendor relayed that the training will be customized to the organization.

Councilmember Henson asked for details on training. The vendor highlighted the section by section approach that will be done and the customization of the training to each group as well as how the groups will be trained then given the system. Councilmember Henson spoke to how this would improve Public safety and their ability to service the public. It will create efficiencies for the department and assist with making the department modern. He suggests this is long overdue.

The Communication Manager spoke of the ability of the proposed system to fully integrate with the City's Geographical Information System (GIS).

The Technology Services Director agreed and also pointed out that the existing Fire records management system will be integrated into the new system by the vendor. The Fire Department would have the ability to change RMS in the future if it is deemed needed.

The Mayor moved that this be put to the full Council, Councilmember Quick seconded, Councilmember Henson agreed.

Councilmember Quirk asked about web pages on the City's website that concerned HPD and were different. The Technology Services Director explained that his department was in the process of reviewing and changing the website for the CRM project and would ensure continuity of paged through this process.

Councilmember Henson requested that we report on technology grant funding at our next meeting.

**Next Meeting: September 16, 2009 @ 4:00pm**

**Meeting adjourned at 4:56pm**





# DRAFT

HAYWARD CITY COUNCIL

RESOLUTION NO. 09-

Introduced by Council Member \_\_\_\_\_

*True  
6/14/09*

RESOLUTION AMENDING RESOLUTION 08-098, AS AMENDED, THE BUDGET RESOLUTION FOR CAPITAL IMPROVEMENT PROJECTS FOR FISCAL YEAR 2008, RELATING TO AN APPROPRIATION OF FUNDS FROM THE SEWER CAPITAL FUND (FUND 613) TO THE TECHNOLOGY SERVICES FUND FOR THE PUBLIC SAFETY AIDED DISPATCH/RECORDS MANAGEMENT SYSTEM (CAD/RMS) REPLACEMENT

BE IT RESOLVED by the City Council of the City of Hayward that Resolution No. 08-098, as amended, the Budget Resolution for Capital Projects for Fiscal Year 2009, is hereby amended by approving an additional appropriation of \$2.25 Million from the Sewer System Fund (Fund 613) to the Technology Services Fund (Fund 100).

IN COUNCIL, HAYWARD, CALIFORNIA \_\_\_\_\_, 2009

ADOPTED BY THE FOLLOWING VOTE:

AYES: COUNCIL MEMBERS:  
MAYOR:

NOES: COUNCIL MEMBERS:

ABSTAIN: COUNCIL MEMBERS:

ABSENT: COUNCIL MEMBERS:

ATTEST: \_\_\_\_\_  
City Clerk of the City of Hayward

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney of the City of Hayward