REQUEST FOR INFORMATION AND COST ESTIMATE (RFICE)

CITY AGENCY	Office of Innovation and Technology
RFICE NUMBER	
RFICE TITLE	**CAD and Mobile Data System**
PURPOSE	The purpose of this document is to provide interested parties with information to enable them to prepare and submit information and a cost estimate for a **Computer Assisted Dispatch System and related Mobile Data System to support the activities of the Philadelphia Police and Fire Departments**
DEADLINE FOR INFORMATION AND COST ESTIMATE SUBMISSIONS	April 8, 2013 at 5:00 PM Local Philadelphia time
SUBMIT INFORMATION AND COST ESTIMATE TO THIS ADDRESS	Connie Talbert Office of Innovation & Technology **Connie.Talbert@phila.gov** Only soft copy will be accepted
VENDOR CONFERENCE	None. Due to the short response time all inquiries will be addressed as they are received.
DIRECT ALL INQUIRES TO:	

NAME	Connie Talbert
EMAIL	Connie.Talbert@phila.gov

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GENERAL INFORMATION

INTRODUCTION

The City of Philadelphia (the "City") is in the initial stages of planning and budgeting for a new commercial off the shelf Computer Assisted Dispatch System and related Mobile Data System (jointly, the "Systems") to support the activities of the Philadelphia Police and Fire Departments. In order to ensure the City adequately allocates its resources and also requests the appropriate resources from Pennsylvania, Federal, and other related entities needed to successfully implement the new Systems, the City requests information from interested vendors regarding approximate cost estimates, "best practices", and proven approaches in all critical subject matter areas required for a successful implementation of the Systems.

This Request for Information and Cost Estimate ("RFICE") will not lead directly to a contract, but will be used by the City in its planning for sufficient funding for the project, and in preparation of a subsequent RFP which the City expects to issue which is expected to be the basis for later contracting. The City, however, reserves the right not to proceed with this project, or to modify its procurement process. The purpose of this document is to provide interested parties with information to enable them to prepare and submit a Response for the provision and implementation of an integrated computer aided dispatch, and mobile data system.

This RFICE is issued on behalf of the City of Philadelphia, Office of Innovation and Technology, which is the sole point of contact for the City during the procurement process.

SCOPE OF THE PROJECT

1.2.1	Project Description
	The purpose of the project is to replace the existing Computer Aided Dispatching System and Mobile Data System in use at the City of Philadelphia Police and Fire Departments with a Commercial Off The Shelf ("COTS") solution. The replacement project shall include the delivery and installation of new hardware, software and system documentation along with training and other implementations services including data conversion. The scope of the project shall include the following, as specified in this RFICE:

	A. Computer Aided Dispatch (CAD) System B. Mobile Data Computer (MDCS) systems C. All associated interfaces and sub-modules D. Required Computer Hardware E. Required Implementation Services F. Required interfaces necessary to maintain support and functionality of existing applications during the implementation of the new systems to minimize disruption to public safety and EMS services. G. Required training
1.2.2	Objective
	The objective of the project is to improve the level of service provided to the citizens of the City of Philadelphia by replacing the existing CAD and MDCS hardware and software with a solution that will provide improved functionality.
DEFINITIONS	
	The following definitions are used throughout the RFICE:
	City means The City of Philadelphia, PA.
	City Agency means Department /Division utilizing the service or product
	Respondent or Vendor means a firm submitting a Response to this RFICE.
	Contractor means Respondent entity awarded a contract pursuant to a later procurement for implementation of this project. No contract will be awarded as a result of a Response to this RFICE. The City reserves the right to issue or not issue a subsequent RFP and subsequent to that award a contract.
CLARIFICATION OF THE SPECIFICATIONS	
	All inquiries concerning this RFICE must be directed to the **persons indicated**

on the cover page of this RFICE Document. (Electronic mail is the preferred method).

Any questions concerning this RFICE must be submitted in writing by mail, fax or e-mail on or before the stated date on the **Calendar of Events** (see Section 0)

Respondents are expected to raise any questions, exceptions, or additions they have concerning the RFICE document as soon as possible in the RFICE process. If a Respondent discovers any significant ambiguity, error, conflict, discrepancy, omission, or other deficiency in this RFICE, the Respondent should immediately notify the contact person of such error and request modification or clarification of the RFICE document.

Respondents are prohibited from communicating directly with any employee of City of Philadelphia, except as described herein. No City employee or representative other than those individuals listed as City contacts in this RFICE is authorized to provide any information or respond to any question or inquiry concerning this RFICE.

ADDENDUMS AND/OR REVISIONS

In the event that it becomes necessary to provide additional clarifying data or information, or to revise any part of this RFICE, revisions/amendments and/or supplements will emailed to all vendors that are emailed a copy of the RFICE. Respondents must acknowledge the receipt / review of any addendum(s) in their response. Each proposal shall stipulate that it is predicated upon the terms and conditions of this RFICE and any supplements or revisions thereof.

CALENDAR OF EVENTS

Listed below are specific and estimated dates and times of actions related to this RFICE. The actions with specific dates must be completed as indicated unless otherwise changed by the City. In the event that the City finds it necessary to change any of the specific dates and times in the calendar of events listed below, each vendor receiving a copy of the RFICE will be emailed the changes.

DATE	EVENT
03/20/2013	Date of issue of the RFICE

03/26/2013	Last day for submitting written inquiries
04/08/2013	Responses due from Respondents

PREPARING AND SUBMITTING A RESPONSE

GENERAL INSTRUCTIONS

	Failure to respond to each of the requirements in the RFICE may be the basis for rejecting a Response.
	Elaborate Responses (e.g. expensive artwork) beyond that sufficient to present a complete and effective Response are not necessary or desired.

PROPRIETARY INFORMATION

This RFICE and the process it describes are proprietary to the City and are for the sole and exclusive benefit of the City. This RFICE is not binding on the City. No other party, including any Respondent to this RFICE or future Respondent to any RFICE that may be issued by the City, is intended to be granted any rights hereunder. Proposals and other materials submitted in response to this RFICE, whether written or verbal and including, without limitation, ideas of Respondents elicited in response to the RFICE, shall become the sole and absolute property of the City upon submission or communication, and the City shall have title thereto and unrestricted use thereof.

The City shall have the right to disclose the Proposals, materials and any ideas to any person or entity including, employees of the City, its consultants and contractors, and authorized agents, as required to carry out this RFP procurement. Any such Proposal, materials, and ideas may be publicly disclosed by the City or any authorized agent of the City, for any reason the City, in its sole discretion, deems appropriate, or pursuant to the Pennsylvania Right To Know Act or other applicable law.

The Respondent acknowledges and agrees that the City and its authorized agents shall have the foregoing right of public disclosure notwithstanding any notice or statement by the Respondent (whether made in the Proposal or otherwise) asserting the confidential or proprietary nature of the Proposal or of any materials submitted or ideas elicited in response to the RFICE.

INCURRING COSTS

The City is not liable for any cost incurred by Respondents in replying to this RFICE.

SUBMITTAL INSTRUCTIONS

Responses must be received by the City Office of Innovation and Technology by the specified time stated on the cover page and to the specified email address. Responses received in response to this solicitation will not be returned to the Respondents.

All Responses must show the following information on the initial page of the Response:

- Respondent's name and address
- Request for Information and Cost Estimate title
- Request for Information and Cost Estimate number
- This Request for Information and Cost Estimate due date

REQUIRED COPIES

Respondents must submit **a single soft copy of the Response in Microsoft Word Format via Email** and the specific Cost Estimate price information in MS Excel format.

RESPONSE ORGANIZATION AND FORMAT

Responses should be organized and presented in the order and by the number assigned in the RFICE. Each response to each section of the RFICE should be preceded by the section number and language of the RFICE and any applicable addenda. Responses must be organized with the following headings and subheadings. Each heading and subheading should be separated by tabs or otherwise clearly marked. The RFICE sections which should be submitted or responded to are:

- Introduction (See Section 1 of this RFICE)
- Response to general requirements (See Section 2 of this RFICE)
- Organizational qualifications

- Staff qualifications and Facilities
- References
- Response to technical requirements (See Sections 5 - 11 of this RFICE)
- Cost (See Section 00 of this RFICE)

REQUIRED RESPONSE FORMAT

A paragraph-by-paragraph response shall be provided indicating compliance with every described requirement, specification and function included in this RFICE. Respondents shall review all of the requirements in the RFICE and respond to each paragraph therein using the following responses:

A. Fully Compliant – The system currently provides the feature or function as described.

B. Partially Compliant – The system provides some portion of the feature or function as described. The Vendor is required to specifically identify those portions of the requirement to which their system is non-compliant.

C. Will Comply with Modification – The system does not currently meet the requirement, but the vendor will provide this capability via a system modification. The pricing for each modification must be included in the proposed price and clearly and specifically identified in the pricing forms. The modification must be installed and available prior to training and acceptance testing.

D. Will Comply in a Future Release – The requested feature or function is not currently provided by the system, but has been specified for inclusion in a future release of the proposed system and will be provided at no additional charge to the City as a function of a valid system support agreement. The Vendor shall identify the date the feature will be released. The vendor will be contractually bound to deliver the feature by the release date.

E. Substitution – The system provides the same capability as the requirement but does so in a different manner. The vendor shall explain in detail how the substitution meets the requirement. It shall be assumed if the substitution response is used that the requirement must and will be fully met.

F. Exception – The system does not meet the requirement.

In paragraphs that primarily describe existing conditions or contain other topics

for which the above described responses are not appropriate, Vendors will use the following responses:

A. Understood – This response will be used to acknowledge that a descriptive paragraph has been read.

B. Accept – This response will be used when terms or conditions are described. The response of accept indicates that the Vendor will accept the item as described.

C. Alternative Offered – This response will be used when terms or conditions are described. The response of "Alternative Offered" indicates that the Vendor will not accept the item as described, but will offer an alternative approach to meeting the condition as described. The vendor will describe in detail the alternative approach that is being offered.

D. Do Not Accept – This response will be used when terms or conditions are described. The response of "Do Not Accept" indicates that the vendor will not accept the term or condition described in the paragraph and does not offer any alternative.

GENERAL RESPONSE REQUIREMENTS

ORGANIZATION CAPABILITIES

Describe the firm's experience and capabilities in providing similar services to those required. Be specific and identify projects of similar size and scope if not greater providing dates and results.

STAFF QUALIFICATIONS

Provide resumes describing the educational and work experiences for each of the key staff who would be assigned to the project. Specifically identify a project manager for this project.

RESPONDENT REFERENCES

Respondents must include in their Response a list of at least three organizations, including points of contact (name, address, and telephone

	number), which can be used as references for work performed. The Respondent must be able to reference at least 3 sites of comparable size and structure as City of Philadelphia utilizing the software that is being proposed. The references should be dispatch centers of a size comparable to City Philadelphia or larger. All of the reference sites must be operational. Additionally the vendor shall list **ALL** sites where they have or are in the process of installing CAD systems using virtual machine technology. Selected organizations may be contacted to determine the quality of work performed and personnel assigned to the project.

TECHNICAL REQUIREMENTS	
GENERAL	
A. Vendors shall address in written form each numbered section and sub-section of this RFICE. If the Vendor takes exception to a specific paragraph, they shall fully describe their exception in the appropriate section of the Response.	
B. At a minimum, the proposed system must include the functions and features specified within the respective sections of the RFICE.	
C. Vendors are encouraged to highlight and describe any functions and features provided by their proposed systems that are not identified in the RFICE. These descriptions and highlights should only include those functions and capabilities that are included in the system proposed to the City.	
D. Elaborate descriptions of separately priced items and/or items not available in the proposed system should not be included in the response to this RFICE.	
E. With the exception of some supervisory functions, it is expected that all functions can be made available to all workstations, provided the operator has been assigned the proper security authorization. However, for convenience, the functions shown in the following subsections are listed under the primary user of the function.	
COMMERCIAL OFF-THE-SHELF SYSTEM	
It is the intention of the City to purchase primarily “off-the-shelf’ or basic CAD and mobile data software functionality, requiring the minimum amount of modifications in order to support necessary functions and interfaces. However, to ensure that the Vendor’s software meets a minimum set of requirements, this section specifies the minimum functions that must be supported by the application software.	

SYSTEM ENVIRONMENT	
The proposed system shall support the following systems or environments:	
A. Time synchronization throughout all systems/servers including CAD/MDT/Database Server	
B. No user will be required to have elevated privileges above normal "user" privileges as defined in Microsoft active directory. No local admin for any element/component of the entire system.	
C. The live operational CAD and Mobile Data System with local redundancy or fault tolerance.	
D. A CAD training environment,	
E. A CAD test environment.	
F. An off-site redundant CAD server environment,	
G. A data warehouse for CAD information,	
H. The mobile data system host and all interfaces.	
OPERATIONAL ENVIRONMENT	
The operational environment will support real-time CAD operations. The data warehouse environment will be used to support all standard and ad hoc query and reporting needs. The separation of the two environments is to facilitate the necessary response in the CAD operational environment.	
A. Vendors shall include all of the hardware, software, services, and ancillary equipment required to make the system's interfaces functional.	

B. The computer system proposed shall be the manufacturer's most recent delivered model. Equipment at the middle or near the end of its life cycle will not be acceptable.	
C. The proposed system shall be directly expandable by adding hardware.	
D. The Vendor shall describe the scalability and expandability, indicating the related costs of the proposed system in terms of processors, main computer memory, disk drives, peripheral devices, and connectivity.	
E. Vendors are required to provide all necessary racks, tables, stands, and other required mounting facilities for the proposed systems, consoles, and communications	
F. Vendors are required to provide information on projected rack power and heat generation (Volt-Amps and BTUs per hour) for each rack.	
SYSTEM ARCHITECTURE	
The Respondents are required to specify the architecture of the CAD//MDC that they are proposing.	
A. Preference will be given to vendors that provide browser based applications in the operational CAD environment.	
B. The system shall provide at a minimum query / read only access to the system via browser based devices.	
C. The vendors will be required to identify the ability of their system to provide query / read only access to their systems via other devices such as smart phones.	

ON-LINE DOCUMENTS	
SYSTEM DOCUMENTATION	
A. The systems shall provide all system documentation online so that any operator can retrieve information on the respective system operation, such as command syntax or field definitions.	
B. This online documentation must be searchable based on topic or keyword search.	
C. Information that references other sections of the documentation shall be linked so the operator can jump to the related area without having to perform another search	
USER DOCUMENTATION	
A. The system shall allow additional documentation to be added by the City.	
B. This documentation may include procedure manuals, notification lists, or user manuals for other systems.	
C. The system shall provide the City with the flexibility to allow searching of the user documentation and linked references similar to the system documentation.	
D. If this requirement is met with the provision of a third party “help” system-authoring tool, the specific tool shall be named in the Response.	
OPERATING SYSTEM	
A. The vendors are required to specify the operating system that is being proposed for each component of the system. The vendor is required to explain the benefits of the OS for each component.	
B. The City prefers that the systems utilize Windows 7 as the client	

operating System.

C. Preference will be given to solutions that are able to function in a virtual environment and support VMware products.

SYSTEM SIZING

The system shall be sized as per the following information:

A. 134 workstations on the operational CAD system,

B. 31 workstations in the training environment,

C. Approximately 3,000,000 incidents per year based on a separate incident for each agency type dispatched on a CFS. (i.e. an accident with injury that required police and fire and ems would is tallied as three incidents.)

D. 15 of daily activity during peak hour loading

E. 5% growth rate per year.

F. Two years of historic information to be converted.

G. 19 administrative workstations.

H. 200 limited access workstations.

I. Retention of all CAD incidents and unit data online for a minimum of 24 months in an operational environment

J. Retention of CAD information for up to 10 years in a CAD data warehouse environment	
SYSTEM AVAILABILITY	
This section defines the requirements that must be met regarding the availability of the systems. It should be noted that the vendor will only be held responsible for those portions of the system that they provide or specify.	
A. The hardware and software components of the back-office system(s) are required to remain fully operational and available at a rate of 99.99%.	
B. The hardware and software components of the system in the field must remain fully operational and available at a rate of 99.99%.	
C. System availability will be expressed as a percentage of the maximum expected availability over a given period. The system must be available 7 days per week, 24 hours per day.	
D. The system will be considered available for use only when all functions (i.e., creating, editing, or searching, etc.) and interfaces necessary for the processing and management of information are operating completely and correctly.	
E. The vendor is required to include an off-site redundant server and storage solution that will be updated in real time and will provide catastrophic backup capabilities in case the main server location becomes inoperable. Failover and fail-back must be automatic. Manual fail-back is not preferred. Mobile support should also have automatic failover or redundant capabilities as well.	
F. The City requires that the system can automatically switch between the CAD servers (e.g., the automated ability to switch between the active and redundant servers and that the system shall not operate differently regardless of the server the system is running on.)	
G. If the vendor chooses to install the testing and training system on the redundant server, it shall not in any way interfere with the failover.	

H. The vendor is required to explain in detail the approach that will be used to maintain synchronization between the database on the operational CAD server and the failover system.	
SYSTEM RESPONSE TIME	
In measuring response time the vendor will not be held accountable for network latency, however preference will be given to vendors whose solution most efficiently utilize the existing network and mobile data infrastructures.	
A. With the transaction volume at peak load, the proposed system shall support all CAD activities with a sub-second response time for of all transactions 95 percent of the time. This includes address verification and map display of an entered address on the Map Display.	
B. While at peak load, no transaction may ever exceed a two second response time.	
C. Response time is defined as the time between the depression of the last keystroke or pointing device activation (e.g., click) and the appearance on the workstation / terminal of the last character of the initial response (e.g., first page, pop-up window, etc.) The vendor is required to describe how their solution meets the above response time and how they intend to measure response time if different than described herein. The City reserves the right to review and approve the methods used to measure response time.	
D. The system, under no circumstances shall experience degradation in response time. Any function proposed that might result in system degradation must be specifically noted.	
E. Response times shall be achievable during all other system activities (e.g., report generation, system backup, etc.)	
F. The vendor is required to state the minimum response times that are guaranteed for field user transactions. Response times shall be	

achievable during all other system activities (e.g., report generation, system backup, etc.).	
G. The vendor is required to provide previous test results for response times in implemented comparable systems.	
H. Latency of networks and systems outside of the scope of this project will not be included when assessing response time.	
I. Vendors shall describe how their solution meets the above response time and how they intend to measure response time if different than described herein.	
J. The City reserves the right to review and approve the methods used to measure response time.	
USER INTERFACE /CLIENT APPLICATION	
A. The vendor is required to specify if the Graphical user interface deployed with their CAD or system is browser-based.	
B. The vendor is required to specify the architecture of the application residing on the workstation.	
C. The vendor is required to specify the process required to modify or upgrade the application operating on the workstation.	
SYSTEM BACKUP AND RESTORATION	
The system shall be required to support standard backup processes or provide the ability to backup and restore system files. The backup processes shall be required to be as automated as possible and shall occur with minimal or no impact on the operation of the system. The vendor shall explain how this process occurs in the proposed system.	

DISASTER RECOVERY	
A. The vendor shall describe the services and support provided by their firm to assist the City in disaster recovery. For the purpose of this paragraph, the vendor shall assume that the City has properly maintained system backups, but has lost utilization of and access to system servers.	
B. The vendor is requested to provide a detailed explanation of their best practice disaster recovery recommendations for these systems.	
REMOTE ACCESS	
A. Remote diagnostic connectivity is required. The vendor will discuss what security measures (hardware and software) will be in place to protect this external access to the systems environment. The City desires the ability to block access until authorization is granted by authorized personnel.	
B. Remote diagnostic connectivity authorization shall be easy to control by administratively authorized City users. The function shall determine if a connection has been terminated and automatically revert it to authorization denied	
SYSTEM STATUS REPORTING	
A. The system shall provide the capability to send messages to the applications or interactive user (or to a system operator) regarding the status of operation and any errors that may have occurred. SNMP alerting shall be required. The vendor is required to explain in detail how their system provides this capability.	
SECURITY	
A. The system shall provide user authentication via a remote directory service.	
B. The system shall support Windows Authentication for Microsoft SQL or ability to run with restricted access to SQL server (i.e. does not require SA authority).	

C. The system shall support SSL communication.	
D. The system shall provide support for industry standard II, Apache or web server hardening.	
E. The CAD system and associated mobile applications shall be encrypted from end-to-end with public safety grade encryption (CJIS). Provided system data security measures shall be compliant with applicable state and federal security standards. State the type of encryption that will be provided.	
F. The vendor shall provide specific information regarding the available security functions and features that are integrated or available within each system of the proposed configuration.	
G. The preferred methodology would include various “security profiles” that would be attributed to individual users or groups based on personnel classifications (i.e., dispatcher, call taker, Supervisor, System Administrator, etc.), allowing access to the various modules, applications, functions, and / or features of the system environment. The system administrators shall have the ability to assign functionality / commands as well as users to security groups.	
H. The system shall provide user access / permissions at application / subsystem level.	
I. The system shall provide user access / permissions at module level.	
J. Appropriate safeguards shall be provided to ensure that only authorized terminals / workstations and authorized users are allowed access to the system environment and stored information.	
K. The system shall provide the ability to restrict access to view.	

L. The system shall provide the ability to restrict access to inquiry.	
M. The system shall provide the ability to restrict access to add / create.	
N. The system shall provide the ability to restrict access to modify / edit.	
O. The system shall provide the ability to restrict access to delete.	
P. The system shall provide the ability to restrict access to print.	
Q. The system shall provide the ability to restrict access to send (e.g., e-mail).	
R. The system shall provide the ability to assign security access by user ID.	
S. The system shall provide workstation / terminal level security.	
T. The system shall provide the ability to automatically log-off workstation based on group profile after period of inactivity, definable by system administrator.	
U. The system shall provide the ability to disable automatic log-off for secured workstations (e.g., dispatch center).	
V. The system shall provide the ability to provide system generated warning message prior to disabling device or user, and extend or reset automatic sign-off timer.	
W. The system shall provide the ability for supervisors to “sign-off” remote workstations.	

X. The system shall provide the ability to remotely disable CAD or MDC applications to reduce ability to attempt unauthorized access in the case of a lost or stolen computer.	
Y. The system shall provide the ability to “lock out” a user after an agency-defined number of attempted logons.	
Z. The system shall provide the ability to create security groups that contain users that share the same security profile.	
AA. The system shall provide the ability to globally restrict access to the operating system.	
BB. The system shall provide the ability to prevent display, viewing and printing of passwords.	
CC. The system shall provide security that combines workstation / terminal level security with User ID and Password security such that certain users can override certain workstation security parameters, and other users are limited to the workstations that they may use. This combination can be used to control the level of system access granted by a System Administrator and the City security policy.	
DD. The system shall provide the ability to require the user to change individual password at sign-on after a system administrator set period of time.	
EE. The system shall provide the ability for the systems administrator to reset password.	
FF. The system shall provide the ability to mask passwords when typed and encrypt passwords when stored and sent.	
GG. The system shall provide the ability to track user sign-on / off times indefinitely for time reporting purposes.	

HH. The system shall provide the ability to create a set of password rules that restrict the use of common passwords, easy to guess passwords, and other common utilities such as password aging, and limiting reuse of passwords.	
II. System must provide a minimum of 128-bit encryption or more as required by the State.	
JJ. The Administrator shall be able to configure multiple security levels on a field-by-field basis for the user database.	
KK. Information stored in the user database shall be searchable by any field, however only data administratively authorized for viewing by the users security level will be displayed.	
LL. The system shall be capable of utilizing biometric identification to control system access and log on.	
MM. The system shall provide the capability for individual users to change their name and the system shall maintain a link between the previous name and new name.	
SINGLE SIGN-ON	
A. Each workstation operator shall log on before being recognized by the system.	
B. The logon identification of the operator shall be validated by the system(s) before that operator can perform system functions.	
C. The logon identification (including the workstation ID) will become part of the CAD record for all transactions performed by that operator.	
D. The logon process shall incorporate a “single sign on” to enable logons to multiple authorized systems and interfaces, unless restricted by individual system security.	

E. The single sign-on password must comply with the Commonwealth Law Enforcement Assistance Network (CLEAN) log on requirements.	
F. The System Administrator shall have the capability to configure sign-on messages for subsequent shifts and specific individuals. This screen could include recent BOLO's, pass along information or assignments for the specific officer logging in. Upon configuration the system would build the specific messages.	
G. The system shall provide the capability for the delivery of personalized log on messages personalized to the individual user.	
RIGHT TO ACQUIRE ELSEWHERE	
Although the vendor is requested to propose all necessary hardware and software to ensure system operations in compliance with the RFICE, the City reserves the right to purchase equivalent hardware, equipment or system software from other sources if it is in the best interest of the City. The procurement of the hardware from an alternative source shall not mitigate or reduce the vendor's responsibility to satisfy the capacity, availability and response time requirements of this document if the hardware procured by the City is equivalent to the hardware specified by the vendor.	
VIRTUAL MACHINES	
The City desires Responses that are fully functional with virtual machines. Additional consideration will be given to vendors that have installed comparably configured systems operating in a virtual environment. All servers must operate in a Virtual Machine environment with the exception of the database server which may be Windows 2008 installed on a physical server.	
CITY SYSTEM STANDARDS	
The following are the existing City information technology standards. Vendors are to propose systems utilizing these standards. If the vendor chooses to deviate from these standards, an explanation as to how the	

deviation will benefit the City is required.	
A. Virtual Machine Software– VMware vSphere 4.1 or later	
B. Servers operating System – Windows 2008 or later	
C. Clients – Windows 7 or later	
D. Database – Microsoft SQL Server 2008 or later	
E. Network Topology – TCP/IP version 4 but with the capability to upgrade to TCP/IP version 6 running over an Ethernet backbone	
F. Servers Hardware – HP or Dell Server blades.	
G. Client Workstations – HP or Dell	
WORKSTATIONS	
A. CAD Operational Workstations	
1. The client workstations for the Communications Center and the Training Center shall include a minimum of four (4) 19" monitors.	
B. Other workstations	
1. The vendor shall specify workstation configurations as needed to support operations for the proposed systems.	

PRINTER REQUIREMENTS	
A. The Vendor shall configure the new system to print to existing TCP/IP printers in the Communications Center, Records, remote dispatch, administration and remote Fire and Police District Stations.	
B. The Response shall include minimum printer specifications for the proposed system.	
STORAGE SYSTEMS	
A. The vendor shall propose a Storage Area Network sized to support the system as described in this document.	
B. The system should be configured to support the required levels of system availability described in the RFICE.	
C. The Vendor shall provide any external array chassis required for the SAN.	
D. Any additional software required for the SAN is to be specified and provided by the Vendor.	
SYSTEM BACKUP AND RESTORATION CAPABILITY	
A. The Vendor shall identify and provide any necessary equipment (hardware and software) to allow for required backups and restoration of system applications and user information.	
B. The Vendor will fully explain how the backups and restoration are accomplished and what effects these operations have on the production CAD and MDCS	
C. Systems that require the CAD or MDCS system to be removed from service or placed into a degraded mode of operation for routine backups will not be acceptable.	

D. Vendors will indicate the amount of automation available for the routine backups, the amount of time that routine or daily backups will require, and the amount of user intervention that will be required to accomplish this daily systems maintenance activity.	
E. The Vendor shall explain any additional routine software maintenance that is required to keep the system optimized.	
BACKUP FACILITY	
A. The Vendor shall configure the server located at a remote location to act as a backup CAD server. The remote location will be on the City's intranet.	
B. Responses shall include recommended backup procedures and LAN/WAN connectivity requirements.	
C. The vendor shall explain in detail the CAD failover scenario to the remote back-up facility.	
SOFTWARE AND UPGRADES	
A. All software applications supplied shall be of the latest production version in current release unless otherwise specifically requested and authorized by the City.	
B. The provision of "BETA" or other "work-in-progress" software applications is not acceptable unless specifically requested and authorized by the City.	
C. The Vendor shall provide the necessary methodology to allow operating system and application software upgrades to be easily loaded onto the system.	
D. Vendors shall describe how they propose to provide software upgrades.	

CAD REQUIREMENTS	
COMMERCIAL OFF-THE-SHELF SYSTEM	
It is the intention of the City to purchase primarily "off-the-shelf' or basic CAD software functionality, requiring the minimum amount of modifications in order to support necessary functions and interfaces. However, to ensure that the Vendor's software meets a minimum set of requirements, this section specifies the minimum functions that must be supported by the CAD software.	
TAILORED SYSTEM	
The selected Vendor must tailor the CAD system to fit the requirements of the City. This will be accomplished through either minor customization of the CAD system software or, primarily, through adjustments in:	
A. File layout,	
B. Configuration tables,	
C. Screen presentation formats, and	
D. Field sizes.	
The costs associated with any required customizations shall be included in the Response. The City will not reimburse the Vendor that may be selected for a contract pursuant to a subsequent RFP (the "Selected Vendor") for any system tailoring/customization efforts beyond the amounts specified in the Selected Vendor's contract.	

GENERAL FUNCTIONAL REQUIREMENTS	
The proposed software shall be capable of supporting incident intake, resource recommendations, dispatching, unit status, and management reporting for Law Enforcement, Fire, and EMS, and provide the following functions and features, at a minimum.	
FUNCTIONAL WORKSTATION TYPES	
The vendor's proposed system shall accommodate the following types of CAD functional workstations. The vendor shall explain any exceptions or additional types that are provided.	
FULL CAD WORKSTATIONS	
These workstations will be utilized for dispatching, call taking and dispatch supervision. These workstations may also be deployed in the test and training environments, backup sites, partner PSAPs and/or remote dispatch locations	
CAD ADMINISTRATIVE WORKSTATIONS	
These workstations will be used to perform administrative functions in CAD such as performing file maintenance. They will also be using the ad hoc query tool in CAD to write reports and generate statistics. They will not be heavy users of the operational component of CAD but they will have access to the CAD system.	
LIMITED ACCESS CAD WORKSTATIONS	
A. These terminals will be located at remote locations such as fire stations or police facilities. They will be interactive with the CAD to perform specific functions such as system rostering, and querying the system for call times.	
B. It is highly desired that these workstations have some form of status display to show the status of calls and units throughout the jurisdiction.	

C. It is highly desired that these workstations will have access to the CAD map to view the location of incidents and units.	
D. It is expected the user interface for these workstations is browser based and that they will be able to connect to the CAD system via Internet over a Virtual Private Network	
SYSTEM ADMINISTRATION WORKSTATIONS	
These workstations will have full access and administrative rights to the CAD system for all administration.	
BASIC FEATURES	
MULTIPLE CONFIGURATIONS	
A. The software shall support dedicated call taker positions.	
B. The software shall support dedicated dispatcher positions.	
C. The software shall support combined call taker and dispatcher positions	
D. The software shall support the capability to easily convert any position from one format (call taker, dispatcher, combined) to another.	
MULTIPLE AGENCY TYPES	
The CAD system shall be capable of supporting multiple agency types including:	
A. Police Departments	

B. Fire Departments	
C. Emergency Medical Services.	
D. The capabilities and attributes of each agency will be table defined,	
MULTIPLE RECOMMENDATION CAPABILITIES	
As detailed later in this document the CAD system shall have the capability to recommend units to respond to a call for service using multiple approaches including:	
A. Shortest travel time based upon AVL or in the case of fire units station location,	
B. Shortest travel time for fire units shall have the capability to assess time penalties based upon the status and condition of an apparatus and use these time penalties in calculating the unit to recommend	
C. Shortest travel distance based upon AVL or in the case of fire units, station location	
D. Geographic based response	
E. Multiple equipment / Unit capabilities	
F. Multiple operator or assigned personnel capabilities	
WINDOWS	
A. All CAD workstations shall have multiple windows available.	

B. Standard Windows type functionality is desired for all CAD applications (e.g., dialog boxes, point-and-click, and drag-and-drop).	
C. Switching from one window to another shall not affect any information entered in any displayed window.	
D. Nothing should be able to cover critical information windows at particular workstations such as pending incidents at dispatch workstation.	
FUNCTION KEYS	
A. In addition to the windows standard functionality (dialog boxes, etc.), the CAD applications shall make use of programmable function keys for all frequent operations.	
B. These function keys shall be programmable by the system administrator.	
C. The Vendor shall explain the operation of all function keys provided and the degree to which they are system administrator programmable.	
COMMAND LINE	
A. The CAD application must provide a command line mode with multiple command lines.	
B. The commands utilized in the command line should be able to be aliased. (i.e. the command in the Respondent's system that designates arrival on scene is AR, but can be aliased to also be OS).	
C. The system administrator shall have the ability to create or define alias commands	

D. The system should provide the capability to define a set of commands that are multiple commands executed by the entry of a single command.	
E. All functions that are capable of being performed via other functionality shall be accommodated via the command line. Standard windows menu processing alt letter is not sufficient.	
F. Responses shall list the set of system functions accessible via the command line mode and explain the operation of the command line mode in the proposed CAD system.	
WINDOWS FUNCTIONALITY	
A. Along with command line and function key capabilities the CAD system shall support interaction with the system via all other "normal" windows functionality such as drag-and-drop, pop-up menus, drop-down menus, cut and paste, undo, etc.,	
B. Menus or drop down dialog boxes may be provided to select the various functions that are available in the CAD applications program.	
C. Comprehensive security shall control what functions are available to each user.	
D. Only those functions that are allowed by security shall be displayed, except when using Windows drop-down dialog boxes, where the features not available shall be grayed out.	
E. The Vendor shall explain how the menus work in relation to provided security features.	
SPECIAL ACCOMMODATION	
A. The CAD graphical user interface shall support varying screen resolutions and font/icon sizes.	

B. The system shall also support special keyboards for visually impaired users.	
C. The vendor shall describe how their system accommodates communicators with visual impairment and color blindness.	
TABLE DRIVEN	
A. The software design should make extensive use of table driven parameters, allowing easy modification by the system administrator without the requirement for programmer support.	
B. These modifications should be able to be made while the system is active without any impact upon CAD operations or without having to restart system for changes to take effect.	
C. The system at a minimum shall support the following tables:	
1. Agencies	
2. BOLOs, including location, person, and vehicle	
3. Clearance/disposition codes	
4. Hazards	
5. Hydrants	
6. Incident/event types	

7. Fire Stations	
8. Memos	
9. Messages (e.g. canned, scheduled)	
10. Notifications	
11. Personnel	
12. Rosters	
13. Run cards/response plans	
14. Service types (i.e. law enforcement, fire, EMS)	
15. Skills (personnel)	
16. SOPs	
17. Units	
18. Unit attributes (e.g. ALS, BLS, Hurst tool)	
19. Unit statuses (i.e. dispatched, en route, arrived, cleared)	

20. Unit Types (e.g. i.e. patrol car, motorcycle, engine, ladder, pumper)	
21. Vehicles	
PRINTING	
Any information displayed on a CAD workstation shall be able to be printed on a designated shared printer, a locally attached printer, and "routed" (sent) to other workstations or printers at any time.	
SYSTEM BACK-UP	
A. Backup of the CAD files and user data/information shall be able to be accomplished without taking CAD out of service and with negligible impact upon CAD operations.	
B. Vendors shall explain the backup methodology used and the degree of automation as well as the anticipated duration of a routine backup. Acceptance testing will include maximum loading during the backup procedure.	
TRAINING COMPONENT	
A. In addition to the test environment, the CAD system must support a training component, which will allow new personnel to be trained on the system without impacting operations on the "live" environment.	
B. The training environment shall exactly resemble the live CAD operation.	
C. Vendors shall explain how this functionality is provided and if the proposed system incorporates the ability to create "training scripts" for CAD simulations.	

D. Self-guided tutorials are highly desired by the City.	
TEST ENVIRONMENT	
A. In addition to the training environment, the system shall support a test environment where new files or configurations can be loaded and tested prior to placing in a live environment.	
B. The simulated test environment shall exactly resemble the live CAD operation.	
C. Once files have been tested in the test environment these files shall be easily loaded from the test environment to the live environment without having to re-key them in.	
REMOTE ACCESS	
A. A remote access facility shall allow personnel with the proper security level to access the CAD system and obtain current and historical information relating to incidents and unit status,	
B. A remote access facility shall allow personnel with the proper security level to access the CAD system and perform system maintenance, diagnosis, or repair as required.	
C. An audit trail of remote access activity such as login, logout, account, transactions and if IP is available IP address should be captured to the system log file.	
UTILITY PROGRAMS	
A. A library of utility programs shall be supplied to maintain the CAD systems resource, configuration, and information files.	
B. These programs shall be accessed through menus or similar operation and shall be security controlled.	

C. Integrated “help” functionality for these configuration routines is highly desired.	
D. These utility programs will support manual, scheduled and batchable changes to the system resources, configuration and information files.	
DELAYED ENTRY	
A. The system shall allow with proper security, the delayed entry of incidents, with a capability of entering reported time, not current computer time, into all time fields.	
B. Any entry of information subsequent to the entry of the original incident shall include the date, time, and ID of the person entering the information, and that the information was manually entered.	
C. Vendors shall identify how this is accomplished and any restrictions such as timeline sequence that has to be followed.	
ADDRESS STRUCTURE	
A. The system at a minimum shall support all address formats as described in USPS Publication 28.	
B. The vendor shall indicate that they have reviewed USPS Publication 28.	
C. The vendor shall specifically identify any address formats included in USPS Publication 28 that their system CANNOT support.	
D. In addition to the formats identified in USPS Publication 28 the CAD system shall at a minimum accommodate a three tiered address structure that includes:	
1. The street address (i.e. 200 S. Main St.),	

2. A building name or number (i.e. 200 S Main St, Building 3 or 200 S. Main St., Wilson Hall) within the address,	
3. A unit number within the building (i.e. 200 S. Main St, Building 3, Suite 205).	
E. The address structure will accommodate multiple buildings at a single street address such as a business park or apartment complex with a single street address	
F. It is desired that the above referenced address structure also include a fourth tier that would include the floor number of the suite. (i.e. 200 S Main St., Building 3, 2nd Floor, room 205).	
G. The CAD system shall have the ability to validate an address to the "lowest" level of the address.	
H. The CAD system shall have the ability to recognize street types and directions as street name. (i.e. "Old HY 31", "St Peters Rd" "West Rd".	
AUTOMATIC DATABASE QUERIES	
A. CAD shall have the ability to automatically run a database query upon entry of City-specified data (i.e., vehicle tag number, person name, etc.).	
B. The returns from all queries that are automatically generated shall be included in the incident record.	
C. The system shall be capable of automatically querying CLEAN and NCIC.	
D. The system shall have the capability to automatically cascade additional queries based upon a prior return. (i.e. if a plate is	

entered and vehicle registration is returned the system will automatically query the owner's information for warrants)	
E. The system shall provide capability to identify certain responses such as hits and visually and audibly alert the user upon query hit.	
F. Vendors shall explain to what extent their proposed systems differentiate between hits and near-hits. (A near hit is a hit response that is not the individual that was queried such as same name and DOB, but is obviously not the person queried.)	
G. The City's system administrator shall be able to define the alerting mechanism.	
H. The City desires that the CAD system be capable of automatically querying the RMS database for information. This is an **extremely important** requirement and the vendor shall explain in detail how the City might be able to structure the automatic queries from CAD after the installation is complete.	
SYSTEM HISTORY LOG / AUDIT LOG	
A. The CAD system shall maintain a reportable searchable log file including all operational transactions.	
B. The CAD system shall maintain a reportable searchable log file including all maintenance and system administration transactions.	
C. All transactions that occur on the CAD shall be written to the reportable, searchable audit log file, including the date and time of the transaction, The user ID Of the transaction and the workstation ID of the transaction,	
D. If the transaction that is logged is a change or a delete, the information that was changed or deleted shall be stored in the audit log file.	

LOG ON REQUIRED	
A. Each workstation operator shall log on before being recognized by the system.	
B. The logon identification of the operator shall be validated by the system(s) before that operator can perform system functions.	
C. An operator cannot be logged on to more than one terminal at a time.	
D. The logon identification (including the workstation ID) will become part of the CAD incident record for all incidents created or dispatched by that operator.	
E. The system shall store the date, time, workstation ID, and user ID associated with unsuccessful sign-on attempts in the audit file.	
LOG OFF	
A. CAD shall have the ability to quickly log off an operator and log on a new operator, without the need to exit from CAD and without the need to re-start the program. This will facilitate shift change and relief for breaks.	
B. CAD shall prohibit a dispatcher from logging off if the dispatcher is the only dispatcher controlling or viewing specific units or dispatch areas. (i.e. if the dispatcher is the only dispatcher controlling a set of units or coverage area the system will prohibit log off)	
C. The time and date, along with the ID of the operator logging off and the ID of the operator logging on, shall be recorded in a system history log file.	
D. The system shall provide tools for searching the system history files to easily locate information such as users, date and time ranges, terminal, etc.	

CAD SCREEN LAYOUTS	
A. CAD screen layouts will differ between Police, Fire, EMS, and admin users.	
B. Screen layouts shall be configured by user logon and the function they are to perform. (i.e. an individual's screen configuration will be different if they are logging on to perform fire dispatch functions than if they are logging in to perform law enforcement dispatch than if they are logging on to perform call taking functions)	
C. At logon, CAD will present the user with the previously configured screen layout for the function they are to be performing.	
NARRATIVE FIELD "SHORTHAND" / AUTO TEXT	
A. The system shall provide the ability to recognize character patterns and automatically fill in expanded text.	
B. The system shall expand (automatically) the shorthand into a full description and save it into the narrative.	
C. The system shall allow the agency to add agency-specific shorthand terms and their expansions.	
SNAPSHOT / INCIDENT REPLAY	
The system shall include functionality to provide a detailed, system-wide snapshot report and/or graphic display of the system status to include all units and events, based on a user-specified date, and time and an incident replay, based on a user-specified date and time, specific incidents, or other CAD events.	

INCIDENT RECEIPT/CALL TAKING FUNCTIONS	
INCIDENT CREATION	
Upon receipt of a call for service, the application software shall allow for the capture, validation, display and maintenance of all of the following incident information:	
INCIDENT TYPE	
A. The incident type must be table defined.	
B. The system shall be site configurable so the system will utilize an incident type code with an accompanying translation table that translates the type code into a plain speech entry.	
C. The software must provide an online help function for valid incident types.	
D. If the operator enters an incorrect or a partial incident type, the system shall display a list of valid incident types.	
E. The user shall be able to select the correct incident type from that list.	
F. The selected incident type must then be filled in by the system in the call for service screen.	
G. Once the incident type has been validated, the system shall also automatically display any related procedures or instructions related to this incident type.	
H. Changes to Incident type table values will maintain a reference to previous values for historical reporting. (i.e. 57D8 Explosion Large Fuel/Fire Load Vehicle changes to 57D9 and 57D9 Explosion Mobile Home, House Trailer, Portable Office changes to 57D10, the Incident history should show a 57D8 as a 57D9.)	

I. The software must support up to 20 digit incident types using alpha and/or combined numeric characters.	
J. The software must support incident types that will automatically generate incidents for dispatch to multiple agencies (such as and injury accident creates both a police incident and an EMS incident).	
K. The system shall provide the capability to associate Standard Operating Procedures with an incident type and will notify the operator of the SOP anytime the incident is utilized.	
INCIDENT LOCATION	
The system must capture, display and process the incident location as follows:	
A. Incident location including street address, building number, apartment/suite/lot number, directional, development and street type.	
B. There must be sufficient room for free format locations (e.g., behind the red barn).	
C. All incident locations, whether obtained from the E9-1-1 controller or entered directly by the operator for administrative line (seven-digit) calls, must be validated against the system's geofile	
D. Following verification the system will display:	
1. Cross streets,	
2. Response areas,	
3. Map page and coordinates,	

4. Official street names,	
5. Municipality	
6. Responsible agencies (Police, Fire and EMS)	
7. Zip code,	
8. X, Y coordinates (lat and long)	
E. The City requires that if the caller's location and the incident location are different they are displayed as separate icons on the associated Integrated Map Display.	
F. In the event a location cannot be properly validated against the geofile, the system must allow for the manual processing of the incident and notify the dispatcher or supervisor of the special address.	
G. The system shall produce a report of all incident entries that did not validate.	
H. All E9-1-1 ANI/ALI information including comment fields must be captured.	
I. All original E9-1-1 ANI/ALI information shall be saved and made part of the incident record even if the user changes the original E9-1-1 ANI/ALI information (e.g., the incident is not at the caller's location), or a rebid occurs on a wireless 9-1-1 call.)	
The entry of locations shall be non-restrictive and allow entry of:	
J. Street addresses as described in Address Structure Section 0.	

K. Common place names.	
L. Alias names, including spelled or abbreviated directionals.	
M. Intersections.	
N. Landmarks.	
O. Mile posts/markers and direction (i.e., MP# 109 northbound), including decimals.	
P. On and off ramp exit / entrance numbers, direction of travel and distance to/from (e.g., Northbound I-35, two miles from exit #109).	
Q. Under / Over pass names,	
R. Direction of travel and proximity (e.g., Northbound I-35, one mile south of Robinson St. overpass).	
S. Coordinate address (Latitude and Longitude)	
T. Military building numbers	
INCIDENT LOCATION / CALL CREATION VIA THE INTEGRATED MAP DISPLAY (IMD)	
The system shall provide the capability to initiate the creation of a call via a map function. Ideally the process would allow the operator to initiate the call by right clicking on the location of the call on the map, and from the right click drop down selecting “create call here”. Following the right click	

the system would open the call creation window with the address filled in and verified with the cursor placed in the call type field. The vendor is requested to describe the capability of their system to meet this scenario.	
OTHER INFORMATION	
The system shall also capture, display and maintain the following information. Ideally the information will be maintained in separate fields defined for that purpose. Storing the information in a comment field is not compliant.	
A. Incident priority (table-defined based on entered incident type).	
B. The software shall allow the call taker to override the table-defined priority value and enter a different priority level.	
C. All priority overrides shall be recorded in the incident history and available for reporting.	
D. Indication if the event is “in-progress”, has “just occurred”, or “previously occurred.” The default shall be set by the incident type, but modifiable by the dispatcher or call taker.	
E. Caller’s name.	
F. Caller’s address (not validated).	
G. Caller’s telephone number (ten digits plus extension or special instructions).	
H. Victim’s name.	
I. Victim’s address (not validated).	

J. Victim's telephone number (ten digits plus extension or special instructions).	
K. Call narrative/comments.	
L. Suspect(s) description(s).	
M. Vehicle(s) description(s).	
N. Type of area (residential, commercial, etc.).	
O. Identify source of call origination [i.e., ("T") telephone, (9) 9-1-1 system, ("R") Radio, etc.).	
P. A flag to identify that the caller does not want to be contacted.	
Q. A flag to identify a child caller.	
R. A flag to identify a caller who has requested anonymity that will conceal the caller's identity unless retrieved by an authorized person. Release for public records should not include the caller's anonymous information.	
PROCESSING	
A. The software shall allow the call taker to capture the caller's information in any order determined by the local administrator.	
B. The call taker shall be able to move around the input screen by tabbing, by point and click device and arrow keys.	

C. The call entry screen shall be consistent for all user types (call taker, dispatcher, supervisor, etc.). This includes the operation of function key and menus.	
D. Once a call has a validated incident type and address, the call must be available to dispatch.	
E. After a call has been made available for dispatch, it must continue to be available for additional data entry and updates.	
USER DEFINABLE LAYOUT/FIELDS	
A. The layout of the call entry screen shall be user definable.	
B. The system manager shall be able to locate, add, delete, and/or modify any entry fields on the screen.	
C. If this is not possible, the Vendor shall discuss any limitation to the customization of the entry screen.	
D. If the call entry screen is not customizable, Vendors shall include a “picture” or “screen shot” of the proposed screen in the Response documentation for the system.	
MULTIPLE INCIDENT PROCESSING	
A. The CAD system shall provide the capability for a workstation to process multiple incidents.	
B. If a call is in progress when another call is received, the call taker shall be able to retrieve a new call entry screen for the second call without losing the information already entered for the first call. Multiple call entry windows should be able to be opened at any given time. If a call is left open with no activity for a predetermined amount of time then audible and/or visual notification should be given. This notification should be controlled by a timer that is set by	

the administrator.	
C. Other authorized persons at other workstations shall be able to retrieve and complete a saved call.	
D. The system shall notify the call taker/dispatcher that the original call(s) still require processing. Vendors shall describe the method in which their system supports this capability.	
E. Call takers will not be allowed to log out before all call entry screens are cleared.	
E9-1-1 INTERFACE	
A. The CAD system shall be capable of interfacing to the City's Existing Cassidian Communications Vesta System	
B. The E9-1-1 controller will provide ANI/ALI information to the CAD system.	
C. Calling line identification (Caller ID) will also be made available.	
AUTOMATIC FILL	
The corresponding ANI/ALI information shall, upon issuing a command, or upon call answer as determined by local administration, fill in the CAD call screen with the following information, at a minimum:	
A. Location of calling telephone (address for landline, X-Y and tower site address for wireless.)	
B. Apartment, suite number, and other location information (Vendor to define other location fields from ANI/ALI that will be automatically filled.)	
C. The telephone numbers; both main and pilot.	

D. The subscriber's name.	
E. Comments from the ALI screen.	
F. Emergency Service Number (ESN)	
G. English Language Translation (ELT) of ESN	
PROCESSING	
A. If the location of the telephone is the desired emergency location, a single keystroke shall accept the location and validate it within the CAD geofile.	
B. If the ALI location is not the incident location, the workstation user shall be able to input the correct location.	
C. ANI/ALI data shall be displayed on the CAD workstation before the call taker speaks to the caller.	
D. Caller location shall be displayed as an icon on the Integrated Map Display.	
REBIDS	
The vendor shall explain how the proposed system interface handles rebids of 9-1-1 data.	
PLACING 9-1-1 CALLS ON HOLD	
A. The system shall provide the capability for the call taker to put a 9-1-1 or other call on hold to process another call as described in	

Incident Creation Section 0.	
B. The fact that the call is on hold shall be displayed to all call taker workstations including a telephone line identifier.	
C. Any call taker will be able to pick up the call and have the partially completed call entry screen displayed on their workstation.	
D. Vendors shall explain how their systems accomplish this.	
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RETENTION OF 9-1-1 INFORMATION	
A. The E9-1-1 information shall be retained in the call for service history.	
B. If there are multiple 9-1-1 calls for a single incident, the CAD system shall provide the capability to capture and retain information from all calls associated with an incident.	
WIRELESS 9-1-1	
A. For Phase 1 wireless calls, the system shall identify the tower ID and coordinate data.	
B. For Phase 1 wireless calls the system shall identify the directional tower face and orientation in degrees.	
C. For Phase 1 wireless calls, the system shall identify the street address and community of the tower site.	
D. For Phase 2 wireless calls, the system shall display and capture the coordinate data provided	
E. For Phase 2 wireless calls the system shall convert the coordinate data to a valid street address and record this information.	

F. The vendor shall explain in detail the method used to convert the Phase 2 wireless coordinate data to a valid street address.	
TEN-DIGIT CALLS FOR SERVICE	
The CAD system shall provide a mechanism for entering calls for service received on the Communication Center's administrative telephone system. The Response shall include a procedure for entering a ten-digit call for service.	
LOCATION VALIDATION/GEOFILE LOOK-UPS	
Upon entry of the incident location, the CAD application software shall provide a look-up to the geographic database (geofile) to validate the location of the incident. This process shall facilitate validation of the incident's location.	
A. The system must assist the user in validating partial, incomplete, or inaccurate locations.	
B. The CAD shall utilize a "soundex", "metaphone", and/or other appropriate look-up aids for street names, intersections, commonplace names, landmarks, or street or highway route numbers. (Windows type ahead is not soundex or a metaphone).	
C. The CAD system may also in addition to soundex utilize other appropriate look-up aids such as type ahead.	
1. If type ahead is utilized, the system shall only display as possible matches those streets on which the numeric address that has been entered is a valid address. (i.e. if the initial entry is 175 S. MA -- the type ahead drop down would not show S. Main St, unless 175 was a valid address on S. Main St.)	
D. A list of possibilities should be displayed when a partial spelling or misspelling of a street name is entered.	
E. The system must allow the user to cancel out of the soundex, metaphone function without making a selection.	

F. The location/geofile must support multiple “aliases” for”	
1. Street names,	
2. Intersections,	
3. Commonplace names,	
4. Landmarks, and	
5. Street or highway route numbers.	
G. If CAD is unable to provide an exact location match, a list of all potential matches based on available look-up aids shall be displayed to the user.	
H. The call taker shall be able to select the correct location from the displayed list, and scroll forward or backward for other potential locations,	
I. The call taker must also have the ability to restart the location look-up with a new location.	
J. Responses shall describe the tools available in the system for assisting users to validate addresses and other locations. Soundex, metaphone, use of the Integrated Map Display and other techniques are especially desirable from the City’s perspective.	
K. Once a location is validated the system shall assign an X, Y coordinate value to the location.	

L. Once the address is validated, the system must identify using the X, Y coordinate:	
1. The appropriate Police Fire and EMS district, sector, reporting area,	
2. Any other geographic boundaries containing the address	
M. Cross-streets on both sides of an address shall be displayed. Vendors shall describe how dead-ends or other locations without two cross streets are displayed.	
N. The incident location shall be displayed in the center of the associated Integrated Map Display zoomed to a readable level automatically after the address is validated. Vendors shall describe how the map display will function with both densely and less-densely addressed areas.	
O. All information returned for validated locations shall become a part of the incident record and displayed/available to subsequent system users reviewing the incident record.	
P. If the validated address is for a multi-unit location the system must prompt the call taker to request additional information regarding the building, apartment, suite or lot number.	
Q. If the validated address is also a common place the call taker shall be so advised.	
R. All geographically sensitive hazards, dispatch policies, and other system functions shall stem from validated locations.	
S. The operator shall be able to complete the location look-up immediately upon entry, or at any time during the incident entry process.	
T. The system shall allow for a street name to be entered without a block range and/or city and return all possible ranges with City and	

location to be used to query the caller as to which is the correct choice.	
U. The CAD application should provide a feature to perform location validations / geofile lookups exclusive of the incident creation process.	
COMMON PLACE NAMES	
A. The CAD application shall allow the user to enter a location as a common place, or business name, i.e., City Complex.	
B. The CAD shall automatically connect the common place name with an exact address.	
C. If more than one location has the same common place name (i.e., McDonalds), the CAD shall display a list of all locations with the same name with additional identifying information.	
D. The user shall be able to select the correct location from that list by using the keyboard or a point-and-click device.	
E. If the operator enters a street address that is associated with a common place the system shall notify the operator that the entered address is a common place.	
F. If the operator enters a common place that is a multi-unit address, the operator shall be instructed by the system to request additional information regarding the building, suite or apartment number. (i.e. entry of XYZ Office Park, the system should advise the operator to ask for additional information about building, floor or suite and then allow field level entry of this information.)	
G. If the common place is a multi-unit structure with common places names associated with the sub units the system shall display a list of additional common-places that the operator may choose from. (i.e. XYZ Shopping Mall, the system should display other common place names within the mall such as the names of the stores)	

H. The system shall permit the entry of multiple common place names for the same street address.	
ALIAS STREET NAMES	
A. The CAD shall provide an alias-street name capability to accommodate multiple street names or abbreviations for the same street (i.e., 12th Ave NE and US Hwy 77.).	
B. If the user enters an alias street name, the CAD shall automatically translate the alias name to the correct street name.	
C. If several variations of the same name exist, the CAD shall display a list of all possible street name variations.	
D. The user shall be able to select the correct location from that list by using the keyboard or a point-and-click device.	
E. The ability to alias common place names shall exist in the system.	
F. The system shall permit the use of alias names when entering intersections.	
INTERSECTIONS	
A. The CAD shall provide the capability to enter and use intersections as a location.	
B. This feature must allow for multiple intersections of the same streets.	
C. If multiple intersections with the same streets occur, the system shall display them in a pick list with additional clarifying information such as block number or municipality.	

D. The call taker shall be able to enter partial street names on both intersecting streets.	
E. The operator shall be able to enter alias street names into the intersections and the system shall convert the alias names to the correct street names.	
F. The system shall permit a street to intersect itself.	
G. The system shall permit the intersecting streets to be entered in either order.	
1. For the sake of determining prior calls or potential duplicate calls the system shall treat the intersection as a single location regardless of the order in which the streets are entered.	
H. The CAD shall permit the operator to enter the name of one street and the system will display a pick list of all other streets that intersect.	
1. It is desired the operator be provided the ability to sort the list of intersecting streets in geographical order (N to S and S to N or E to W and W to E).	
2. It is desired the operator be provided the ability to sort the list of intersecting streets in alphabetical order.	
3. If in the list the street is intersected by the same street multiple times, each instance of the intersection shall be displayed in the geographically sorted pick list.	
I. The system shall accommodate intersections where more than two streets meet.	

MILE MARKERS & OTHER LIMITED ACCESS HIGHWAY LOCATIONS	
A. The proposed CAD system must provide an optimized method for locating incidents along Limited Access Highways.	
B. These locations shall include:	
1. Mile markers including decimals	
2. Exits,	
3. Distance and direction (2 miles north of ….)	
4. Common place names.	
5. Vendors shall describe the methods employed by their proposed systems for entering these types of locations.	
BODIES OF WATER	
A. The system shall have the capability to search for locations on rivers, lakes and other waterways.	
B. The system shall be able to identify locations based on bearing and distance from a known location, (800 yards South of Pier 100)	
RAILROADS AND TRAILS	
A. The system shall have the capability to search for locations on railroads and trails. These locations shall include mile or kilometer markers, crossings, and common place names.	
B. The system shall be able to identify and validate the intersection of railroads, trails and streets as a valid location for dispatch. (creating a common place to identify the location is not acceptable)	

LOCATION / PREMISE INFORMATION	
LOCATION / PREMISE INFORMATION PROCESSING	
The term “location / premise information” is used to identify any information that might be associated with a location or premise. It includes all items but is not limited to Section 0 Location/Premise Information Types.	
A. The CAD system shall provide the capability to associate or attach location / premise information to each level of the address structure described in Section 0, Address Structure.	
B. The CAD system shall also provide the capability to associate premise / location information to:	
1. Street Segments,	
2. Neighborhoods and Subdivisions,	
3. Jurisdictions	
4. Any other geographic feature or polygon (i.e. waterway, site defined boundary, governmental boundary, etc.)	
C. During incident processing, CAD shall alert operators of any existing premise / location information and display the information with minimal user effort (i.e., mouse click on site file alert icon).	
D. At any time during the life of an active incident, the users shall be able to quickly display the advisory information for that particular incident.	
E. The CAD system shall provide the capability to easily distinguish the type of premise information available without having to display the information.	

F. The CAD system shall have the ability to purge/delete any premise information that has not been updated for a site configured period of time.	
G. Before a purge / delete occurs, the system shall notify the system administrator 30 days in advance to check if the information should be updated or deleted. Vendors should also discuss the ability of alerting the agency owner of the information instead of the system administrator before the information is purged.	
H. A utility for updating/purging site files shall also be provided. The City will develop policies for updating site files.	
I. The CAD shall provide access to site files and pre-fire surveys for addresses and businesses for jurisdictions not linking locally-maintained information to the CAD. Vendors should discuss any ability for local authorities to load and maintain their own information.	
J. If the incident being processed is located at a multiple unit location (shopping mall, apartment complex, mobile home park), the system will provide the operator the option to display premise / location information for:	
1. The individual unit	
2. All individual units	
3. The floor (if the CAD system can accommodate the floor)	
4. All floors	
5. The building	

6. All buildings at the address	
7. The address.	
K. Premise information shall also be retrievable via an ad hoc query or other form of report.	
L. The system shall record and retain in the incident history the premise information associated with the location of the incident when the call is created and dispatched.	
LOCATION / PREMISE INFORMATION TYPES	
The software shall also perform necessary look-ups to determine, at a minimum, if any of the following conditions exist at the validated incident location, or if any of the conditions identified in Section 0, Location / Premise Information Processing apply (does the street segment on which the location occurs have information attached to it, etc.). The system shall provide the ability to have the following information displayed for Law Enforcement, Fire, or EMS incidents, including any combination thereof. The system shall track, in the system history log file, whether the user viewed the identified information and the date and time it was viewed.	
A. Location information. This information will be used for displaying special instructions relating to a location.	
B. When entering any location specific information, the system shall require the entry of an expiration date for the information.	
1. The system shall permit the entry of “never” (or functional equivalent) as a valid expiration date.	
2. The system shall include a report that will identify and list all location specific information that will expire within a user specified time range.	
C. After Hours Contact Information – Provide after-hours contact (e.g., key holder, owner / contact person’s name, key codes, etc.) information for any business, apartment complex, business malls, and residential communities.	

D. Emergency contacts for the location (business or residential). Information should be retrievable by both address and business name	
E. Medical information relating to individuals associated with the location.	
F. Fire protection systems	
G. Hazardous locations.	
1. The CAD application will provide for location validation against supplemental files containing locations that have been deemed hazardous to public safety personnel.	
2. At a minimum the system shall support the identification of the specific page in the Emergency Response Guidebook.	
3. Ideally, the system shall provide a hyperlink to the specific page in the Emergency Response Guide book.	
4. This subsystem will allow the entry of dangerous persons, hazardous materials, or other conditions that may be prevalent at the locations.	
5. The system shall support scanned raster images of MSDS sheets and other forms containing hazardous materials information.	
6. The system will also allow for a proximity search around a location for hazards. The proximity will be associated with the type of call and the type of hazard.	

7. When entering hazards, the operator will have the capability to define the hazard proximity.	
8. The Vendor shall discuss the proposed system's ability to provide both hazardous locations support and proximity searches for locations	
.	
H. Prior incidents history (at least the last ten incidents, within the 24 months of online storage, at the location regardless of incident or call type).	
I. Standard Operating Procedures (SOP's) for calls at a specific address, on a specific street segment, as well as within a geographic boundary.	
J. The detailed information in the SOP shall be displayed in a separate area or window on the CAD screen, allowing the incident to be displayed at the same time as the SOP.	
CITIZEN SUBMISSION	
The City is interested in any aspects of the proposed system that would via the Internet, allow citizens to report special conditions about a specific location. This might include special needs during an evacuation, specific medical conditions, or any other location specific information that would impact the safety of the resident or might require special consideration when a response to that location is made. Specific comments as to security, verification and validation of submitted information are requested of the vendor.	
TELEPHONE NUMBER AS A REFERENCE	
A. Given the increasing number of calls that are received from cellular telephones, the proposed system shall have the capability to utilize the telephone number as a reference in the same way and address or location is used to identify and alert dispatch personnel.	

B. The system shall permit the creation of alerts attached to telephone numbers similar to those associated with addresses in the subordinate subsections of this Section 0.	
C. The system shall also provide the capability to utilize the telephone number of the caller when identifying prior calls for service. If prior calls were received from the calling telephone number the call taker and dispatcher shall be notified in a fashion similar to that if a prior call had been received at an address	
D. The vendor shall describe in detail how they will satisfy the requirements of this section, and specifically identify any deficiencies in the capabilities of the proposed system to meet these requirements.	
URGENT INCIDENTS	
A. The CAD applications software shall allow the call taker to pass an urgent but incomplete call for service (containing only basic incident type and validated incident location information) on for immediate dispatch, while the remainder of the incident intake information is being solicited.	
B. As the call taker is obtaining further information through caller interrogation, the updated information will be sent to the dispatcher(s) who is/are handling the incident.	
C. All information added to the incident should contain the time, date, and operator ID.	
INCIDENT ROUTING	
A. CAD shall automatically route a new incident to the appropriate dispatcher(s) based on:	
1. The incident type	
2. The location of the incident (response area)	

B. The call taker shall be able to override the normal call routing by entering the desired dispatcher position ID.	
C. The call taker's screen shall provide a display of dispatchers who are logged onto the CAD system, their areas of responsibility, and the number and type incidents assigned to facilitate the expedient manual routing of incidents.	
D. The system shall support “default supervisory position routing” of particular user-defined incident types to a designated supervisory position.	
E. If the call will require handling by multiple dispatchers, the call will be routed to each. Examples of this are calls requiring a multi-agency type response (i.e. Police and Fire) or calls for which the response compliment is controlled by different dispatchers.	
F. The system shall permit the call taker to override the recommended response area if the response area provided is invalid or incorrect.	
DUPLICATE EVENT DETECTION	
A. After the location is verified, the CAD system shall check all active, pending and recently closed incidents in the response area for potential duplicates.	
B. The detection shall take into consideration:	
1. Proximity	
2. Time	
3. Type of call	

4. Phone Number	
C. It is desired that the proximity for identifying a duplicate call be based on the type of call (i.e. a domestic violence call would have a much smaller proximity search than a smoke in the area call) and density of the area (i.e. a traffic crash call in a rural portion of the City would have a larger proximity search than a traffic crash in an urban area of the City.)	
D. The proximity search should be based upon a radius from the reported location of the incident. (a block face search is not acceptable)	
E. The type of call should not require an exact match since different callers might report an occurrence as a different type of incident.	
F. If any potential duplicates are found, the system shall display sufficient information about each for the call taker to make the proper determination at a minimum this shall include the incident number, incident type, incident location and incident status.	
G. The call taker shall then be able to easily cancel the event if it is a duplicate, proceed with the incident processing, or append the additional information to the “duplicated” incident record at the discretion of the call taker.	
H. The CAD application will maintain canceled “duplicate” incidents within historical system files.	
I. A procedure will be available in the CAD system to merge incident information from duplicate incidents to the master incident record.	
J. A record of the canceled duplicate incident shall be maintained in the master incident record.	

ADDING INFORMATION	
A. The CAD shall allow a call taker or dispatcher to add information to an active incident at any time.	
B. All information entered will be transferred “almost instantaneously” to all call takers/dispatchers working the call and will contain the ID number of the person entering the information, along with the date and time of entry.	
C. The system shall alert users of new information added to the open incident (i.e., colored text, reverse video, etc.).	
D. All information shall be retained in the incident history record.	
E. Additional information may be added to completed incidents at any time through other CAD application functions.	
F. Information contained in completed incidents shall only be modifiable by the addition of comment information and then only by persons with a specific security level.	
G. Vendors will explain in detail the method in which their respective systems handle this requirement.	
H. Comments added by different user4s shall be visually differentiated.	
NON-DISPATCHED “ADVISED” INCIDENTS	
A. The CAD shall provide the ability to record information from citizens about particular situations or incidents that do not require the dispatching of any public safety resources.	
B. These incidents will be recorded and shall be retrievable from the system/incident history files for later access and information analysis.	

ASSIGNMENT OF INCIDENT NUMBERS	
CAD shall assign a unique event/incident number to every call entered into the system. Format of the incident number is XX-XX-XXXXXX (ten digits).	
EMERGENCY MEDICAL DISPATCH	
The City uses ProQA Emergency Medical Dispatch and the Response should include integration to existing ProQA software.	
CALL ENTRY PROTOCOLS	
The system shall provide the capability to create system administrator defined sets of questions of to assist the call taker in determining the appropriate incident type.	
INVOLVED PERSON INFORMATION	
The system shall be capable of capable of collecting the following information about each individual associated with an event: (this information shall be capable of being entered by any authorized system user).	
A. Age Range	
B. Date of Birth	
C. Eye Color	
D. Hair Color	
E. Height Range	

F. Name	
G. Operators License Number	
H. Operators License State	
I. Race	
J. Sex	
K. Weight Range	
L. Additional Remarks -> Clothing description, scars/tattoos/marks	
M. Upon entry the system shall initiate an automatic query, using the following guidelines at a minimum: If the name only is known, then a name query shall be initiated to local files capable of performing a lookup based only on a name. OR / AND If the minimum required fields contain enough data for state and federal queries, then the system shall initiate queries to local, state and federal databases.	
N. The system shall return all responses from local, state, and federal databases to the data entry originator.	
O. The system shall bring positive responses (e.g. possible “hits”) that require a review by the originator to the attention of the originator through the use of audible and visual indicators.	
INVOLVED PERSON INFORMATION	
The system shall be capable of capable of collecting the following information about each vehicle associated with an event: (this information	

shall be capable of being entered by any authorized system user).The system shall capable of collecting the following information about each vehicle associated with an event:	
A. License Plate	
B. License Plate state	
C. License Plate Type	
D. License Plate Year of expiration	
E. Primary vehicle color	
F. Vehicle Identification Number (VIN)	
G. Vehicle make	
H. Vehicle model	
I. Vehicle year	
J. Secondary vehicle color	
K. Remarks	
L. The system shall initiate an automatic query to local, state and federal databases, upon entry of information about a vehicle associated with an event, using the following guidelines at a	

minimum:	
M. License plate number and license plate state	
N. VIN and vehicle make	
O. The system shall initiate a cascaded query, upon receipt of a response from the DMV containing the name of the registered owner of the vehicle, to local, state and federal databases, to check the wanted status, driver's license status, and other statuses of interest about the registered owner.	
SCHEDULED EVENTS	
A. The system shall provide the ability to automatically schedule the CFS event for future dispatch.	
B. The system shall allow scheduled events to be created by entering a CFS or by sending a message.	
C. The system shall be capable of displaying a list of all scheduled events.	
D. The system shall provide the ability for authorized users to activate a scheduled event at any time.	
E. The system shall send a message to the appropriate users when the scheduled activity occurs.	
F. The system shall support location override for scheduled incidents.	

DISPATCH FUNCTIONS	
UNIT/RESOURCE SETUP	
UNIT NUMBER AND TYPE	
A. Each unit shall be assigned a unit number and unit type.	
B. The unit number must be up to six characters.	
C. The unit type shall indicate the type of vehicle and its capabilities.	
D. The system shall allow for tracking vehicle ID in addition to unit radio call sign (e.g. a given vehicle may be referred to as “Unit 1” one day and a different vehicle the next day.	
E. The system administrator should be able to add, delete, and modify unit numbers and types as required.	
FIRE UNIT/CREW CAPABILITIES	
A. In addition to unit identification and type, the system must support several levels of unit/crew capabilities. The dispatcher shall be able to recommend units based on the unit or crew’s special capabilities.	
B. These special capabilities shall be in addition to the unit type. Examples of these capabilities include vehicle extrication capability on a ladder truck, a paramedic on an engine, hazardous materials specialists on EMS units, etc.	
C. The system shall be capable of recommending tenders based upon their capacity.	
D. The system must also take into consideration the number of personnel currently staffed on the unit.	

E. System supervisors and other authorized users must be able to modify these capabilities as required, without adversely impacting the system (e.g., without having to shut down or restart the system.).	
F. The unit crew capabilities must be easily modified.	
G. Multiple Fire unit types.	
1. Units may have more than one type.	
2. The system will recommend them based on the appropriate type. As an example, a “quint” may be recommended as either a pumper or a ladder truck.	
3. The system shall be able to specify which type is utilized first if a recommendation requires several of the unit’s type. (i.e. the call requires both a pumper and a ladder, the system should be able to specify that the quint should be used as a ladder first)	
H. Fire unit staffing.	
1. The system shall allow the dynamic entry of personnel staffing specific units/apparatus.	
2. The system should allow the staffing module to be accessed from the field by authorized users to dynamically reflect changing assignments.	
SELECTING PENDING INCIDENTS	
A. The CAD application shall sort the displayed pending incidents in order of priority and by elapsed time (time since entry.)	
B. The colors for each priority shall be definable by the system administrator.	

C. The dispatcher shall be given an audible and visible alert that an incident has been added to the pending queue.	
D. The volume, pitch, and duration of the audible alert shall be definable by the system administrator and based on the priority of the incident.	
E. Vendors shall fully describe the method for alerting the dispatcher that a new call has been placed on the pending incident queue.	
F. The dispatcher shall be able to:	
1. Select the highest priority incident from the pending incident display with a single keystroke and/or by selecting the incident using a point-and-click device.	
2. Select incidents from the pending queue in any order.	
3. Place an incident back in the pending queue after reviewing it.	
4. Select another pending incident from the screen.	
5. If more than one pending incident is open at the same time, each incident will be located in a separate window and the dispatcher will be able to toggle back and forth from each of the open incidents.	
6. Vendors shall describe the maximum number of pending/active incidents that can be opened at any one time and how the system accomplishes this process.	
G. The system shall permit a dispatcher to provide pre-release or pre-alert functionality to alert stations and units to new incidents and the	

corresponding address and/or location prior to the CFS event being dispatched	
DISPATCH SCREEN	
The CAD software shall provide the following basic functions/information when a call for service is retrieved for dispatch:	
A. All calls for service information obtained during incident intake.	
B. Geofile information, to include:	
1. The high and low closest cross streets,	
2. Jurisdiction, and district,	
3. Fire response area,	
4. EMS response area,	
5. Law Enforcement reporting area,	
6. Development name,	
7. Map page and coordinate, and	
8. Latitude and Longitude,	
C. The above response zones/areas shall be automatically computed by the CAD system for verified locations and displayed as part of the incident record.	

D. Coordinate based location of the call, preferably latitude and longitude.	
E. This information should be easily available for review by dispatchers, call takers, and supervisors working the call.	
F. Premise / Location information. This information will be used for displaying hazards, hazardous materials, or special instructions relating to a location as described in Section 0, Location / Premise Information.	
G. Telephone Number information. This information will be used for displaying hazards, hazardous materials, or special instructions relating to a location as described in Section 0, Telephone Number as a Reference.	
H. Notes shall be able to be associated with various geographic locations: grids, street segments, intersections, or specific addresses as described in Section 0, Location / Premise Information Processing.	
I. Notes shall be able to be associated with the telephone numbers as described in Section 0, Telephone Number as a Reference.	
J. Information regarding hazardous locations in proximity to the incident location shall be flagged.	
K. Prior call for service history (at least the last ten incidents, within the 24 months of online storage, at the location regardless of incident or call type). For example, if officers are responding to an incident, the proposed CAD system should inform them that a “false alarm” recently occurred there or that loud music was reported on the previous shift so that they are aware of the situation before and during their response to the incident.	
L. Prior call for service history (at least the last ten incidents, within the 24 months of online storage, from the telephone number regardless	

of incident or call type). For example, if officers are responding to an incident, the proposed CAD system should inform them that a "false alarm" recently was reported by that phone number or that loud music was reported on the previous shift so that they are aware of the situation before and during their response to the incident.	
M. Duplicate event detection. The application software must detect and notify the dispatcher of the potential of a duplicate incident as previously described.	
N. Emergency location contacts.	
O. Incident type advisory or procedural information. Each CAD incident type may have multiple advisory or procedures displayed. These instructions may be used to advise dispatch and/or field personnel on how that specific incident type is to be handled.	
P. The detail information shall be displayed in a separate area or window on the screen, allowing the incident to be displayed at the same time as the advisory.	
Q. Whenever an incident location has emergency contacts, an indicator will be displayed to the user advising of the existence of the emergency contact information.	
R. The system should enable Windows tabs to be used to allow the dispatcher to select supplemental history about the incident (e.g. premises history, past event history, hazards, persons of interest)	
S. The system shall provide, upon receipt of an update, a method, such as an 'Update' button, for the dispatcher to retrieve the CFS event that has been updated.	
T. The system shall remove CFS events as they are closed by the dispatcher from the CFS event display, without additional interaction from the dispatcher.	

U. The system shall allow the user to display the added comments in reverse chronological order.	
UNIT RECOMMENDATION	
CAD shall automatically provide the dispatcher with a recommended set of units suggested for dispatch. The recommendation will be composed of a specific unit identifier(s). Creating the list of recommended units for dispatch consists of two processes. The first identifies the number and type of units to recommend and the second identifies the specific units matching the type and number that will be recommended.	
A. The recommendation of specific units shall be based upon:	
1. Shortest travel time,	
2. Shortest Travel Distance,	
3. Other fixed geographical based plans (response plans)	
B. The response plans as constructed shall be system activated based on the time of day and day of week. (it should be noted that the activation times will be geographically dependent)	
C. The system shall provide the capability for a dispatcher to close an incident without assigning any resources.	
1. Incidents closed without resources assigned shall require the entry of a disposition code and comments.	
D. If units are being recommended based upon shortest travel distance or time, the system shall take into account the characteristics of the unit and the route that will be used. This would include items such as height restrictions on the route and the height of the vehicle or turn radii on the route and turning restrictions on the vehicle. The system would recommend a unit that would be unable to traverse the route that would be used for	

travel.	
NUMBER AND TYPES OF UNITS TO BE RECOMMENDED	
A. The number and type of units to be recommended shall be based upon:	
1. The incident type,	
2. Geographic sub area,	
3. Jurisdiction,	
4. Specific addresses or location types,	
5. Time of day,	
6. Day of week, and	
7. Resource plan in place.	
B. The recommendation shall include specifically the number and type of units that should be recommended based upon the incident type.	
C. The CAD system will allow the recommendation of different numbers and types of resources for the same incident type when the incidents are located in different geographic sub-areas (i.e., geographically sensitive dispatch policies).	
D. The CAD system shall provide the capability to vary the recommendation of the numbers and types of units based upon the time of day and day of week.	

E. The CAD system shall allow for a systematic change in the numbers and types of units that are recommended based on a degraded or upgraded response plan.	
F. The CAD system must facilitate the inclusion of resources required to respond to specific call types as discussed in Sections 0 Incident Type and Section 0, Specific Units to be recommended.	
G. The CAD system shall allow the recommendation of different numbers and types of resources for the same incident type when the incident is located at a specific address (i.e. school, chemical plant, hospital, etc.)	
H. The CAD system shall support the use of unit type substitutions in identifying the number and types of units to recommend. (i.e. (1 engine) or (1 ladder and 1 rescue)	
I. The system shall provide the capability to recommend resource groups made up of individual units [e.g. a Hazmat (hazardous material) group made up of several units and dispatched as a single "Hazmat team" (i.e. single unit).	
SPECIFIC UNITS TO BE RECOMMENDED	
A. Law Enforcement unit recommendations shall be based on:	
1. The type of call	
2. Unit staffing,	
3. Unit types,	
4. Unit status.	

5. Primary and secondary capabilities of units and personnel	
B. Law Enforcement recommendations, dependent on call type may include units assigned to other calls.	
C. Fire unit recommendations shall take into account:	
1. Unit types,	
2. Assigned personnel quantity,	
3. Assigned personnel capabilities, and	
4. Unit equipment capability.	
5. Primary and secondary capabilities of units and personnel	
D. The vendor shall describe any tools available to assist in developing the recommendations.	
1. It is highly desirable that some form of graphic or flow chart is available to assist the users in developing the response recommendations.	
E. The system shall recommend units on lower priority activity based upon the type of call. This applies to both police and fire.	
F. The system shall provide the capability to dispatch a fire and/or EMS station to an incident regardless of the number of units or personnel that station has assigned to it or on duty.	

UNIT RECOMMENDATION BASED ON ESTIMATED SHORTEST TRAVEL TIME	
In this approach the system will identify the specific units based upon the estimated shortest travel time over the street network.	
A. For mobile units such as police and fire/EMS units away from their station the system shall utilize an AVL system to identify the units' positions.	
B. For quartered fire/EMS units the system shall utilize the known location of their station to identify the units' positions.	
C. The vendor shall explain in detail the GIS requirements for their system to make recommendations based on estimated shortest travel time.	
D. The vendor shall explain the source of their recommendation algorithm (proprietary, ESRI Network Analyst, etc.).	
E. The vendor shall explain their system's ability to assess time for routes that will travel through congested areas during times of congestion (Rush hour)	
UNIT RECOMMENDATION BASED ON CALCULATED SHORTEST TRAVEL DISTANCE	
In this approach the system will identify the specific units based upon the calculated shortest travel distance over the street network.	
A. For mobile units such as police and fire/EMS units away from their stations the system shall utilize an AVL system to identify the units' positions.	
B. For quartered fire/EMS units the system shall utilize the known location of their station to identify the units' positions.	
C. The vendor shall explain in detail the GIS requirements for their system to make recommendations based on calculated shortest travel distance.	

D. The vendor shall explain the source of their recommendation algorithm.	
E. The vendor shall explain their system's ability to assess time penalties for the process of calculating unit recommendations	
1. The vendor shall explain the ability to change these time penalties by time of day and day of week.	
2. The vendor shall explain the ability of their system to override the time penalty if the station or unit is put into service.	
UNIT RECOMMENDATION BASED ON FIXED RESPONSE PLAN	
A. The system shall utilize the incident geographic location to determine the reporting district and sector to determine the order in which to recommend specific units to respond.	
B. The system will utilize real-time unit status to determine unit availability. All unit recommendations shall correspond to the current, real-time status of all resources.	
C. With limited exceptions, the software shall never recommend a unit that is on another assignment or otherwise unavailable for dispatch. The application shall facilitate the definition and recommendation of second, third, etc., level units in the event a primary recommended response unit(s) is in an unavailable status.	
1. The software will allow the recommendation of out of service Law Enforcement units for specific call types.	
D. Law Enforcement unit recommendation shall be based on district/sector plans. The application shall support multiple district/sector plans.	

1. The Vendor shall indicate how many different district/sector plans may be entered.	
2. It is highly desirable that the response plans are variable by time of day and day of week.	
E. Fire unit recommendations will accommodate unlimited multiple alarm levels.	
F. Fire unit recommendations shall be based on a planning algorithm used by the CAD system. The Vendor shall indicate how many different response plans the CAD system will accommodate.	
G. The CAD system will provide for temporary change of quarters of Fire/ EMS units. The dispatch recommendation will be based on the “move to” coverage or incident scene locations.	
H. The unit recommendation of Fire / EMS units will show the station number and/or pager tone codes associated with each unit.	
I. The CAD applications will support “tactical locations” that will modify the normal response based upon the location of the incident. These “tactical locations” and the resulting response recommendations will be user defined.	
J. The CAD system will allow for “cross-staffed support for recommendations of Fire units. If a “cross-staffed” unit is recommended, the “other” unit is automatically removed from service. Once the unit returns to quarters from its assignment, all cross-staffed units are automatically marked available. The system shall support multiple “cross staffed” units.	
K. The CAD system shall provide the capability to “load balance” between units. This would be required for two similar units that are located in the same facility for Fire or EMS, or two patrol units may be assigned to the same beat for police. The vendor shall explain in detail how their system would provide workload equalization between these units.	

L. Target Hazard Dispatch.	
1. The CAD system administrator shall be able to identify certain occupancies such as hospitals, nursing homes, high rises, chemical storage plants, etc. as target hazards.	
2. The system must support an unlimited number of different target hazards.	
3. Each hazard shall allow for an upgraded response depending on the type of hazard. Each hazard occupancy shall be identified by both address and business/building name.	
M. The system will provide for “degraded modes” of dispatch activity.	
1. In situations of large thunderstorms, heavy snowfall, ice storms, peak brush fire season, tornados and other major events, the number and type of recommended units will be reduced based on the system being placed in degraded mode.	
2. The reduction in resource recommendations will be table-driven.	
3. One or more degraded modes are desired. Vendors shall describe their system’s method for handling this requirement.	
N. The CAD system must be able to send a snap shot of the current location of incidents and units (as displayed on the system’s Integrated Map Display) to supervisors equipped with Mobile Data Computers capable of accepting and displaying the information.	
O. Substituting Units.	
1. When the system is searching for a unit of a particular type (example: an ambulance) and locates a unit of another type (example: a medic unit), the system shall be able to add the	

medic unit to the recommendation, but continue searching for the ambulance.	
2. The search shall progress from the incident going out until a full complement of resources, as defined by the dispatch policy for that incident type, priority, and location (see other modifiers in this section), is found.	
3. If the most desirable unit is not found, then the next desirable unit shall be recommended.	
4. This capability shall be user definable for any unit types based on the call type.	
P. The CAD system must be able to recommend units based on the skill level of the individuals assigned to the unit. For example, if a SWAT, Spanish-speaking individual is required, the system should be able to find and recommend the closest available unit matching the requirement. A fire-relevant example is the requirement to identify available personnel that are certified for confined space entry.	
Q. The proposed CAD system must provide an entry screen for requesting specific skills as well as properly process requirements that are automatically generated based on the incident type.	
R. The system shall have the capability to recommend the “balance of an alarm” which would recommend only those units needed to complete the next alarm level’s recommended compliment.	
DYNAMIC RECOMMENDATIONS	
A. Until each dispatched unit has arrived on scene the CAD system shall monitor all units that become available and if a unit that has become available is a better “fit” than one of the dispatched units the system shall alert the dispatcher. Better fit could mean that it could be closer or a better equipment match.	

B. The system should also detect when a reduction in resources is required and notify the dispatcher.	
MUTUAL AID FUNCTION	
A. The system shall recognize the resources and capabilities of the host agency's own units and those of neighboring agencies.	
B. The system shall allow for custom mutual aid agreements, including business rules for utilization, and recognize various levels of response/mutual aid.	
C. The system shall recommend the use of other agency resources based on parameters within the mutual aid agreements.	
D. The system shall auto-populate incident information (e.g. address information, nature of incident, resources needed) from other CAD systems via a CAD-to-CAD type interface	
E. The system shall support the Joint NENA/APCO Emergency Incident Data Document (EIDD) or similar CAD-to-CAD functionality for sharing incident information as required for mutual aid agreements.	
AUTOMATIC AID FUNCTION	
A. The system shall provide the capability to track the status (availability) of the host agency's own units and neighboring agency resources/units via a CAD-to-CAD type interface (i.e. overall view of unit resources).	

B. The system shall recognize the resources and capabilities of the host agency's own units and those of neighboring agencies. .	
C. The system shall allow for custom automatic aid agreements, including business rules for utilization	
D. The system shall allow various levels of response/automatic aid.	
E. The system shall allow the use of other agency resources based on parameters within the automatic aid agreements.	
F. The system shall auto-populate incident information (e.g. address information, nature of incident, resources needed) from other CAD systems via a CAD-to-CAD type interface	
G. The system shall allow the Joint NENA/APCO EIDD or similar CAD-to-CAD functionality for sharing resource and incident information as required for automatic aid agreements	
DISPATCHING UNITS	
The dispatcher shall have the capability to accept the system-provided unit recommendations with a single keystroke or action of a point and click device, or override the recommended units and replace them with one or more other units.	
A. The dispatcher shall have the capability to select a unit that is on another call type based on agency specific business rules.	
B. The system shall assistance to the dispatcher as to what type of calls can be held or preempted.	

1. A single keystroke shall remove the unit from the previous incident (preempt) and assign it to the new incident.	
2. If the preempted unit is the last unit assigned to an incident, the incident shall be automatically placed in the pending incident queue and held (stacked) for that unit.	
3. When the unit clears the incident to which it was assigned, the unit will be recommended to the incident from which it was preempted.	
4. If a different unit is assigned to the incident in the pending queue, the incident will no longer be stacked (held) for that unit and the system will not automatically recommend it when the unit becomes available again for dispatch.	
5. All times associated with assignment and re-assignment shall be kept in the incident history file.	
C. CAD will assign a primary unit based on incident response policy.	
D. The dispatcher shall have the ability to change the primary unit at the time of dispatch or at any time during the handling of the incident. The primary unit is the unit who is responsible for completing any required departmental reports.	
E. The CAD system shall provide the ability to stack, or assign low priority incidents to a busy unit.	
1. These incidents shall be time stamped, and displayed in the pending incident display, with an indication that the incident has been stacked to a unit.	

2. When the unit clears from one incident, the applications software will provide an indication that the unit is now available for a “stacked” or preempted incident.	
3. The CAD shall time stamp when the unit is en route to the new incident.	
F. Upon acceptance of a unit dispatch recommendation or input of a dispatcher's own unit recommendation, the applications software shall automatically and dynamically update the status of all affected units throughout the CAD system.	
G. All CAD workstations must be updated with the new status information automatically and instantaneously.	
1. At this point, units equipped with Mobile Data Computers through the MDCS functionality will automatically be notified of their assignment, status update, call information, other units assigned to the call, and location and hazard information.	
H. The system shall provide the ability to automatically transmit incident information such as address of incident, development name, high and low cross streets, map page and coordinate, and call type via alphanumeric paging and text messaging based on the type of incident, geographic location of incident, unit availability.	
1. The data sent to the alphanumeric pagers shall be formatted so that it can either be sent to the mail drop area as a notification or to the page area as a dispatch message to respond.	
2. Additionally, the CAD will have the ability to transmit specific information from the incident to specified alphanumeric pagers.	
I. The CAD system must support and be able to recommend roaming units (i.e., units that are assigned to more than one patrol district).	

J. The software shall provide dispatchers with the capability to assign any number of, or all units, with a single command.	
K. The system shall allow the dispatcher to assign any valid field unit to an incident even if that unit is not currently logged on to the system.	
L. The system shall notify the dispatcher and confirm that the correct unit has been assigned if a unit assigned to an incident is not logged on the system.	
HELD CALLS	
A. The system shall permit the holding of calls based upon the type of incident	
B. The system shall allow a CFS event to be held for a unit that is not yet logged on.	
C. The system shall record in the history of the CFS event when an event is placed on hold.	
D. The system shall apply timers to all held CFS events and alert the dispatcher when a held event has exceeded the allowable time in a held status.	
NOTIFICATIONS	
A. Upon selection of recommended units and the execution of the dispatch function the dispatched units shall be notified. The CAD system should allow for updated or refreshed data to be manually pushed to the defined notification method via a command line entry.	
B. The system shall provide the ability to create messages that are retained in the system and sent at pre-specified times.	

C. The system shall retain a log of all notifications transmitted.	
D. The CAD system shall provide the capability to notify different units in different manners. The specifics of the different approaches to notification are addressed elsewhere in the RFICE, however, the following types of notification shall be provided automatically by the CAD system:	
1. Mobile Data Digital Dispatch,	
2. Toning,	
3. Alpha-numeric paging,	
4. Fire Station Alerting Systems,	
5. Text Messaging to smart phones	
6. Email notification	
7. CAD's messaging system	
8. The vendor shall explain any other methods of notification that their system provides	
9. Notifications for "interested parties", being non-dispatched units, or location contacts must be supported. This can be used to alert a transport destination like a Jail or a Hospital of incoming transports, or health agencies of an incident type occurring.	

E. The system shall generate (automatically) information appropriate for use with “rip and run” printers and/or alphanumeric pager devices when units are dispatched or on demand by a dispatcher.	
F. The system shall support “rip and run” printing via IP network using protocols, such as Internet Printing Protocol (IPP), Line Printer Daemon (LPD), and Hewlett-Packard Printer Job Language (PJL), and via facsimile transmission based on operational requirements.	
G. The system shall support sending SMS messages either directly via cellular modem or using a common carrier’s SMTP interface.	
BE-ON-THE LOOKOUT (BOLO)	
A. The CAD system shall provide an efficient method for tracking BOLO notifications.	
B. The system shall make BOLO information accessible for a system-wide notification, and	
C. BOLO’s shall be active a specific number of days (self-canceling) or until manually cleared.	
D. Any time a license plate is entered into the system the CAD shall automatically check the BOLO information.	
E. The system shall provide a BOLO structure to include all necessary information such as the nature of the BOLO, priority, date, range of effectiveness, subject and/or vehicle information, hazard information, and contact information.	
F. The system shall allow narrative fields for additional information.	
G. The system shall provide the means for BOLO information to be easily searchable, printable, and have the ability to automatically populate on an incident sheet referencing any particular name,	

address, or vehicle information.	
H. The system shall flag the field (automatically) with configurable visual and audible alerts.	
I. The system shall support a workflow record for initial BOLO creation and any additional edits.	
FIRE UNIT MOVE-UPS	
The Response shall include Fire apparatus Move-Up software that will interface CAD and the Integrated Map Display.	
ADDING UNITS TO INCIDENTS	
ADDING UNITS BY RECOMMENDATION	
A. The dispatcher shall be able to add additional units to an incident by having the system recommend these additional units.	
B. The dispatcher will specify the type of unit(s) needed, and the system should recommend the additional units in the same way as an initial dispatch. (Example: Command requests an additional Brush Truck. The dispatcher enters a command for recommendation of a Brush Truck. The system searches the available units for the next Brush Truck and returns a recommendation to the dispatcher in the same screen format as the original recommendation.)	
ADDING UNITS BY CALL TYPE OR ALARM LEVEL	
A. The dispatcher shall be able to request the system to recommend additional units for an active incident by providing the system with a different call type or by changing the alarm level on the call.	
B. The system should recommend the additional units in the same way as an initial dispatch. The unit recommendation shall take into account the units already assigned to the call and only recommend the additional required units. For example, if a second alarm is called only the additional units required to satisfy the second alarm	

would be recommended by the system.	
C. The system shall allow another set of run orders by alarm level.	
ADD UNITS BY PERSONNEL CAPABILITIES	
A. The dispatcher shall be able to add additional units with specific capabilities to an incident by having the system recommend these additional units.	
B. The dispatcher will specify the personnel capabilities needed, and the system should recommend the additional units in the same way as an initial dispatch. (Example: Command requests an additional ALS provider. The dispatcher enters a command for recommendation of an ALS provider. The system searches the available units for the next ALS provider and returns a recommendation to the dispatcher in the same screen format as the original recommendation.)	
INCIDENT AND UNIT STATUS MAINTENANCE	
A. The applications software shall dynamically and interactively track the status of all resources that are defined within the CAD system.	
B. A unit icon shall appear on the Integrated Map Display showing the last known location of each unit.	
C. The unit icon shall be repositioned to the new location each time the unit's location is changed.	
D. When AVL information is available, the unit's location will be automatically updated via the AVL system.	
E. The color of the icon shall correspond with the unit's status.	

F. For MDC equipped vehicles, the system will allow them to digitally update their status by using their onboard mobile data computers.	
G. The system will track those status updates as if they were entered by system operators and indicates the MDC as the initiator.	
H. The software shall provide an indication as to whether a Police unit is a single or two-person unit. Two-person units with one fully-qualified responder (such as training units) shall be configurable.	
I. The unit icon displayed on the map shall indicate this also.	
J. The Vendor shall describe any capabilities that may exist for the City to add or modify Law Enforcement status conditions. The application shall track the following minimum incident and unit status conditions for Law Enforcement units assigned to an incident:	
1. Incident Received	
2. Assigned / Dispatched	
3. Acknowledged	
4. En route	
5. In Area	
6. Staged	
7. On scene	

8. Transporting	
9. Arrive transporting location	
10. Available (Clear)	
11. Out of Service	
12. Delayed	
K. The Out of Service status shall be supported by secondary locally defined table identifying the reason for the out-of service condition.	
L. The Delayed status shall be supported by secondary locally defined table identifying the reason for the delay .	
M. The Vendor shall describe any capabilities that may exist for the City to add or modify Fire/EMS status conditions. The application shall track the following minimum incident and unit status conditions for Fire/EMS units assigned to an incident:	
1. Incident Received	
2. Assigned / Dispatched	
3. Acknowledged	
4. En route	

5. On scene	
6. In area	
7. Staged	
8. Available on radio	
9. Available In-District	
10. Available In-Quarters	
11. Out of Service	
12. Transporting	
13. Arrival	
14. At Hospital	
15. At Patient	
16. Delayed in Quarters	
17. Delayed in service	

N. The system shall permit multiple transports by a single unit under special conditions.	
O. The Out of Service status shall be supported by secondary locally defined table identifying the reason for the out-of service condition.	
P. The Delayed statuses shall be supported by secondary locally defined table identifying the reason for the delay.	
Q. In the event the FD activates an Incident Command System, the proposed CAD system should facilitate the capture of certain stages and associated times of a Fire incident, such as:	
1. Initiate Command.	
2. Transfer Command.	
R. Recorded times (e.g., dispatched, arrived, etc.) shall be maintained in military (24-hour clock) format.	
S. The applications software shall capture hour, minutes, and seconds (HH:MM:SS). All unit status changes shall be automatically time stamped and become part of the incident for service history.	
T. The clock time and date used by CAD must be able to be reset while CAD is operational, and without the need to have users log off, or to re-boot the system.	
U. The Vendor shall discuss how its proposed system handles semi-annual time changes and the effects that these time changes have upon open incident times and later statistical analysis.	
INCIDENT MILESTONES MAINTENANCE	
Certain incident milestones shall be tracked by the system. A command executed by the dispatcher shall mark the occurrence and the time of the	

milestone on the incident record. Unit based milestones, such as first unit arrival, shall be automatically captured when the unit status command is executed. FD / EMS milestones include:	
A. Receipt of call.	
B. Incident entered for dispatch.	
C. First dispatch of incident.	
D. First unit arrived at the scene.	
E. First engine arrived at the scene.	
F. First transport unit arrived on the scene.	
G. First medical arrived on the scene.	
H. Patient contact made.	
I. Trauma alert	
J. Water on the fire.	
K. Fire declared under control.	
L. Patients extricated from a vehicle.	

M. First shock delivered	
N. Mayday initiated	
O. Coroner called	
P. Medical Air Transport requested	
Q. Primary search initiated	
R. Primary search completed	
S. Secondary search initiated	
T. Secondary search completed	
U. Notifications conducted (entered for each notification).	
V. Evacuation declared.	
W. All clear announced after search is completed.	
X. Last unit cleared incident.	

UNIT STATUS TIMERS	
A. The CAD applications software shall provide unit status timers in minutes and seconds that will advise the dispatcher if a unit has exceeded the preset amount of time in a status condition.	
B. The applications software shall provide an initial check-back after a preset time interval passes between when a unit first arrives "on-scene" to when the software shall first prompt the dispatcher to check on the unit's condition.	
C. Vendors shall explain any ability to include mobile computer transactions and/or two-way radio channel affiliation as part of the checking.	
D. This time interval shall be defined based upon incident type and jurisdiction and established by the system administrator.	
E. The application shall provide secondary check-back times which shall be the defined time periods, after the initial check-back, that the software will continue to prompt the dispatcher to check on a unit's condition.	
F. When a defined check-back period has expired, the system shall visually and audibly alert the dispatcher assigned to the unit to make contact with it.	
G. If the dispatcher cannot make contact with the unit, the dispatcher should be prompted to notify field supervisory personnel.	
H. Once contact is made with a unit whose check-back timer has expired, and the unit advises that its status is fine, the dispatcher must be provided with an appropriate means to cancel the check-back alert and reset the unit's check-back timer.	
I. This process shall continue, utilizing the table-defined check-back time interval, until a unit clears from the incident.	

J. The system shall monitor units dispatched to a call. If the units have not been marked en route to the call in a Department pre-defined time, the system shall make a visible and audible notification to the dispatcher and appropriate supervisor that the unit is overdue.	
K. The system shall provide welfare check timers that can be assigned to units that are not on calls for service. It could also be considered a timer set based upon the status of available.	
L. The system shall provide the capability to set welfare times on fire and EMS units that are “on the air” meaning away from their stations but not assigned to call.	
M. The welfare check timer will behave as described above.	
.	
N. The system shall allow configurable timers (i.e. ‘hh:mm:ss’, ‘mm:ss’, or ‘ss’).	
UPDATING UNIT STATUS	
A. Dispatchers shall be capable of updating unit status through:	
1. Keyboard input of appropriate unit identifiers and a single function key,	
2. A pointing device,	
3. Via command line entry.	
B. The applications software shall allow dispatchers to update a unit's status while performing any call taking or dispatching function within the CAD system, by providing easy accessibility to an interactive command line at all times.	

C. This command line shall allow multiple units to have the same status updated simultaneously.	
D. Updating unit status must be accomplished without losing the incident information displayed on the screen.	
E. If the cursor is repositioned to perform the command, it must be automatically returned to the correct screen and cursor position where the user left off, without losing any information.	
F. The software shall provide dispatchers with the capability to clear any number of, or all units, with a single command.	
TRANSPORT MILEAGE TRACKING	
A. The system shall capture beginning and ending mileage for individual transports.	
B. The system shall provide a visual and audible error indication to the user upon failure to enter beginning or ending mileage based on transport or response type.	
C. The system shall provide a method of integration with an AVL system for increased accuracy and efficiency.	
D. The system shall use GIS/mapping to supplement driving directions based on shortest route beginning and ending address locations, with regard to environmental factors such as time of day, weather conditions, train schedules, and road/bridge blockages.	
E. The system shall include the use of intuitive interfaces that facilitate mandatory entry based on given incident types or processes.	
F. The system shall provide an interface to billing and reporting components.	

G. The system shall provide the ability for an authorized user to manually override an entry by a dispatcher or supervisor.	
H. The system shall record the overridden information in an audit log.	
INCIDENT COMMAND SUPPORT	
A. The system shall be able to support the functions of the NIMS and to provide data to support NIMS-required reporting from an RMS.	
B. The system shall provide the ability to track roles, tasks and situation reports.	
C. The system shall provide NIMS functions directly or through an interface with an external system.	
SECONDARY INCIDENT LOCATION	
A. The system shall provide the ability to change a unit's location from the primary address to a secondary address without clearing the unit from the incident or CAD record.	
B. The system shall log a date/time stamped record of the change in the CFS event.	
ESTIMATED TIME OF ARRIVAL	
C. If AVL is in use, the system shall calculate an estimated time of arrival for each unit based on the non-emergency travel time from the time dispatched.	
D. If the unit exceeds this time by a Department-determined percentage of the travel time, the dispatcher shall be provided an audible and visual alert.	

E. This estimate should also be available for display to the call takers to assist them while talking to the calling party.	
SITUATION FOUND	
The CAD system shall provide a separate field in the incident record that will record the situation found upon arrival. This field will be used to differentiate the incident type of the call as dispatched and the incident type of the call for service as found upon arrival.	
UPDATING INCIDENTS	
A. Any authorized system user shall be able to recall an incident by entering the incident ID.	
B. Any authorized system user shall be able to recall an incident by entering the unit number of any unit assigned to the incident.	
C. The applications software shall allow both call takers and dispatchers to review an active incident and update the incident with corrections or additions.	
D. All corrections or additions must contain the time, date, operator ID and workstation ID associated with the change.	
E. When call taker forwards updated information to the appropriate dispatcher, the dispatcher shall be visually/aurally alerted by the system to the presence of the update.	
F. In addition, there will be a clear indication of which information is new.	
G. Law Enforcement calls should be available to the Fire Department and EMS to investigate the details of the call, especially if they are also responding.	

H. Law Enforcement should be able to view Fire and EMS call details if necessary.	
I. However, the default situation is for Law Enforcement to only view Law Enforcement calls and for Fire Department dispatchers to only view Fire calls and EMS dispatchers to view only EMS calls if configured by the local system administrator.	
J. It should not be necessary to transfer the entire incident to accomplish the transfer of the updated information.	
K. The software must allow units to be added as assisting units to an incident after it has been dispatched.	
L. If another agency response, such as adding Fire units to a Law Enforcement incident, is required, the CAD shall automatically copy the active incident and route the new incident to the appropriate dispatcher.	
M. The Vendor shall discuss their system's ability to add additional public safety agency resources to an active incident.	
N. Fire dispatchers must be able to escalate Fire alarm levels.	
O. The CAD will make additional unit recommendations based on the new alarm level.	
P. Dispatchers must be able to "preview" the next alarm level assignments for an active incident.	
Q. Units equipped with Mobile Data Computers (MDC) shall be able to update the incident record by adding comments, changing its location, etc.	

R. The agency system administrator shall have the ability to identify which fields may be updated by an authorized system user.	
S. The system shall permit multiple users, including MDC-equipped field resources, the ability to simultaneously update information to the CFS event.	
1. The system] provide controls when two or more CAD users attempt to update the same field in the CFS event	
T. The system shall notify the CAD user attempting to add information to a closed CFS event that the event is closed.	
RELEASING AND REASSIGNING UNITS	
A. The software shall allow units to be reassigned from one incident to another or to be easily “exchanged” on two active incidents.	
B. The previous incident shall be returned to the pending queue if the reassigned unit is the last or only unit on the incident.	
C. Vendors shall discuss how these functions are accomplished by their systems.	
INCIDENT COMPLETION	
A. CAD shall allow users to clear either single units or all units on an incident with a single command, function key, or point and click device action.	
B. The dispatcher shall be able to add comments upon clearing the incident or to a closed incident.	
C. If the last unit on an incident is cleared, CAD shall require one or more disposition codes if the user agency requires a disposition code for the incident type.	

D. The software shall provide for the capture of a user-maintainable incident disposition code, an indicator that a report is or is not required, and incident completion comments.	
E. Disposition codes shall be selectable from a validated list of potential disposition codes.	
F. The CAD system administrator shall be able to modify, add, and delete valid disposition codes.	
G. If the last unit clearing an incident is Mobile Data Computer (MDC) equipped, it shall be able to indicate the final incident disposition and transmit it digitally to the CAD system.	
H. The CAD system shall track and use this disposition as if it was entered by a system operator, including tracking the time, device ID, and person ID of the person entering the disposition and clearing the call.	
I. Immediately upon the closure of an incident all data including the incident history, unit history and all comments shall also be written to the CAD system's Data Warehouse.	
J. Immediately upon incident closing the system shall update that premise record for the location of the incident to include a history update for the incident.	
REOPENING AN INCIDENT	
The system shall provide the capability to reopen a closed incident. The vendor shall discuss the capabilities of the proposed system in this area specifically identifying:	
A. Under what circumstances an incident may be reopened and	

B. How information related to the reopened incident is captured and	
C. The impact on data already transferred to other systems.	
D. The system shall provide the ability to reopen a CFS event by incident number, location, or unit ID.	
E. The system shall provide the ability to reopen closed CFS events and assign units.	
F. The system shall provide the ability to open a closed CFS event as a new CFS using information from the old CFS event, but with new time stamps.	
STATUS MONITORING	
If limiting the data displayed on the status monitors is accomplished via some form of filtering unwanted information, the vendor shall explain in detail the safeguards the system has in place to ensure that all units and all incidents are displayed on at least one dispatch position's status monitor.	
PENDING INCIDENTS	
A. In a separate window, the software shall display the incidents waiting to be dispatched (pending) queue. The dispatcher shall be able to quickly select the desired incident to dispatch.	
B. The pending incident queue display shall present all waiting calls for that dispatch position for service in priority order, and within each priority, elapsed time since incident receipt.	
C. Displayed information shall include, at a minimum:	
D. Incident priority.	

E. Incident type.	
F. Location.	
G. Appropriate response areas (i.e., Police district, Fire response zone).	
H. An indicator of whether the incident is near the boundary of the City's dispatch area (user option).	
I. Time of incident receipt or elapsed time since incident receipt (user option).	
J. Brief incident summary comment.	
UNIT STATUS	
A. The software shall facilitate the operation of a unit status display monitor.	
B. This monitor displays the interactive status of all units controlled by an individual dispatcher.	
C. The status display shall be a separate monitor/window controlled by the dispatcher's interactive workstation.	
D. The status monitor will have the ability to display one or more dispatch groups and one or more agencies at the dispatcher's discretion.	
E. The unit status display shall present the current status of all active units. Status information shall include, at a minimum:	

1. Unit identifier.	
2. Current status.	
3. Assigned incident ID (if assigned to an incident).	
4. Assigned incident type.	
5. Talk group incident assigned.	
6. Location of assigned incident or location of the unit if not assigned to an incident (e.g., at Fire Station #1).	
7. Time in status or elapsed time (user option).	
8. Brief comment.	
9. If unit is AVL equipped	
F. The grouping of displayed units shall be user maintainable. This will allow the dispatcher to organize the status display by station, type of unit, geographic coverage area, etc.	
G. A single workstation must be capable of displaying any Police/Fire/EMS units.	
H. The dispatcher shall be able to sort the unit status display by unit number, unit type, incident number, battalion, and/or availability.	

I. It is highly desired that the system provide the capability for the unit status monitors to have the ability to display multiple columns of units and their associated information. It is also desirable that multiple status windows can be open to view assigned disciplines and related disciplines separately.	
ACTIVE INCIDENT STATUS	
A separate portion of the display or a window shall display a summary of all active incidents.	
A. The active incident status display shall include, at a minimum:	
1. Time incident received or elapsed time (user option).	
2. Incident number.	
3. Priority.	
4. Incident type.	
5. Incident type description.	
6. Talk group incident assigned.	
7. Location.	
8. Units assigned.	
9. Status times associated with each unit.	

B. The dispatcher shall be able to quickly select any incident from the display for updating.	
C. The dispatcher shall be able to scroll the active incident display, if there are more incidents than can be displayed at one time.	
RECENTLY CLOSED INCIDENT MONITOR	
A separate portion of the display or a window shall display a summary of the last (user configurable number or time limit) incidents that have been closed.	
A. The closed incident status display shall include, at a minimum:	
1. Time incident received	
2. Time the incident was closed	
3. Incident number.	
4. Priority.	
5. Incident type.	
6. Incident type description.	
7. Talk group incident assigned.	
8. Location.	
9. Units assigned.	

10. Cleared times associated with each unit.	
CHANGING DUTY ROSTER AND SHIFT CHANGES	
A. The CAD shall provide an ability to quickly change the duty of a single unit, including on or off duty, area of coverage, personnel assigned, and whether recommended for dispatch.	
B. The CAD shall also provide the ability to build a shift roster.	
C. The rostering must occur by individual agency.	
D. The capability to build the roster at least one month prior to the shift must exist for all Law Enforcement/Fire/EMS personnel. Entry of the roster should be made by a web client or Mobile Data Terminal. The intent is to allow the field supervisor to enter the data and not the dispatcher.	
E. The system must support a method to delete the previous shift personnel from the roster at a scheduled time each day to be set by the CAD administrator.	
F. The scheduled time must vary by agency.	
G. The shift roster should be maintained in the system for later access and analysis. Rosters should be available online for 24 months and available for archive to other media.	
H. CAD shall alert supervisor personnel if units don't "roster on."	

INCIDENT HISTORY	
A. Once an incident is closed (all units cleared) and incident data is transmitted to CAD Data Warehouse, the software shall maintain the incident's details within the incident history files of the system.	
B. The incident history shall include all information generated as part of the call intake, dispatch, and unit status tracking process specific to each incident.	
C. The incident history file shall allow for the online inquiry and display of closed incidents.	
D. Incident history recall shall be by:	
1. Incident number,	
2. Date and time or range of date and time	
3. Address,	
4. Telephone number of caller	
5. Grid,	
6. Map page,	
7. Unit,	
8. Station, battalion, etc.	

E. Security shall control which users have the ability to access closed incidents and which users have the ability to update or modify closed incidents.	
F. Incident history must be stored in a commercial, industrial strength relational database management system.	
G. A set of standard reports must be provided that can routinely generate tables, statistics, maps, and charts that are typically required to manage a communications center.	
H. Tools should be available for easily creating ad hoc reports.	
I. Vendors shall list the standard reports contained in the proposed system, and the ad hoc report generation capabilities of the proposed system.	
J. The system shall provide the ability to add comments to a CFS event without reopening the original CFS event	
UNIT HISTORY	
A. The CAD system shall capture non-incident and incident related unit history in a unit history file.	
B. The unit history shall include all statuses identified in Section 0, Incident and Unit Status Maintenance.	
C. The unit history file shall allow for the online inquiry and display of unit activity. Information contained in this file may also be printed on any printer within the Communications Centers or other workstations that have access to the CAD system environment.	
D. The unit history information should also be stored in a commercial, industrial-strength relational database management system.	

E. Standard and ad hoc reporting capabilities that access unit history information must be provided.	
F. The Vendor shall list the standard reports contained in the proposed system, and the ad hoc report generation capabilities of the proposed system.	
G. The Vendor shall list the standard reports contained in the proposed system, and the ad hoc report generation capabilities of the proposed system.	
TRANSFERRING INCIDENTS	
There are times when control of an entire incident and all units assigned to the incident needs to be transferred to another dispatch group or position. The CAD system shall provide this functionality, using a single, abbreviated command.	
TRANSFERRING DISPATCH POSITION RESPONSIBILITIES	
CAD shall provide the ability to transfer an entire dispatch group or position responsibilities and all associated units and incidents to another dispatch group or position.	
SUPPLEMENTAL RESOURCE REQUESTS	
A. The system shall be able to store, and easily retrieve, a file for standardized and ad hoc supplemental resources that may be recalled and requested as needed for services not available from the public safety agencies.	
B. The system shall make request and “dispatch” of said resources on the basis of the unique type of service needed, the geographic proximity to the site of the needed service, or a rotation of the unique service providers of a given type—or, a combination of methods.	

C. The system shall be able to create a unique or supplemental unit designation in real time.	
RESOURCE ROTATION LIST	
The proposed CAD system shall contain a rotation function that will distribute the resource jobs to r companies on an equitable basis within jurisdictions and within areas within jurisdictions.	
D. The dispatcher shall be able to query the system as to the next resource company to be called for each tow area.	
E. Upon use of a resource company, the system shall move to the next company for the next resource in that area.	
F. The system shall also allow a resource company to be placed on suspension from the resource rotation and be automatically reinstated at a particular date and time.	
G. If the resource company is unavailable, the dispatcher shall be able to by-pass that company and retrieve the next company from the list.	
H. The system shall keep a record of reasons why a resource company was chosen or skipped.	
I. The system should be able to put a resource company back at the top of the list if the company is canceled before getting to the scene.	
J. The system shall allow the dispatcher to select any resource company and not rotate them if the selection is due to the owner's request of that resource company.	
K. When a resource company is used, the log entry screen shall be automatically displayed.	

L. If the resource is associated to an incident, the resource entry shall be associated to the incident in CAD.	
HOSPITAL STATUS / AVAILABILITY	
A. The system should track hospital diversion status and hospital bed availability, and provide hospital transport recommendations.	
B. The approach taken by the vendor should be accordance with the American College of Surgeons: Guidelines for Ambulance Diversion – http://www.acep.org/content.aspx?id=30038	
PATIENT TRACKING	
A. The system shall have the ability to track EMS patients from the scene to their destination or disposition.	
B. The system shall include the ability to capture patient identifying information.	
C. The system shall meet Federal HIPAA (Health Information Portability and Accountability Act) requirements for data security where appropriate.	
COMMUNICATIONS SUPERVISION	
Functionality required for the Communications Supervisors includes all of those shown above as required under Incident Receipt and Dispatching plus:	
A. Capability to monitor any workstation on the CAD system.	
B. Capability to disable any remote access workstation,	
1. By workstation identifier	
2. By IP address	

3. By operator logged on.	
C. Capability to disable any mobile data computer,	
1. By workstation identifier	
2. By IP address	
3. By operator logged on.	
D. Ability to interactively determine the workload and response times for dispatchers and call takers.	
E. Capability of making changes to CAD system support files based upon applicable security.	
F. Ability to display at least the ten most recent incidents occurring throughout the City.	
G. Capability of studying current system loading and system resource utilization.	
H. Ability to accept automatic notifications of “user-defined serious” nature incidents.	
I. The shift supervisor shall automatically be alerted to any of the following calls:	
1. Calls taking longer than a user-defined amount of time to enter.	
2. Unit needs assistance calls.	

3. Incidents pending longer than a user-defined amount before dispatch.	
4. Other incidents of interest defined by call type.	
J. The system should provide the capability to create a "pass down log" for communications. This would allow for information exchange between shifts, identify working issues, etc. Report would populate from CAD, as well as drag and drop from CAD screens.	
K. The system shall provide the ability to create and maintain automatic reminders of scheduled activities (e.g. radio tests) based upon the following schedules:	
1. Daily	
2. Weekly	
3. Monthly	
4. Annually	
5. User-defined (e.g. 30 minutes, 15 minutes, first day of the month)	
6. Multiple activities or reminders per time slot	
INTEGRATED MAP DISPLAY (IMD)	
A. The CAD system must have a seamlessly integrated computerized map, based upon the City provided GIS.	

B. The IMD must support the automatic display of units as derived from the AVL system.	
C. The system shall be capable of supporting coordinate based operations including X,Y coordinates, Latitude and Longitude as well as the National Grid	
D. The IMD will be displayed at each operator position.	
E. A map-centric IMD, in which the GIS/Map is fully integrated with the CAD system, is preferred by the City. However, mapping component systems, in which a separate IMD application is linked to the CAD system, may be proposed.	
F. The geofile supporting the CAD system must utilize the City's existing GIS	
G. The GIS data provided by the City may undergo processing to be "formatted" for use as the geofile by either CAD or the IMD, however, it is not the preferred method.	
H. The map data must be easily imported/loaded from an ESRI Spatial data format (currently ArcGIS 10.0) or accessed directly from the Spatial Data Engine (SDE). Note that the City has an Enterprise Site License for ESRI and SDE is running in Microsoft SQL Server Database.	
I. The City shall be provided tools that allow for easy importing updates to the map data.	
J. The IMD system shall have the ability to display all:	
1. Street/roadway data (such as freeways, major streets, minor streets, curb to curb, parcel data and address, etc.),	

2. Hydrology data (such as rivers, streams, drainage canals, lakes, etc.), and	
3. All railroads, trails, bridges, etc.	
4. Street/roadway data shall include all entrance/exit ramps for controlled access highways, dead ends and cul de sacs, etc.	
5. The system shall support the display of aerial photographs and raster images.	
K. The IMD shall refresh the screen within two seconds when new or updated data is received.	
L. Pan and zoom – the system must provide a mechanism for panning and zooming around the area covered by the IMD.	
M. Default zoom scales – the IMD should provide a default set of zoom scales.	
N. As users zoom in and out of these zoom scales, different (appropriate) information is displayed on the map. For example, when viewing the entire dispatch area, only major roads and freeways are displayed. However, when zooming into a neighborhood, building footprints, individual address numbers, street curbs, and other detailed information is displayed.	
O. The system administrator must be able to modify the default geographic layers that are displayed at each zoom scale.	
P. Display floor plans and site detail information for incidents.	

Q. Zoom and pan around the jurisdiction by use of mouse drag on slide bar or mouse click on appropriate directional icons.	
R. Center on an address or location when the dispatcher selects the associated event.	
S. Center on a specific unit if that unit or personnel assigned to that unit's portable emergency call button is activated.	
T. Center on a specific event location when the dispatcher recalls the associated event from the CAD status monitor.	
U. Display different layers of graphic information such as Law Enforcement, Fire and EMS jurisdictional boundaries and response zones, hydrant locations, unit locations, driveways, building locations, building footprints, etc.	
V. The digital map must be able to display all or selected sets of validated locations entered into the CAD system.	
W. The map shall be able to display all boundary layers:	
X. The system must support a practically unlimited number of boundary types. Each boundary type shall be treated as a unique geographic layer.	
Y. Typical boundary file layers shall include:	
1. Response areas.	
2. Jurisdictional (County, City, University, etc.).	
3. Statistical (census tracts, census blocks, etc.).	

4. Administrative (public areas, parks, etc.).	
5. Commercial (mall, zoo, etc.).	
6. Gated communities.	
7. Zip Code	
Z. Point Locations - The system must support a practically unlimited number of point layers. Each point location type shall be treated as a unique geographic layer. Examples are:	
1. Landmarks: - Common names, building numbers, and landmarks, etc.	
2. Fire hydrants – The IMD must display all Fire Hydrants as well as hyperlink the hydrants to a file containing detailed hydrant data, including hydrant/main size, flow, status, etc.	
AA. The map must be able to display Iconic symbols:	
1. Units and stations – The system must support multiple icons representing marked and unmarked law Enforcement cars, ambulances, fire apparatus, fire hydrants, fire stations, schools, etc.	
2. These icons shall be proportionately sized to match the map size. When the map is displaying the entire dispatch area, all vehicles shall be clearly displayed.	
3. Each icon shall display the unit identification number, either within, immediately above, or immediately below the icon.	

4. All structural icons must display the facility name (i.e., Fire Station 2, Avery Elementary, etc.) within, immediately above, or immediately below the icon.	
BB. Incidents – The system must support multiple icons representing Law Enforcement, Fire, and EMS incidents.	
CC. Ideally, different icons will be used to display more specific information about the nature of the incident (i.e., gun for armed robbery, burning car for vehicle fire, a building with flames representing a structure fire, etc. if desired by the system administrator).	
DD. The system shall display the associated call's incident number along with the icon.	
EE. Vehicle clustering – The system must provide a "cluster" icon for multiple Law Enforcement and/or Fire and/or EMS vehicles at one site. Each icon must uniquely represent the presence at the site of multiple vehicles, and, by mouse click, cause a window to pop up which will display data about all vehicles represented by the icon.	
FF. Incident clustering - The system must provide a "cluster" icon for multiple incidents at one site. Ideally, different icons will represent multiple events and, by mouse click, cause a window to pop up which will display data about each incident represented by the icon.	
GG. The system shall be capable of displaying coordinates anywhere on the map with mouse over.	
CLEAN / NCIC ACCESS	
A. All authorized CAD Workstations shall have the capability of accessing the Commonwealth Law Enforcement Assistance Network (CLEAN) via the CAD computer and performing all authorized CLEAN/NCIC functions.	
B. The CAD system shall automatically send a query to CLEAN/NCIC for registration and wants and warrants checks when a license plate	

and/or person's name is entered.	
C. Access to CLEAN functionality must be controlled by sufficient security.	
TRANSPORT MILEAGE	
The Response shall include a utility that provides actual mileage traveled by mobile units during specific operations (i.e., patient/inmate transports). The Response shall explain how this function is accomplished and how Dispatch and field users will use it. The transport mileage should be in tenth of a mile increments.	
CONTACT MANAGEMENT DATABASE	
The system shall provide a contact management database that includes a telephone directory for personnel and agencies the City must contact. Information stored in this directory shall include the name, agency, multiple telephone numbers, and types of telephone number (home, work, pager, cellular, email, websites, etc.). The system operator shall be able to retrieve the telephone information by complete or partial name or agency. Contact database access shall be available to MDC-equipped field units via the MDCS.	
GEOFILE REQUIREMENTS	
EXISTING GIS ENVIRONMENT	
The existing GIS environment is SQL based, ArcGIS 10.0and SDE. It is required that CAD vendors utilize this environment for the GIS component of their geo-file.	
DIRECT ACCESS	
Given the size and complexity of the spatial database, it is highly desired that the proposed system be capable of accessing and utilizing the existing Spatial Data Engine directly, that is without any conversion to a CAD based tabular geofile.	

COORDINATE BASED GEOFILE	
The CAD system must support coordinate-based operations, as the City requires that the proposed CAD system use advanced Geographic Information System (GIS) and spatial analysis techniques. The agencies in the City will implement an Automatic Vehicle Location (AVL) system that is based on a Global Positioning Satellite (GPS) system that would be fully integrated with the proposed CAD system. This system would require a very accurate Geofile to display near real time vehicle location information.	
AVAILABILITY OF GIS TOOLS	
The Respondent shall include with its Response all GIS tools necessary to create and maintain the spatial data infrastructure necessary to support the CAD system as described, and maintain additional data not maintained by the City's GIS staff. The proposed CAD system's Geofile processing module shall provide the capability to establish and maintain at a minimum:	
A. Response Zones	
B. Police Areas	
C. Street Networks (including center lines as well as all impedance data) including:	
1. Directionals (one-way)	
2. Speed limit	
3. Likely travel speed	
4. Road closings	

5. Overpass / underpass	
D. Railroads and Trails	
E. Law Enforcement Jurisdictions	
F. Fire Jurisdictions	
G. EMS Jurisdictions	
H. Waterways and other hydrographic data	
I. Point or Polygons identifying special locations	
J. Other geographical layers using typical mapping/GIS tools.	
The Vendor shall initially set up and create the required geographic information using data provided by the City, data available to the Vendor, and the Geofile processing tools of the proposed CAD system. However, once installed, the Geofile shall be capable of being updated by accessing source GIS data without requiring assistance from the selected Vendor and without overwriting additional data unique to this application. The intent is for the system to access the SQL Spatial database source already maintained by the City's GIS department.	
GEOFILE MANAGEMENT SYSTEM REQUIREMENTS	
The Geofile management system shall support the following (at a minimum):	

POINT WITHIN POLYGON	
The proposed CAD system must support the capability to identify the location of a point (call for service or other police activity) and all relevant polygons within which it is contained. These will include at a minimum:	
A. Local Police, Fire and EMS jurisdictions and contact information	
B. Police Patrol Zone	
C. Fire Box Alarm Zone / Response Area	
D. Municipality jurisdiction	
CROSS STREET IDENTIFICATION	
The proposed CAD system's Geofile structure shall support the return of both cross streets when an address is given which fits into a valid address range.	
UNIT WITH SHORTEST TRAVEL TIME	
The proposed CAD system must be able to satisfy dispatch recommendations based upon the unit with the least travel time based upon the position of the units when the call for service is selected for recommendation and dispatch. This recommendation shall use the street network and all impedance data available.	
UNIT ROUTING	
The proposed CAD system and MDC system shall support the ability to identify the correct / fastest routing from a unit's location at the time of inquiry to another fixed point (call for service or other activity) at any given point in *time*. The system shall be capable of transmitting this data to the mobile data device of the units recommended.	

SPATIAL SEARCHES	
The proposed CAD system must support the utilization of spatial searches for identifying hazards, duplicate calls, etc.	
HYPERLINKING OR CROSS-REFERENCING	
The system shall support the hyperlinking or cross referencing of any unique geo-spatial item (point, street segment, polygon, etc.) to a specific file or files (drawings, text data file, etc.)	
LAYER VARIATION BASED ON TIME OF DAY / DAY OF WEEK	
The CAD system shall support the automatic (or with minimum keystrokes) the changing of certain polygon layers based upon the time of day or the day of week.	
PARCEL LEVEL ADDRESSES	
A. The Geofile of the proposed CAD system should support parcel level GIS information, in which the approximate location of the front door of all the parcels is stored in the Geofile.	
B. The CAD system must be able to use this information for address validation and to determine an incident's location.	
C. This information is only available for selected locations. The Respondent should delineate any issues lacking a complete data set would cause.	
BUILDING FOOTPRINTS	
A. The Geofile should support the storage of building footprints and other images (pictures of specific buildings) that are associated with specific addresses.	

B. This information is only available for selected addresses. The Respondent should delineate any issues lacking a complete data set would cause.	
C. The vendor shall specify the types of files its software can link to.	
ASSIGNING X, Y COORDINATES TO VALIDATED ADDRESSES/LOCATIONS	
Once an incident location is entered into the proposed CAD system, the location verification step shall add the coordinates of the incident's location to the incident record and display an incident icon on the integrated map display.	
DUPLICATE INCIDENT DETECTION	
A. During incident entry process, the proposed CAD system shall make a duplicate incident check based upon the location and/or coordinates of the incident.	
B. If, during incident initiation, a potential duplicate incident in the area is found, the user shall be notified via a prompt and shown a list of the potential duplicate(s).	
C. The CAD system must have a parameter (modifiable by the system administrator) specifying the distance in number of feet or similar function, from the location of the incident for duplicate incident detection.	
STREET CLOSURES	
A. The system shall provide the ability to easily close streets from a dispatcher or supervisor workstation.	
B. The street closure should immediately propagate to all other system users.	

C. All geographic activity such as routing or recommendations should immediately use the street closure as a factor in the system's algorithms.	
FIRE HYDRANTS	
A. The geofile shall support the assignment of shall be assigned specific X-Y coordinates to all fire hydrants.	
B. The geofile must support linking the hydrants to the closest street address.	
C. The file must also support detailed hydrant data, including hydrant/main size, flow, status, etc.	
GEOFILE VALIDATION	
Given the extreme importance of the geographic data supporting the CAD system the following requirements are in place:	
A. The vendor will be required to supply the City with a CAD map analysis tool that will accurately identify any errors in the GIS basemap that will interfere with proper identification of the required units and with proper identification of the correct response districts.	
B. The vendor will be required to work with the client to conduct an analysis of the GIS database and agree upon a course of remedial action.	
C. The vendor will be required to work with the client to analyze the results of any remedial action taken to correct database errors and agree that such errors appear to have been corrected.	
D. A formal "Go-Live" authorization will not be provided by the client until these steps have been taken and the results agreed upon by both the client and the vendor.	
E. The vendor shall discuss any ability to report updates or other changes from the CAD environment to the City's planning	

department.	
GIS LICENSING	
The vendor shall identify any ESRI or client or server licensing requirements with the deployment of their solution.	
NECESSARY GIS DATA	
The vendor shall supply a list of the GIS data necessary for the systems' operation, broken down by critical and enhanced data.	
AUTOMATIC VEHICLE LOCATION	
The CAD system shall include and Automatic Vehicle Location (AVL) Component. The AVL shall include:	
A. The ability to receive coordinate information from the mobile units and display this information on the IMD in near real time mode.	
B. The capability to filter unit display on the IMD to only those units that dispatcher is controlling.	
C. The ability to record historical data and provide "playback" capability.	
D. The capability to filter the playback to a single or specified group of units.	
E. The ability to configure and administer the AVL component.	
F. The ability to interface with other AVL systems, such as those used by private ambulance fleets or aeromedical providers.	

MANAGEMENT INFORMATION SYSTEM REPORTING	
This section includes the general records management and management information system requirements of the CAD system for support of Law Enforcement, Fire and EMS operations. The following functional requirements for the compilation of necessary information to produce specified reports, tables, charts, graphs, and maps shall apply to all CAD subsystems and modules. That is, the same mechanisms described in this section shall be accessible to each module and subsystem in the CAD. Unless otherwise noted, these requirements shall apply equally to Law Enforcement, Fire and EMS activities.	
A. The intent of the CAD Management Information System shall be the compilation of data and statistical information regarding agency activities for decision support and administrative decision-making process.	
B. Vendor shall indicate the method utilized by, and where appropriate, provide sample outputs of how their proposed CAD meets the requirements specified in the following subsections	
DATA STORAGE LOCATION	
A. Generally, all reports that will be discussed in this section will be created using data that is stored in the data warehouse portion of the CAD System as described throughout the RFICE. This is done to ensure that reporting operations will not interfere with the operational characteristics of the CAD System.	
B. The vendor shall describe their system's capabilities to utilize a warehouse type environment for the reporting components of the CAD system.	
REPORT GENERATION	
The CAD system shall include a set of report generation tools that provide the following minimum capabilities:	

REPORT PRINTING AND DISPLAY	
A. The proposed CAD shall be capable of generating reports for both screen display and printing.	
B. All reports shall be capable of screen display and printing.	
C. The system shall be capable of efficiently exporting report data to a variety of file formats, including, but not limited to Microsoft Office Suite, Open Office and PDF.	
D. Any limitations shall be fully explained in the response to this RFICE.	
MENU SELECTABLE	
Reports in the proposed CAD shall be menu selectable for content and generation parameters.	
COMMAND MODE	
The report generator of the proposed CAD shall also include a command mode providing for the generation of a report using selectable parameters from any system files or information not shown as menu selections including narrative, thus providing the capability of performing a data mining function.	
GRAPHICAL CONSTRAINT SELECTION	
The system shall include reporting based on graphical constraint entry. For example, the user shall be able to graphically choose an area within the City (by choosing the area on a map display) and display CAD statistics for that area (Community Reports).	

INCLUSION OF CITY INFORMATION	
The report generator of the proposed CAD shall allow for including City-specific information on reports, charts, graphs, and maps produced by the system. Such information includes, but is not limited to, report header data and text, City Seal, Department Logos, etc.	
DATA AVAILABILITY TO OTHER SYSTEMS	
A. The report generator of the proposed CAD shall have the capability of making CAD data available for other systems and PC applications, using the Microsoft DDE, OLE, ODBC, ASCII, or comparable standards for dynamic data exchange. Examples of the types of software that would access the system's databases through DDE, ODBC, or other available techniques include Microsoft Access, Excel, FoxPro, Seagate Crystal Reports, etc.	
B. Vendor shall fully explain any limitations and available functionality for meeting this requirement in its proposed system.	
PLAIN TEXT SEARCH CAPABILITIES	
A. The proposed CAD shall include a mechanism for completing plain-text searches. The proposed system shall include the ability to search narrative information and all other fields for the occurrences of user specified words or partial words.	
B. It shall be possible to retrieve or find all narrative information that contains combination of two or more words/phrases (e.g., find all occurrences of "red" and "Honda").	
REPORT NARRATIVE AND TITLE	
The proposed CAD shall include a suitable mechanism for the entry of a unique report narrative and report title for each report. Although a default narrative and title should be available, the City desires the capability of overwriting these defaults prior to the printing of any report.	

PREDEFINED REPORTS AND MINIMUM REPORTING CAPABILITIES	
The proposed CAD shall provide a number of pre-defined reports, custom tailored to meet the needs of the City.	
CAD STATISTICS	
The proposed system shall include the ability to produce counts and statistical information to be tracked and maintained on-line. The system shall maintain counts of CAD activity.	
COMPREHENSIVE REPORTING TOOLS	
The proposed CAD shall include comprehensive reporting tools in each module whereby City personnel can create “pre-defined” reports. The available reports shall be robust, flexible, and easily initiated.	
AUTOMATIC / SCHEDULED INITIATION	
The system shall provide the capability for all reports to be scheduled for automatic initiation by time of day, day of week, etc., and directed to any printer(s) accessible through the City’s network.	
SELECTION CRITERIA	
It shall be easy to change selection criteria and parameters such as starting date and time, ending date and time, subset of data to be extracted and aggregated, etc.	
STATISTICS AND LIST GENERATION	
The reports shall include summarizing and sub-total statistics, as well as list generation.	
ADVANCED REPORTING FUNCTIONS	
A. The City is particularly interested in trend analysis, data	

aggregation, and other more advanced reporting functions.	
B. Vendor shall describe any of these advanced features that are available within its proposed system.	
GRAPHICAL OUTPUT REQUIREMENTS	
In addition to tabular reports, the system shall include the ability to either directly generate maps, charts and graphs or to generate maps, charts and graphs through easily invoked PC applications such as Microsoft Excel.	
SAMPLE ADMINISTRATIVE REPORTS	
Vendor shall identify the type of standard (pre-defined) reports available in the proposed system and include sample administrative reports for review/evaluation by the City.	
AUTOMATIC REPORT EXECUTION	
The proposed system shall have the ability to start reports automatically (at a predetermined time and day, as well as by a transaction) and to print the resulting output at more than one location.	
EXCEPTION REPORTS	
A. The CAD reporting system shall allow the setting of user thresholds for given activity identifiers.	
B. A daily, weekly, and monthly report governing exceptions that exceed the thresholds will be produced for each predefined (by the system administrator) department/division in the City. The purpose of these reports is to notify administrative personnel of occurrences within their departments/divisions and the earmarking of trends that would otherwise go unnoticed.	
C. Thresholds may be based on calculated results such as response time or time from call pick up to dispatch.	

WEB-BASED REPORTS	
The proposed system shall also include Web-based reports. The Web-based reports shall be menu driven, available to all authorized users and once requested on-line, they shall be available for printing.	
TREND ANALYSIS/FORECASTING	
The proposed CAD shall include the ability to extract recent historical incident occurrences and to trend and pattern statistics and, when possible, to forecast future activity.	
MAPS	
A. The CAD system shall include an easy-to-use map-generation function that is accessible from all relevant system modules.	
B. System users shall be able to extract desired data, reformat it as necessary, and produce a map customized (tailored) to the City without having to depend on programming or technical personnel or Vendor assistance.	
C. Ideally, certain maps will be menu selectable with “step-by-step” instructions available to “walk the user” through the production of the map.	
D. At a minimum, the system shall support either the direct production or, through an easily invoked (e.g., seamless) third-party mapping tool, the creation of the following general types of maps and geographic analysis	
THEMATIC MAPS	
Thematic maps are maps of geographic boundaries (e.g., response zones, Police districts, neighborhood watch areas, fire box alarm zones, company areas, etc.) that cover the entire City or geographic subset and that are color-coded or differentially shaded to reflect the data contained within each boundary. For example, a map showing the average response time	

in each Police district in the City.	
AUTOMATIC PIN MAPS	
Pin maps are maps displaying, through icons or other symbols, the location of specific occurrences in the City or geographic sub-area. For example, a map showing the location of all fire dispatches that occurred in the City during the last two months.	
SPATIAL DATA AGGREGATION	
The system shall provide the ability to aggregate extracted information into more meaningful statistics. For example, generate crime rates by district statistics by aggregating individual crimes occurring in each district of the City.	
TREND ANALYSIS/FORECASTING	
The system shall provide the ability to extract recent historical incident occurrences and to trend and pattern statistics and, when possible, to forecast future activity.	
SYSTEM MESSAGING	
OPERATIONAL MESSAGING	
A. The system shall be capable of messaging between:	
1. Operator positions within this PSAP	
2. Mobile units on the MDCS included with this Response	
3. Administrative workstations attached to this CAD System	
4. Remotely or Web Connected CAD workstations.	

B. These messages may be single line or multiple lines.	
C. The sender of the message shall be able to send the message to:	
1. A particular person,	
2. A single position or workstation,	
3. A role (i.e. dispatcher controlling sector 1 or dispatcher controlling this unit, etc.)	
4. A user classification (i.e., all dispatchers),	
5. User defined groups,	
6. Groups of classifications, or all system users.	
D. The system shall provide a directory of persons, positions and groups available to be messaged.	
E. The sender shall have the capability to request a read receipt if the message is to only one user.	
F. The system shall not permit the user to request a read receipt if the message is to be routed to multiple positions or units.	
G. The recipient of the message shall be provided with an audible and visible alert when the message is received.	

H. The audible and visible alerts shall be user definable.	
I. The system shall provide the capability to allow a recipient to:	
1. Save the message,	
2. Reply to the message with minimal key strokes	
3. Forward the message to recipients as described above,	
4. Direct the message to a printer, or	
5. Add the message to an incident	
J. The content of the message will include:	
1. The sender's identification	
2. The sender's computer ID	
3. The date and time sent, and	
4. The message itself.	
K. Transmission and receipt of a message shall be logged to the system history log file.	
L. The content of the message shall be logged to the system history log file.	

M. If a message is routed to a specific individual or position and the individual or position is not logged on the system the sender shall be notified and given the option to queue the message for future delivery.	
ADMINISTRATIVE MESSAGING	
A. The system shall be capable of processing administrative messages. Administrative messages are not as time sensitive as the operational messages, but may also be several lines long.	
B. Senders shall be able to send messages to:	
1. A particular person,	
2. A single position or workstation,	
3. A role (i.e. dispatcher controlling sector 1 or dispatcher controlling this unit, etc.)	
4. A user classification (i.e., all dispatchers),	
5. User defined groups,	
6. Groups of classifications, or	
7. All system users.	
C. Messages shall be accepted regardless of whether the recipient is logged onto the system at the time they are sent. An interface to the City's E-mail server may be utilized to fulfill this requirement, but operators must be able to access their electronic mail from any	

system computer.	
D. It is desirable for the administrative messaging capability to interface with the City's E-mail server using SMTP compliant mail / message exchange, so that system operators may send messages to other City staff.	
E. The system shall allow for administrative messages to be sent to station rip and run printers and administrative printers by individual printer and groups such as battalion / dispatch group / etc.	
REMOTE ACCESS	
A. A remote access capability shall allow personnel with the proper security level to access the CAD system and obtain current and historical information relating to incidents and unit status,	
B. A remote access capability shall allow personnel with the proper security level to access the CAD system and perform system maintenance, diagnosis, and repair as required.	
C. An audit trail of remote access activity such as login, logout, account, transactions and IP address should be captured to the system log file.	
D. Each of the Fire and EMS Stations serving the City shall be provided access to the system, with expandability for up to four more stations in the next five to seven years.	
E. The CAD system shall be able to support access for up to 200 remote CAD workstations. This access will be achieved through leased-line LAN/WAN or via the Internet with a VPN. The computers in the stations shall function primarily as administrative workstations or limited access workstations as described in sections 0 and 0 of this RFICE.	
F. CAD security shall limit access to the system and provide access only to those functions that have been authorized. The authorized	

functions shall be user definable by the system administrator and include functions such as displaying incident information, displaying maps, staffing Fire/ EMS units, or sending operational messages.	
ADMINISTRATIVE OFFICES	
Access to the system shall be provided for City Law Enforcement, Fire and EMS administrative offices. This access will be achieved through the City's existing LAN/WAN, leased services or the Internet with a VPN connection. If possible, the application to access the system should run on the existing personal computers located in these offices. CAD security shall limit access to the system and provide access only to those functions that have been authorized. The authorized functions shall be user definable by the system administrator and include functions such as displaying current incident information, current staffing information, or a snapshot of the status monitors.	
DYNAMIC LOCATIONS	
There are situations that arise that will require members of management from the agencies supported by CAD system to access the system via their laptops from non-defined locations. The system should provide the capability for personnel to access the CAD system via the Internet with the use of a Virtual Private Network. Once connected, these laptops or workstations shall have capabilities similar to those identified in Sections 0 CAD Administrative Workstations and 0 Limited Access CAD Workstations. The vendor shall explain how the proposed systems can provide this capability.	
SYSTEM STATUS MANAGEMENT (DYNAMIC RESOURCE DEPLOYMENT)	
A. The system shall build multiple system status plans (e.g. by hour of day, day of week) that define the levels of resource availability and which posts/stations [Shall/Should] be prioritized for coverage.	
B. The system shall monitor, on a continuous basis, each plan in effect and alert the dispatcher if the plan goes "out of compliance" (i.e. units not in their proper position).	

C. The system shall include the capability for multiple plans by unit resource type.	
EXCEPTION REASON TRACKING	
A. The system shall identify and require an exception in any case when user defined response time standards are not met.	
B. The system shall establish a system administrator-defined list of exception reasons established for each CAD time interval.	
PUBLIC SAFETY FLIGHT TRACKING	
A. The system shall adhere to the FAA and CAAMTS requirements, if required by agency policy.	
B. The system shall have an interface access to, and be able to record, flight weather.	
C. Commission on Accreditation of Medical Transport Systems – http://www.camts.org	
GEO-FENCING	
A. The system shall provide geo-fence creation tools that allow the use of polygons, circles, ellipses, and rectangles.	
B. The system shall display details about a resource to aid in identification, location and purpose.	
C. The system shall facilitate the creation of multiple, coexisting, overlapping geo-fences.	
D. The system shall support unique geo-fence names and each geo-fence. The system shall be visually distinct.	

E. The system shall generate an alert whenever a vehicle or resource enters and/or exits a geo-fence.	
F. The system shall include alerts that consist of:	
1. Unique visual and audible identification	
2. Resource identification	
3. Geo-fence Identification	
4. Current resource position	
5. Timestamps of entry and exit of geo-fence areas	
6. Ability to clear alerts and history from view while maintaining historic records as needed	
G. The system shall include standard GIS functions, such as exportation of parcel Information, data fields, and historic records from geo-fence in agency based required formats.	
H. The system shall be able to alert personnel though technologies such as text messaging or email.	
I. The system shall provide the ability to create, manage and record geo-fence areas to track the entry and/or exit of GIS based resources.	
J. The system shall provide informative and manageable alerts to appropriate personnel through visual and audible representation.	

MOBILE DATA COMPUTER (MDC) REQUIREMENTS

OVERVIEW

There are currently approximately 837mobile data computers deployed in the field. Wireless connectivity is provided by leased services (Aircards) provided by Verizon Wireless. Police, EMS and Fire agencies have identified the potential benefits that a mobile data solution can provide, but the current solution is not providing the efficiency or reliability that is needed for effective mobile computing.

This section provides the identified needs and requirements for mobile computing, along with the associated interfaces and system functionality. The requirements include providing public safety personnel deployed in the field with access to national, state, and local crime databases and other relevant Law Enforcement, Fire, and Emergency Medical databases, real-time messaging, office automation, and other support for routine daily functions.

The City will be responsible for providing any mobile data computer hardware (including mobile devices, modems, networks, etc.) that is required for the system. Any mobile data computer hardware, operating system software, databases and associated services included in the response to this RFICE shall be separately priced.

GOALS AND OBJECTIVES

The goal of the MDCS is to provide personnel with additional information in the field, to improve efficiency, and to increase the safety of the environment for the first responders. Access to state and federal databases, as well as the ability to query other local databases, along with the ability to interface with CAD and provide message and location data for AVL are all critical functions. This will enable personnel to perform more functions in the field, such as updating status and reporting times more accurately. Access to additional information and documentation will allow field personnel to become more independent, more efficient, and improve the safety and effectiveness of first responders in the field.

The MDCS shall also include software tools that allow field personnel to track their time and self-initiated activities. Tools should be provided to

field supervisors to help them monitor, enhance, and summarize their staff's activities and to measure productivity.	
Although the primary device utilized to access the mobile data system will be mobile data computers, the vendor is requested to provide information regarding the use of other smart phone devices.	
MOBILE DEVICE QUANTITY PRICING	
The vendor shall provide quantity pricing and pricing break points for the mobile data clients. (For example the vendor will provide the per unit price for 1-100, 100-250, 250- 500, etc.)	
FUNCTIONAL REQUIREMENTS	
The proposed MDCS shall meet the following functional requirements:	
WINDOWS FUNCTIONALITY	
The system shall support the use of:	
A. Cut / copy / paste,	
B. Keyboard functions,	
C. Custom toolbars / macro support,	
D. Windows-style GUI.	
E. Drop down menu pick lists for all fields that support a predefined set of user entries.	

F. Data shall be capable of being imported or exported from other applications such as Microsoft Word or Excel.	
1. The Vendor shall describe how the proposed system meets this requirement and any exceptions or clarifications that may be required as a result of host system limitations.	
G. Function keys can be added, deleted, reassigned, and configured by a City system administrator.	
H. The application shall support use of a touchscreen for quick and direct access to functions.	
I. Buttons and icons will be sized for effective use with a touchscreen display	
.	
J. A common user interface methodology shall be supported across different user interface screens.	
K. Each functional screen shall have, to the greatest extent possible, the same look and feel as the other functional screens provided.	
DATA VALIDATION	
A. The MDCS should validate entered data.	
B. The system should not allow the input of incorrect data (i.e., date of February 30, marking en route twice, etc.).	
C. The MDCS shall include edit rules to assist in the capture of accurate data.	
FIELD REFERENCE MATERIALS	
The MDCS should provide reference document with hypertext access to field personnel.	

Typical field reference materials include:	
A. Departmental policy manuals and Standard Operating Procedures (SOPs).	
B. State and local statutes.	
C. Phone numbers (reverse look-up).	
D. Contact Information.	
E. Hazardous Materials.	
F. Preplans.	
G. City Maps, building layouts, malls, apartment complexes, etc.	
APPLICATION REQUIREMENTS	
A. The client application shall run continuously even when operating other applications in order to facilitate real-time wireless data network monitoring.	
B. The client application shall be able to be selected by a function key / pointing device when operating in any other mode.	
C. The system shall be designed to support the transfer and display of images (i.e. attachment of a digital picture, receipt of a mugshot or photograph, transmit fingerprints or accident scene diagrams) with appropriate data collection device and application.	

D. The system should facilitate field units to prepare / access incident reports, premise inspections, etc., on hand-held portable devices.	
E. The applications shall support text-based searches of the data local to the MDC.	
F. Mobile and portable mobile data system functionality shall be provided.	
G. Provide the ability to print from the vehicle to a remote printer at Headquarters or at a district station.	
H. The system shall support a portable PDA type of device for undercover, bike, or other non-vehicle based users.	
I. The system shall provide an emergency button function that will automatically send the unit identification and location along with a high priority message indicating that assistance is needed.	
J. The emergency message shall be configurable to be sent to the dispatcher and all units or units in a given area.	
K. All applications shall require the use of a user ID and password to gain access to the application.	
L. A single login is desired using existing City user name and password accounts (cached locally). The login shall provide access to all authorized systems based on the user's security and appropriate permissions.	
M. User privileges and system access shall be controlled from the host server, and can be enabled or disabled based on the user's needs.	
N. The database for all mobile data information shall be ODBC compliant.	

ALERTS	
A. All audible alerts shall allow for unique configurable sounds for each functional module and type of alert.	
B. All audible alerts shall be able to be muted and subsequently restored as needed.	
ENCRYPTION	
The data exchanged over the air and stored on the MDC shall satisfy Department of Justice security requirements, including a minimum of 128-bit end-to-end encryption.	
SCREEN ILLUMINATION	
A. The client application shall be designed to operate in a reduced light condition that allows information to be readable but does not illuminate the user or the vehicle.	
B. The display shall also be able to be readable in sunlight conditions.	
C. Users shall be able to easily adjust screen brightness for specific conditions.	
D. The Vendor shall provide a remote management solution to permit 802.11 access points to provide critical operating system updates, virus definitions, and software upgrades without the need of physically touching each device.	
E. This solution shall be able to provide the MDCS administrator the ability to manage these updates remotely and record successful transactions.	

AUTOMATIC VEHICLE LOCATION	
A. Integrated GPS AVL shall provide accurate positional data for all field units. Transmitted data shall include vehicle-tracking information for maintenance purposes.	
B. Personnel with appropriate security or role shall be able to see (through AVL system) where their units are located and to be able to ascertain their statuses.	
C. The MDCs shall have in-vehicle mapping, showing unit location and call location.	
QUERIES	
A. The application shall support all current CLEAN transactions available to mobile devices. Access to this module will be limited to authorized personnel.	
B. The system shall support all NCIC 2000 requirements.	
C. To the greatest degree possible, all displayable response data received by the client application from an interfaced MDCS shall be parsed into fields and presented to the user in a formatted display such that it is in an organized and easy to read format.	
D. The vendor shall discuss how CAD system information provided to the MDCS can be moved or imported into the field based reporting system.	
OPERATOR LICENSE SCANNING	
A. The system shall support the ability to import data from bar coded driver's licenses.	
B. The system shall support the ability to import data from magnetic stripe encoded driver's licenses.	

C. Data captured from the scanning of a driver's license should be automatically inserted into forms in the mobile application such as CLEAN Queries	
OPERATIONAL REQUIREMENTS	
MESSAGE SWITCH	
A. The MDCS shall support the interconnection of existing computer systems with the MDCS for the purpose of enabling mobile user transactions. This functionality is based upon standard network architecture, and it is envisioned that it will be provided using a component that will be referred to in this document as a Message Switch. The requirements in this section cover the anticipated functionality. The requirements contained herein are specific to the Message Switch. However, the Vendor shall be aware that if any requirements as stated in the other sections expand upon the required capacity, functionality, or general operation of the Message Switch, they shall be incorporated.	
B. Vendor shall be aware that any costs associated with computer hardware, operating system software, databases, and associated services included in its Response shall be separately priced.	
MESSAGE SWITCH INTERFACES	
A. The Vendor shall provide an interface to the CAD system that shall support communications with field users for:	
1. Dispatch	
2. Unit status reporting	
3. Unit GPS location reporting	
4. CAD inquiry transactions	

B. The Vendor shall provide an interface to the RMS that shall support communications with field users for RMS inquiry transactions.	
C. The Message Switch shall interface to CLEAN, which in turn will provide access to the National Crime Information Center (NCIC), and the National Law Enforcement Telecommunications System (NLETS).	
1. This interface shall be a computer application to computer application interface using the State's latest approved data communications technology, equipment, and interface protocols.	
D. The Vendor shall provide an interface to the e-mail system (configurable by a system administrator to allow/disallow users) that shall support mobile user e-mail transactions.	
E. This interface shall support e-mail exchange over the agency LAN with the City e-mail system as well as between mobile users.	
F. E-mail shall be capable of being allowed at all times and limited on e-mail size rather than network speed. If larger than a configurable size (i.e.10k), e-mail would only be downloaded if a high-speed network is available.	
G. CAD shall always have bandwidth priority.	
H. The Vendor shall provide an interface to the Internet/Intranet (configurable by a system administrator to allow/disallow users) that shall support mobile user browser access to Internet/Intranet server resources using a provided mobile client web browser.	
I. Internet/Intranet traffic should be capable of being allowed at all times, with CAD being given bandwidth priority. Accessing the Internet/Intranet shall not suspend any other mobile application communications but shall allow concurrent communications.	

MESSAGE SWITCH REDUNDANCY	
The Message Switch shall be offered in a redundant configuration providing automatic fault / failure detection and switchover.	
MESSAGE SWITCH GENERAL TRANSACTION LOGGING	
A. The Message Switch shall log all message transactions in a database with an ODBC compliant interface.	
B. A minimum of ninety (90) days of transactions shall be maintained online.	
C. The Message Switch message log entries shall include the date, time, message type, and mobile unit source or destination ID in addition to the message body or content.	
D. To save storage space, file attachments need not be logged, but a record of the transaction shall be logged including the date, time, message type, mobile unit source or destination ID, and an indication of the file transferred.	
SECURITY	
The system must meet CIJIS Security Policy requirements for Advanced Authentication. Advanced Authentication is the term describing added security functionality, in addition to the typical user identification and authentication of login ID and password, such as: biometric systems, public key infrastructure (PKI), smart cards, software tokens, hardware tokens, or "Risk-based Authentication" that includes a software token element comprised of a number of factors, such as network information, user information, positive device identification (i.e. device forensics, user challenge/response questions.	
SCREEN BLANKING	
A user-controlled screen blank-out mechanism shall be included in the MDCS. This feature shall be easily invoked and turned off.	

LOGIN	
The MDCS shall meet the security requirements of the City and a public safety system. Each user accessing their system and databases must be certified and have a unique user ID and encrypted password.	
A. All data exchanged over the wireless system shall be encrypted "end-to-end" with at least 128-bit encryption excluding any of the encryption schemes found to be vulnerable by industry standard groups.	
B. The system must meet FIPS Publication 140-2 for "Security Requirements for Cryptographic Modules." Standard data processing security measures shall be implemented in the MDCS.	
C. Password complexity shall be configurable by the system administrator and a tool shall be provided for verification of password rules including the following:	
1. Password blanking on input.	
2. System lockout after a specified number of failed login attempts, with automatic notification to the System Administrator which will include date, time, and MDC number. The system administrator will control the number of failed log in attempts prior to lockout.	
3. Ability for users to change their passwords.	
4. The MDCS shall be able to force users to change their passwords at a prescribed time interval (within a maximum of 90 calendar days). The system administrator will control this feature, including the time interval.	
5. Provide a time-out and/or lock-out capability to minimize the problem of sensitive information being captured by a criminal who commandeers a Police or Fire vehicle and MDC.	

6. Be a minimum length of eight (8) characters.	
7. Not be a dictionary word or proper name	
8. Not be the same as the User ID.	
9. Not to be identical to the previous ten (10) passwords.	
D. Due to specific requirements for EMS, Fire and Police, different login screens may be required for the different departments.	
E. A single login will log users into all other systems requiring login functions, unless restricted by individual system security.	
SCANNING AND BAR CODING	
In order to increase officer efficiency, the MDCS shall support the following scanning and optional bar coding capabilities. It should be noted that different hardware scanning devices are required for the different types of scanning capabilities described below.	
BAR CODE SCANNING (SEPARATELY PRICED OPTION)	
The bar code scanning shall provide the ability to read information into appropriate data entry screens by scanning the bar code label. The information shall be capable of being parsed to automatically populate reports as appropriate.	
MAGNETIC STRIP READER (SEPARATELY PRICED OPTION)	
The Magnetic Strip Reader shall provide the ability to load driver's license information into appropriate data entry screens by scanning the magnetic strip included on the driver's license. The information shall be parsed and	

automatically populate citation and field reports as appropriate.	
FINGERPRINT SCANNING (SEPARATELY PRICED OPTION)	
The Fingerprint Scanning shall provide the appropriate fingerprint scanning hardware and applications in the vehicle to provide the following capabilities:	
A. Scan (capture) fingerprints in the field.	
B. Load the captured fingerprints into the currently open form(s).	
C. Transmit the form(s) along with the scanned fingerprints to a central application / database.	
DIGITAL IMAGES	
The application shall facilitate the capture of digital images from vehicles equipped with digital cameras. The captured images shall be able to be associated with the currently open forms. The MDCS shall provide the capability of sending digital images to a distribution list.	
SWITCHING BETWEEN MDCS APPLICATIONS	
A. The MDCS shall allow users to easily and quickly switch back and forth between system applications. MDCS users shall be able to switch between entering data into reports and forms, to handling emergency events, to retrieving query responses, to initiating messages, to updating their status, to reviewing messages, etc., without losing any information that has been entered into the system.	
B. Partially completed reports shall not be lost.	

NETWORK TIME SERVER SYNCHRONIZATION	
Date and time on the MDCS units is critical to a number of processes. For example, vehicle status updates, report status changes, message sent and message received time stamps, etc., shall all be synchronized between the various MDCS units in the system for the date and time stamping to be useful.	
A. It is necessary for the MDCS to synchronize the date and time on all system MDCS units. The MDCS server and/or message switch will obtain the current date and time from the City's Netclock.	
B. The current date and time shall then be used to synchronize all of the MDCS units logged onto the system.	
C. Each MDCS unit's system clock shall be updated based on the Netclock date and time. The synchronization shall occur upon successful login and, thereafter, once per City-specified time interval (e.g., every hour).	
TIME TRACKING FUNCTIONS	
The MDCS system shall provide a time tracking form including the following data entry fields and pass the entered information to the CAD systems:	
A. Validated activity code.	
B. Narrative description of the activity and remarks.	
C. Location / address of the activity.	
D. Case / citation numbers associated with the activity.	
E. Beginning odometer reading.	

F. Ending odometer reading.	
G. Total time worked (hours: minutes).	
H. Total leave / lost time (hours: minutes).	
I. Total overtime worked (hours: minutes) and reason for overtime.	
J. The beginning and ending date and time for each activity shall be time stamped automatically by the system. In case the computer-generated time stamps are wrong (i.e., the officer forgot to enter his / her activity into the computer and is documenting it after the fact), an additional set of beginning and ending date and time fields will be available for users to correct the system-generated time stamps.	
CONTEXT SENSITIVE HELP	
A. The MDCS system shall include a context sensitive help system. The help screens shall be context sensitive and available by mouse or keyboard command.	
B. The help program shall contain the following:	
1. A search engine	
2. Hypertext links	
3. Hierarchical contents	
4. The ability to move back and forth through previously viewed help windows.	

C. A help system shall be local to the device to reduce bandwidth utilization.	
D. Updates to the help system shall be accomplished via the network at a low priority or while in the vicinity of a high-speed access point.	
QUERIES	
A. It is desired that the system have the capability to perform Federated Queries. Federated Queries are defined as a single query that will be processed against multiple systems and return multiple returns. An example of this would be a single name search that would query the DMV, CLEAN and local RMS systems. Federated queries should be generated on both seamless queries and manual queries as described below.	
B. The Client Application shall provide formatted data entry screens for each type of CAD, RMS, and CLEAN inquiry type required by this RFICE.	
C. The message switch shall provide the capability to perform cascading queries, where the results of a response may be used to initiate another query.	
D. Query responses shall be subject to the security of the user, and shall only provide information available to the user.	
E. The MDCS will support the following law enforcement query capabilities compatible with NCIC 2000 and data mining functions:	
VEHICLES	
Vehicle query based on:	
A. Tag, state, year. (Would also like the capability to query local databases for partial tag data.)	

B. Vehicle Identification Number (VIN).	
C. Decal number, state and year.	
D. Multiple tag query. Retrieves owner information for a series of vehicles. Based on Tag, Year, State, and/or VIN	
.	
E. Boat registration number.	
F. Ownership. Retrieve all cars owned by an individual based on name, social security number, age / date of birth, gender, race, driver's license number, and State.	
G. The MDCS shall automatically check the returned owner in CLEAN, NCIC, DMV. A mechanism, however, shall be provided to only check if the vehicle is wanted or to obtain the registration information without checking the vehicle's owner against the indicated databases.	
PERSONS QUERY	
Persons query based on:	
A. Name, social security number, age / date of birth, gender, and race.	
B. Driver's license number and State.	
C. Query routed to CLEAN, NCIC, RMS, retrieve data on all vehicles owned by an individual based on:	
1. Name, social security number, age / date of birth, gender, and race.	

2. Driver's license number and state.	
D. Retrieve data on articles owned by an individual based on:	
1. Article type and serial number.	
2. Owner applied number.	
E. Query routed to CLEAN, NCIC, and RMS. Article query returns current owner of the article and its status (stolen, recovered, etc.). Return involvement history for a person based on:	
1. Name, social security number, age / date of birth, gender, and race.	
2. Driver's license number and State.	
F. Query returns a list of involvements in RMS related to the specified person. Query goes to RMS database. The query returns, for example, a list of cases in which the specified individual was involved and the nature of that involvement (victim, suspect, etc.).	
ARTICLES QUERY	
A. Gun query based on serial number. Query to go to CLEAN and NCIC.	
B. Article query based on article type and serial number. Query to go to CLEAN, NCIC, and RMS.	
C. Gun or article query that returns a list of involvements in RMS related to the gun or article. Query based on article type and serial number. Query is routed to RMS database. The query returns, for example, a list of cases in which the article or gun was involved.	

D. Gun or article query that returns a list of article owners in RMS related to the gun or article. Query based on article type and serial number. Query is routed to RMS database.	
ADDRESS INFORMATION	
Items in this section shall also be available to Fire and EMS personnel.	
A. Premise History. A query generated against the CAD database detailing recent dispatch activity occurring in a specific address / location.	
B. At least ten of the most recent, high priority CAD events occurring at the premise will be displayed on the MDCS unit. For example, if an armed domestic violence call is followed by ten, more recent, minor calls (e.g., false alarms); the armed domestic violence call will be one of the ten CAD events displayed on the MDC.	
C. The City will specify the exact format and content of the report.	
D. Hazard / Alert Query. A query generated against the CAD database that returns all the hazards / alerts at or near a location / address.	
E. The City will specify the radius to be searched in fractional miles. The system will return all of the hazards / alerts within the specified search radius.	
F. The hazard / alert information will be sorted by priority and return up to ten hazards / alerts at a time.	
G. The following information will be displayed: hazard / alert type, location, date, and contact information.	
BOLO QUERIES	
Any query that is run will specifically query the BOLO file for matches. The	

system shall also permit direct queries to the BOLO files.	
CAD SYSTEM QUERIES	
MDCS units shall have access to the CAD database. Responding units need information to perform their duties. The City will specify the exact format, field contents, and default field values for the queries.	
The queries described below are provided "on demand." That is, the MDCS display shall only update the information when the query is re-initiated. Selected queries (i.e. Units on duty) will be required to refresh automatically for a configurable period of time.	
The Successful Vendor shall provide the following CAD queries consistent with the specified design:	
A. Units on duty - a list of all units currently on duty and their status, location, and nature code (if assigned to call), sorted by District.	
B. Pending calls for service - available only to a subset of designated users, this query will list all calls for service that have not yet been assigned, with their priority, nature code, and location.	
C. Calls currently being worked - available only to a subset of designated users, list all active calls for service that have been assigned, with their priority, nature code, current status, and location. Query shall default to listing all active calls within the user's agency or sector. However, the system will allow users to retrieve all active calls in the City. These events need to be automatic, event driven updates for Fire and EMS, and not polled. Availability shall be configurable individually by user department. Fire and EMS does not generally restrict view by sector, etc.	
D. Unit history - available only to a subset of designated users, a report detailing the specified unit's activity from designated start time until designated end time.	

E. Call for service summary - a report containing summary information for a call for service. The City will specify the exact content and format of the report. The report can be obtained by entering a specific incident number, an address / location, or an involved person's name.	
F. Calls for service detailed report - a report available only to a subset of designated users that displays all of the information including comments and units associated with a specific CAD event.	
G. Responses containing officer safety information shall have both visual and aural alerts that are clearly distinct from normal system responses and alerts	
HAZARDOUS MATERIAL QUERY	
The MDCS shall provide a query to return hazardous material information and hazard mitigation procedures based on the latest edition of the North American Emergency Response Guidebook. The query shall go to a national Hazardous Material database set up to provide this information.	
The ability to receive CHEMTREC information directly on the mobile computer is desired, either via routing of faxed information or by a link to CHEMTREC, which will be accessible from authorized MDCS units.	
QUERY PRIORITIZATION	
The random nature of public safety events can result in a number of query responses being returned to an MDCS unit simultaneously or nearly at the same time. The City will assign a priority code to each type of query. The MDCS shall use this priority to queue the most "important" query responses to the user first, with other, less important responses being routed to the user after the more important responses are reviewed.	
The prioritization process shall take all pending actions (messages, e-mail, dispatch assignments, query responses, etc.) into account. All of these events shall have a priority code assigned to them and the code shall be	

used to route the events to the user in a logical fashion.	
MESSAGING	
The MDCS shall include a real-time message system that provides the following functions:	
A. Message data shall be encrypted (minimum 128 bit encryption) and compacted.	
B. Messaging shall not be limited to a specific agency (ability to message to personnel in other agencies)	
C. Group assignments described below shall be dynamic. The MDCS system shall coordinate with CAD to find all units currently belonging to a group. For example, a list of Police vehicles in a specific zone or sector should be an actual representation of the currently assigned units in the zone or sector, rather than a predefined assignment of vehicles to zones and sectors.	
D. Free format message entry / edit screen.	
E. Ability to send / reply / forward a message from an MDCS unit to one or more MDCS units. The MDCS shall provide each recipient with the message owner's login ID name and vehicle / unit number. The unit selection shall be from a drop down list of zones and currently logged in units for each zone. Reply messages shall automatically be sent to the unit(s) initiating the message.	
F. Ability to send / reply / forward a message to predefined groups of MDCS units. The MDCS shall provide each recipient with the message owner's login ID name and vehicle / unit number.	
G. Ability to send / reply / forward a message from an MDCS unit to one or more CAD operators either by name or workstation ID CAD message recipients shall be provided with the message owner's login ID name and vehicle / unit number.	

H. Ability for CAD users to send / reply / forward messages to one or more MDCS units. The MDCS shall provide each message recipient with the message owner's CAD position number and login name.	
I. Alerts MDCS users that they have a message pending.	
J. Messages shall be sent to currently logged-in units / users. The MDCS will gather information on which units and users are currently logged in to the system. This information shall be presented to the MDCS user in a drop-down list or similar method for selection of message recipients.	
K. All messages shall be logged, including who sent the message, the date and time the message was sent, the message content, and if the message was successfully delivered. Such logs shall be maintained online for no less than 90 days, and allow for off-loading to CD, tape, or other storage media for permanent retention. The log shall be searchable by date-time range, specific user(s), partial / complete message contents, or a combination of these factors.	
L. Shall provide the capability to send and receive messages to mobile units and CAD from any Intranet-enabled personal computer. Requires a valid user ID and password.	
M. When a unit receives a positive hit confirmation from a vehicle, person, or other specified query, a configurable message shall be sent to the dispatcher and all units or units in a given area.	
N. The system shall have a message prioritization and organization to arrange messages according to importance, time / date, or local grouping.	
O. The system shall have an inbox were messages are stored; messages are not deleted when new messages come in.	
P. Users shall have access to the City Intranet and mobile messaging, but access to the World Wide Web or Internet mail will be	

configurable by user to limit access to selected sites for authorized resources only.	
DISPATCHING FUNCTIONS	
The MDCS shall be fully integrated with the CAD system. By integrating the MDCS with the CAD system, public safety personnel shall be able to more efficiently perform many dispatch-related functions directly in the field without relying on voice communications. Dispatched calls should automatically be logged in the activity report.	
MDCS dispatch functions fall into the following broad categories:	
A. Silent dispatch - A vehicle's MDC shall be a full participant in the dispatch process. When a dispatcher assigns a unit equipped with an MDC and logged into CAD, all relevant information regarding the event and the assignment shall appear on the MDC. Software shall automatically update calls if selected fields have been updated. New messages shall provide a configurable audible and visible notification to the user.	
B. All unit status changes available in the CAD system.	
C. All incident milestones available in the CAD system.	
D. Self-initiated dispatch - an MDC-equipped unit happens upon an event and dispatches / assigns itself to the event. The unit shall inform CAD that it is responding to the event by sending CAD a digital message specifying the event location, nature code, and other relevant information.	
E. Self-Assignment even if not dispatched to the call. The ability for a unit to assign itself to a pending call or active call.	
F. Tracking status - MDC-equipped vehicles shall use digital messages to inform CAD of changes in their status (e.g., en route, on scene, available, etc.).	

G. Updating emergency event records - the CAD system shall maintain an activity log on all events related to emergency incidents (e.g., comments from the scene and witnesses, unit activity, etc.). MDC-equipped vehicles shall use digital messages to update CAD's Call for Service (CFS) activity log records.	
H. Accessing information from CAD - queries shall be available to MDC-equipped vehicles to access emergency incident and apparatus related information from CAD. It is desirable to be able to double click the incident to pull up additional details, and to use function keys such as Forward and Backward to quickly progress through the information.	
SILENT DISPATCH	
The CAD system shall automatically send event information to dispatched MDCS units. This type of dispatch is referred to as silent since the information is not necessarily broadcast over the radio. The silent dispatch may be supplemented by voice communications as determined by the department's SOP.	
A. Silent dispatch messages shall receive a very high priority on MDC-equipped units. MDCS users receiving a silent dispatch shall be notified via a unique visible and audible alarm that they have a pending dispatch message.	
B. Users should be able to easily switch from any application they are running on the MDC to view and respond to the dispatch message without losing any data.	
C. Silent dispatch messages shall contain all of the relevant information about the event, including:	
1. Call taker's name and CAD position ID.	
2. CAD position ID and login name of dispatcher assigning unit to the call.	

3. Other units assigned to the call.	
4. Location.	
5. Nature code.	
6. Priority.	
7. Involved individuals and vehicles.	
8. Phone number.	
9. Comments	
10. Pre-plan information (slide and/or tactical information) and any operating procedures associated with the specific event or location.	
11. Premise information that includes business name, owner information, alarm company name, after-hours contact information, and other relevant premise information.	
12. Hazards associated with the event and its location.	
SELF-INITIATED DISPATCH	
A. A form shall be available in MDC-equipped units that allow them to initiate an event (e.g., an officer spots a drunk and disorderly individual and dispatches him or herself to handle the situation).	

B. All self-initiated dispatch events shall be routed to the pending call area of controlling dispatchers.	
C. The controlling dispatchers shall be prompted to assign backup units and follow other SOP's as contained in the CAD system.	
D. If the officer did not announce the self-initiated dispatch over the radio, the controlling dispatcher shall have the ability to send the information to a group of units, in addition to the ability to announce it.	
E. The following minimum data entry fields shall be included in the form:	
1. The event nature code (e.g., accident, disorderly individual, traffic stop, etc.) with a default priority that may be overridden by the controlling dispatcher.	
2. Location of the event (should be automatically filled in for AVL-equipped vehicles). The user should be able to override the AVL-provided location in the event that the self-initiated dispatch is not located at the current location of the vehicle.	
3. Narrative description.	
SELF-ASSIGNMENT	
The MDCS shall provide the capability for units to review pending calls for service and under specific rules assign themselves to a selected call. The vendor shall explain how their system would permit this and what rules can be put into place regulate this function.	
STATUS TRACKING	
A. The MDCS shall provide an easy-to-use mechanism for field units to update their status digitally. Soft or hardware buttons shall be easily used by a person in a moving vehicle with gloves on.	

B. The CAD statuses for the EMS, Fire and Police Departments shall be supported by the MDCS. In all cases, the statuses available on the MDCS shall be consistent with the statuses available in the CAD system as specified in CAD Section 0Incident and Unit Status Maintenance.	
C. Vendor shall be responsible for ensuring that all MDCS statuses are also available in the CAD system.	
D. The MDCS shall clearly inform users whether their status update was completed successfully, accept all status updates from CAD, and display system times for each status change.	
E. The MDCS shall notify all units assigned to a call of the changed status of any other units assigned to the call.	
F. The MDCS shall provide the capability for a Mobile Unit to enter one or multiple disposition codes when clearing an incident.	
POLICE STATUSES	
The following statuses shall be available to Police users in the field using a mobile computer. Additional status messages shall be configurable by a system administrator for system-wide use.	
A. Out of service with indication of type, including data fields for entering the reason to be validated against a locally-maintained table and location. The location shall be validated against the geographic reference file.	
B. Off-duty.	
C. On-duty (unit / officer becomes available for their shift) with an indication of type and a data entry field for indicating the officer's current location. The location shall be validated against the geographic reference file or obtained from AVL.	

D. Send a backup unit - unit is requesting that a backup unit be assigned to the activity currently being handled by the unit.	
E. Busy, but available for dispatch.	
F. Busy and not available for dispatch.	
G. In service and available for calls.	
H. En route / dispatch message received.	
I. Arrived / on scene - arrived on scene of dispatched event.	
J. Officer needs help - initiates an emergency message. A system administrator definable emergency message alert with tone will be broadcast to the CAD dispatcher. AVL provides the location of the unit.	
K. Available / call completed.	
L. Transport begun, including a drop down list of type (e.g., prisoner, juvenile, etc.), a validated entry field for the destination, and an entry field for the transporting vehicle's starting odometer reading (starting mileage).	
M. Transport (e.g., prisoner, juvenile, etc.) completed, pre-filled with the destination entered above and an entry field for the transporting vehicle's ending odometer reading (ending mileage).	

FIRE / EMS STATUSES	
The following statuses shall be available to Fire / EMS users in the field using a mobile computer. Additional status messages shall be configurable by a system administrator for system-wide use.	
A. Responding.	
B. Arrival.	
C. Staged.	
D. Primary search completed.	
E. Secondary search completed	
F. Water on fire.	
G. Fire under control.	
H. Patient transferred over	
I. Available on the air	
J. Loss stopped.	
K. At Patient Side (APS).	

L. Transporting to hospital, including a field for entering the destination hospital and priority of the transport.	
M. The system shall permit multiple transports via a single unit	
N. Arrival at hospital. The hospital name pre-filled from the above entry.	
O. In service.	
P. In quarters.	
Q. Out of service, not available for dispatch.	
UPDATING EMERGENCY EVENT RECORDS	
The MDCS system shall provide a data entry form to enable field personnel to update CAD's Incident record. The following data entry fields shall be included on the form:	
A. Narrative description / comment - a descriptive field containing up to 250 characters.	
B. Incident number - defaults to the incident to which the unit is currently assigned (silent dispatch or self-initiated event).	
C. If the unit is not currently assigned to a call, the MDCS shall provide the last Incident number to which the unit was assigned as the default value.	
D. The user may override the default Incident number in case the update is for a different call for service.	

MESSAGES	
MESSAGE RECEIPT	
It is important that the user always receive messages sent to the mobile data computer in a timely manner. As a result, if the mobile computer shall be configured to go into a "sleep" mode after a period of non-use (assuming that the user or unit remains logged on), the computer (and/or modem) shall be configured to "wake up" upon receipt of an incoming message and display the message to the operator. This shall occur automatically without any operator intervention.	
RECEPTION ALERTS AND INDICATORS	
The client application shall provide a visible and audible indication upon message receipt. All visual indications shall include a counter showing the number of messages that have not been viewed (in queue counter.) Message receipt shall be associated with an audible alert, which is sounded upon receipt of each message.	
DATE AND TIME STAMPING	
All messages received shall have a method whereby the operator can determine the time and date associated with message reception.	
INDIVIDUAL MESSAGE PROCESSING	
All messages sent and received shall be individually viewable and able to be saved or deleted on an individual basis. All messages regardless of type shall be able to be deleted as a group.	
MESSAGE PROGRESS INDICATORS	
Any messages sent over an interface or link shall clearly indicate success or failure to the operator. If an interface or link goes down, a notice shall be provided to the operator showing that the link is down.	

AUTOMATIC VEHICLE LOCATION AND GLOBAL POSITIONING SYSTEM	
The Global Positioning System (GPS) shall provide vehicle location information.	
AUTOMATIC VEHICLE LOCATION (AVL)	
Responses shall include an AVL system capable of tracking approximately 850 mobile units.	
REQUIRED AVL FUNCTIONS	
A. AVL coordinates shall be provided to CAD by the MDCS at the City-specified time interval for each logged-in MDC.	
B. The system administrator for the MDCS shall be able to modify the time interval and other AVL coordinate transmittal criteria.	
C. Each AVL transmission shall include a time stamp for each transmission.	
D. The frequency of AVL updates shall be tied to vehicle speed, status or incident type so that more frequent updates occur as the vehicle travels at a faster rate of speed.	
MDCS TACTICAL MAP DISPLAY	
A. The MDCS shall include a Tactical Map Display that is consistent with the CAD map display.	
B. The MDCS tactical map shall display the location of pending and active incidents.	
C. Users can limit the MDCS map to only display a subset of pending and active incidents (e.g., only Fire calls).	

D. The MDCS tactical map shall also display the location of all "logged-in" units based on their AVL coordinates.	
E. Users can limit the MDCS map to only display a subset of "logged-in" units (e.g., only Police units).	
F. The tactical map shall use a rule-based approach for displaying information. It shall also have a feature where a user may “de-clutter” the display with the press of a button, changing the amount of information displayed.	
G. There shall be several levels of “de-clutter” that a user can cycle through and get back to default level display.	
H. For example, at a particular zoom level only the major roads and highways should be displayed, while at a different, more detailed zoom level, all local and collector streets will be added to the display.	
AVL MAP DISPLAY	
The AVL map display in MDC-equipped vehicles shall show:	
A. The vehicle location at all times. The display shall normally be centered on the vehicle's location.	
B. All units assigned to the call to which the vehicle is currently assigned.	
C. The call location to which the vehicle is assigned.	
D. Standard pan and zoom functions shall be provided with a preset default zoom level determined by the City, and shall be modifiable by the City system administrator.	

TRAVEL ROUTE ANALYSIS	
A. The MDCS shall provide the capability to locate an address / location and describe the travel route from the unit's present location to that address / location.	
B. The travel route analysis shall include analysis of impedance of route (speed of route). This shall be used to provide most efficient route in relative real time.	
C. It shall also provide for temporary road closure, barriers, etc. These shall be highest impedance value (unable to travel).	
D. In addition shall be able to take into account temporary reduced speeds on a route due to construction or other temporary conditions.	
CAPTURE AND REPLAY OF AVL INFORMATION	
A. The AVL server shall capture AVL information, organized by vehicle.	
B. Tools shall be provided in the MDCS system to extract this information by one or more units or by groups of units.	
C. Authorized individuals will be able to view this information on the AVL server by "playing back" (with a feature for varying the speed of playback) the track taken by the selected vehicles overlaid on top of a geographic map.	
D. The AVL server shall provide an icon, unit ID label, and the date and time when the vehicle was at its displayed location.	
E. The system shall also provide standard mapping functions such as pan, zoom, annotate, and print for the AVL track display.	

E-MAIL (CONFIGURABLE OPTION)	
A. MDC users shall be able to organize their mail and address books in a manner consistent with standard Internet e-mail packages.	
B. MDC users shall be alerted when new e-mail is received.	
C. E-mail and attachments shall be filtered to limit size of package before transmission.	
D. The mail client used on the MDCS shall contain a spell checker.	
E. MDC users shall be notified of the availability of new e-mail at times designated by the system administrator (e.g., pending e-mail will be displayed at login, or high priority e-mail will be displayed immediately).	
F. The system shall force users to read / view their e-mail and any attachments prior to their being deleted, saved, forwarded, or replied to.	
G. A "return receipt" option with date and time stamping shall be available to the sender (e.g., court subpoenas, SOP updates, BOLO's, supervisory directions, etc.).	
INTRANET (CONFIGURABLE)	
MDC users shall be able to access the City Intranet applications.	
TEXT TO VOICE (SEPARATELY PRICED OPTION)	
The MDC application shall provide the capability, controllable by the user, to read message responses, such as a license plate query, aloud to the user. This feature shall be easily enabled or disabled by the operator via function key or icon.	

VOICE RECOGNITION (SEPARATELY PRICED OPTION)	
It is desired to have the user be able to initiate a limited number of commands through verbal communications. These commands shall initiate transactions, such as running a license plate query, without any physical operator intervention. The Vendor shall describe the capabilities provided by the system, including requirements for wired or wireless microphones to be either worn by the user or mounted in the vehicle.	
SMART PHONES	
A. The vendor shall describe in detail any capabilities of the proposed system to support the transmission of CAD call for service information to Smart Phone devices as a basic function of the dispatch process.	
B. The vendor shall describe any capabilities of the proposed system to engage in two-way communications with Smart Phone devices as a part of the CAD dispatch process.	
C. Software or other means to facilitate such communication should be specific to the smart phone application, as opposed to simply allowing a smart phone's browser to access secure web pages designed for use by regular computers.	

INTERFACES

Vendors shall address in written form each numbered section and sub-section of this RFICE. If the Vendor takes exception to a specific paragraph, they shall fully describe their exception in the appropriate section of the Response.

E9-1-1

A. The CAD system shall integrate with the existing Cassidian Communications Vesta System.

B. The CAD system must be able to determine through the 9-1-1 interface which communicator has a particular 9-1-1 call.

C. The interface shall provide the ability for the operator to issue a command to populate the incident screen with the associated ANI / ALI information. The CAD system must not automatically populate the CAD incident screen until the operator issues a command.

D. The address shall be located in the caller location field of the CAD call entry form.

E. If the caller location is the location of the call, the system will provide the communicator the ability to copy the caller's location to the location of the call field on the CAD call entry form with a single keystroke or click.

F. If the caller location is not the location of the call, the system will provide the communicator the ability to move the cursor to the location of the call field on the CAD call entry form with a single keystroke or click.

G. Once the ANI/ALI information has been associated with the call's incident record, any other communicator (call taker, dispatcher, supervisor, etc.) monitoring the call will also be able to view the

call's ANI/ALI information.	
H. The system shall also center and zoom the IMD to the caller's location and place an icon on the map to indicate the caller's location.	
I. It shall be a site option if the system shall continue to display the caller's location if different from the location of the call.	
J. The system shall be capable of capturing and retaining the off hook (answer) time of calls.	
WIRELESS CALLS	
A. For Phase 1 calls, the system shall place an icon on the map indicating the tower location.	
B. For Phase 1 calls the system shall include in the above mentioned icon the general heading of the tower face receiving the call.	
C. The vendor shall explain in detail where there system places the tower location and heading in the call record.	
D. For Phase 2 calls the system shall place an icon on the map indicating the location of the 9-1-1 caller based upon the coordinate data received.	
E. The system shall provide the capability to translate the 9-1-1 coordinate data into a street address and record this address in the location of caller field in the CAD call entry form.	
F. The radius used to associate coordinate data to a street address shall be system administrator definable.	
G. The vendor shall explain in detail the methodology utilized by the proposed system to translate the coordinate data into a street	

address.	
H. The vendor shall explain in detail how their system and interface will process the rebidding of the system.	
NEXT GENERATION 9-1-1	
The vendor shall explain in detail the capabilities of their system to support the emerging standard for Next Generation 9-1-1.	
CALLER IDENTIFICATION	
The vendor shall explain in detail the capabilities of the proposed system to support the acceptance of Caller ID information from the telephone system and if the vendor provides any lookup capabilities based upon the information received. The ability to locally flag calling numbers – whether delivered via ALI or caller ID – is desired.	
MOBILE DATA COMPUTER SYSTEM	
The CAD system shall be integrated with the proposed Mobile Data Computer System (MDCS) and the integration should provide the following capabilities.	
A. Silent/digital dispatch – the ability to transmit incident information to assigned units through the mobile data system without having to utilize voice communications.	
B. Status updates – units in the field will be able to directly update their status by activating icons/function keys without having to utilize voice communications.	
C. The time source for the MDCS shall be synchronized with the rest of the system so all times are consistent throughout.	
D. Messaging – the CAD system will provide a mechanism for sending and receiving messages from mobile units as described elsewhere in this RFICE.	

E. All messages will be tracked (time stamped) in a reportable format.

F. All messages will have the receiving and transmitting parties identified and recorded.

G. Support for remote CAD functions – authorized users will be able to perform a subset of CAD functions on their mobile units for example: Supervisors will be able to query the CAD system to obtain information such as the status of one or more units, list of active calls, list of pending calls, etc. Units assigned to a call will be able to query and update CAD by performing functions such as obtaining detailed call information, adding a comment/record to a call for service, retrieving location and status of all units assigned to the call, etc.

RADIO SYSTEM

PUSH TO TALK IDENTIFICATION

It is desired that the CAD capture and display unit/portable PTT ID and translate that ID to a unit number. The CAD should display the unit ID of the vehicle speaking on the radio on the selected talk group.

EMERGENCY ALERT

It is desired that the CAD display and record in the unit/incident record at any time when an emergency button has been activated and display which radio activated the button and center the Integrated Map Display to the location of the unit or the portables assigned to that unit.

MODIFY ID'S

The dispatch supervisor should have the ability (via the CAD) to easily modify unit IDs for mobile and portable radios.

RADIO CHANNEL DESIGNATION	
A. The system shall have a table of radio channels/talk groups	
B. The system shall allow each radio channel or talk group to be used for tactical purposes to be flagged as such in the CAD system.	
C. The system shall allow each radio channel or talk group defined in the CAD system to have an associated list of the agencies whose units have those radio channels or talk groups on their radios.	
D. The system shall allow the radio channels or talk groups used for tactical purposes to be ranked according to the order in which they are assigned.	
E. The system shall track the maximum number of concurrent incidents that may be specified for each radio channel or talk group.	
F. The system shall include a flag indicating a requirement for the automatic assignment of a tac channel that can be set for each incident type in the CAD system.	
G. The system shall assign a tactical radio channel available to units upon the dispatch to an incident requiring the automatic assignment of a tac channel.	
H. The system shall allow the dispatcher to manually flag or assign one or more tactical radio channels or talk groups to an incident.	
I. The system shall track the release and reassignment of radio channels/talk groups.	
J. The system shall release the tac channels/talk groups assigned to an incident when that incident has been cleared and make the tac channels/talk groups available for other incidents.	

K. The system shall be able to, upon assignment of a tactical radio channel or talk group to an incident, direct the radio system to have the radios associated with units assigned to the incident to be automatically switched to that tac channel/talk group (if the radio system provides this capability).	
L. The system shall be able to, upon clearing an incident of which a tac channel/talk group has been assigned and the release of the channel or talk group has occurred, direct the radio system to have the radios associated with units assigned to the incident to automatically revert to their previous channel or talk group selection.	
M. The system shall be able to record which radio channels were patched together for an incident including start and end times.	
THE COMMONWEALTH LAW ENFORCEMENT ASSISTANCE NETWORK (CLEAN) ()	
The proposed systems shall include an interface that will facilitate the exchange of data between the City CAD system and CLEAN.	
A. The proposed CAD and mobile data computer systems must both interface to the CLEAN System.	
B. The CLEAN interface shall be compliant with NCIC 2000.	
C. All MDC chat and CLEAN queries must be logged and able to be queried in order to respond to subpoenas.	
SEAMLESS ACCESS TO CLEAN	
The proposed CLEAN interface shall support a seamless access mode. In this mode data entered into either the proposed CAD and MDCS will automatically (seamlessly) be formatted to fit standard CLEAN queries, routed to CLEAN through this interface, and a notification of a response returned to a specified location on the originating workstations.	

SEAMLESS QUERY GENERATION	
Seamless queries to CLEAN should automatically be generated during certain system related actions. The City expects that the proposed CAD system and MDCS will support seamless queries in at least the following system related actions:	
A. Traffic stop entry	
B. Officer initiated event data entry	
SEAMLESS QUERY DATA FIELDS	
Only a specific set of data entry fields will be associated with this capability. The City will work with the selected Vendor to identify all of the fields that will be sent to CLEAN during a seamless query.	
At least the following data fields shall be included in, and generate seamless queries to CLEAN:	
A. Name(s) and Date of Births	
B. Driver's License Number.	
C. Vehicle tags.	
CLEAN DATA ENTRY SCREENS	
The proposed CLEAN interface shall support a data entry screen mode. In this mode users activate a set of preformatted, fill-in-the-blank type data entry screens for frequently used CLEAN queries and functions. This type of access is required to support routine person, vehicle and property checks that may not be associated with CAD/MCDS actions.	
MINIMUM SUPPORTED FUNCTIONS	
At a minimum the following queries and functions will be supported in fill-in-	

the-blank type data entry screens:	
A. Driver's License Query.	
B. Vehicle Tag Query.	
C. Person Query.	
D. Gun Query.	
E. Property Query.	
F. Vendors shall indicate the functions and queries supported by their proposed interface through fill-in-the-blank type data entry screens.	
ENTRY SCREEN MAINTENANCE	
The proposed CLEAN interface should provide a means for creating new screens as needed. The City prefers to be able to accomplish the screen maintenance/update without having to rely on the selected Vendor's programming or consulting assistance. Vendors shall indicate how their CLEAN screens are maintained.	
COMMAND LINE DATA ENTRY	
The proposed CLEAN interface shall support a command line mode for generating CLEAN queries. Users access this function by entering a valid command followed by the appropriate values. This functionality must be provided for a select number of frequently used CLEAN queries. Vendors shall indicate the CLEAN functions and queries supported by their proposed interface through a command line format.	

CLEAN EMULATION	
The proposed CLEAN interface shall support a CLEAN emulation mode. In this mode, users shall be able to perform all authorized CLEAN functions by directly entering CLEAN commands into a separate emulation window on the workstations.	
SECURE ACCESS	
A. The proposed System will ensure through user security (login ID and password) and associated privileges that only authorized users and/or workstations are able to complete CLEAN transactions.	
B. Vendors will indicate what controls exist within the proposed CLEAN interface to prevent criminal history and other confidential information from being accessed by workstations other than those that are authorized and under the operation of authorized users.	
C. The System shall comply with the minimum set of security requirements as specified by the latest version of the FBI Criminal Justice Information Services (CJIS) Security Policy Manual.	
TRANSACTION LOGGING	
A. The proposed CLEAN interface will adhere to all State and Federal mandates and auditing requirements.	
B. The CLEAN interface must provide for automated logging and retrieval of all criminal justice inquiries consistent with State and NCIC regulations and policies.	
C. All CLEAN interface transaction will be logged in the system's transaction log regardless of whether they were initiated seamlessly, via fill-in-the-blank type forms, or through a command line.	
D. The transaction log for CLEAN queries and responses shall contain at least a 180 days of historical transactions.	

CASCADING QUERIES	
A. The CLEAN interface shall provide the capability to provide cascading queries. Cascading queries are seamlessly generated queries that are based on data returned from a previous query. An example would be the ability to perform a warrant query utilizing the registered owner's name that was provided by a vehicle registration query.	
B. The vendor shall describe the capabilities of the proposed system to provide cascading queries as describe above and shall identify what queries will be provided.	
EXTERNAL ALARMS	
The system should adhere to the APCO/CSAA 2.101.1-2008 External Alarm Interface Exchange American National Standard and capable to receiving alarm data from alarm monitoring companies. The data will be used to create an incident without call taker involvement. The interface should also allow for updated messaging from the dispatch as well as from the alarm company.	
FIRE STATION ALERTING	
A. The system shall provide an interface to the radio consoles (currently Motorola Centracom Gold Elite, to facilitate the toning of dispatched fire and EMS units. The system should allow for multiple toning activations from just one assigned unit.	
B. The vendor shall describe the features and capabilities of the interface to the radio consoles.	
C. The system shall permit the use of text to voice over open intercom systems in Fire and EMS stations.	

MULTIMODAL NOTIFICATION	
The system must have the capability to deliver notifications utilizing a number of different modes. The system shall provide:	
A. The ability to interface with multiple paging venues,	
B. The automatically page resources based on incident type and/or location,	
C. The ability to manually browse/search staff lists and page personnel by selecting one or more individuals/groups off the list.	
1. The ability to group pages by defined department (certain level call automatically pages a group)	
2. The ability to page all units on duty	
3. The ability to page groups	
4. The ability to page individuals	
5. The ability to page crew members	
D. The ability to send email (SMTP) and SMS text messages to one or more selected individuals/groups in a fashion similar to that described for paging.	
E. The ability to send SMS text messages to one or more selected individuals/groups in a fashion similar to that described for paging.	
F. The system shall provide the ability to set up and transmit pre-defined messages to pagers, SMS and SMTP devices.	

AVL / APL	
The proposed CAD system shall be able to accept and display automatic vehicle location (AVL) information provided by the AVL system and Automatic Person Display (APL) information..	
REAL-TIME DISPLAY OF VEHICLE LOCATIONS	
Through the AVL interface, the proposed CAD system must be able to provide real-time display of vehicle locations on the associated Integrated Map Display.	
MODIFIABLE PARAMETERS	
The proposed CAD system must be able to interact with the AVL system through this interface to establish system parameters such as frequency of location transmittal by AVL equipped vehicles.	
DISPLAY OF UNIT IDENTIFIERS	
The proposed CAD system must be able to accept and utilize unit ID information provided through the AVL interface for spatial display and for dispatch purposes. That is, the unit IDs provided by the optional AVL system must be displayable on the CAD system's IMD and used for unit recommendations.	
RECORDING AND PLAYBACK OF AVL INFORMATION	
A. The AVL system and interface shall provide the capability to capture and record the AVL data received.	
B. The system shall provide the capability to replay the AVL data that has been captured and recorded.	
C. The system shall have the ability to specify both a single unit and multiple units to be displayed during the replay of recorded AVL data.	

D. The system shall provide the capability to “turn on” and “turn off” AVL data recording.	
E. The system shall be able to select both a single unit and multiple units to “turn on” and “turn off” AVL data capture and recording.	
LOSS OF SIGNAL	
The system shall provide the following information on any unit suffering loss of GPS signal (e.g. vehicle stopped, vehicle shut off, loss of network signal, loss of GPS data):	
A. Last known position	
B. Time of signal loss	
C. Time lapse since signal loss	
REPORTING	
The system shall provide minimal AVL reports that include:	
A. Complete activity detail for specific date range	
B. Vehicle last stop/end time for date range	
C. Exception reports including all events that triggered an alert	
D. Vehicle first start/begin time for date range	
E. Miles per day, stops per day, average and summaries per vehicle	

PRIORITY DISPATCH CORPORATION PRODUCTS	
The City uses ProQA EMD by Priority Dispatch Corporation. A detailed functional description of CAD operation with ProQA is desired.	
OTHER CAD SYSTEMS	
There are a number of situations in which the ability to share information with other CADS Systems outside of the City will be necessitated.	
To better handle these situations, the City would like to capitalize on the many sets of Information Exchange Package Documentation (IEPD) that have already been developed to permit the standardized exchange of information between CAD systems. This section identifies the scenarios that would be expedited by the development of standards based CAD to CAD interfaces.	
For pricing purposes, the vendor shall assume that the other CAD is capable of exchanging information using the same IEPDs as models. The exchanges will be two way, such that the City CAD must be capable of receiving information as well as pushing it	
For each of the following sections 0through 0 the vendor shall address not only the capabilities of the proposed system and their company in providing the information exchange, but also their experience in providing the exchange.	
The vendor is asked to provide a list of agencies at which they have implemented information exchanges based on the NIEM model. If the vendor cannot identify exchanges based on the NIEM model, they can identify other locations they have implemented CAD to CAD information exchanges.	
CALL DATA TRANSFER	
In this scenario, a call is received at one PSAP where the data is collected and entered into the local CAD system, but the dispatch should occur from another dispatch center. Ideally the following should occur when the initiating PSAP is the City.	
A. The information is entered into the CAD system,	
B. The information is passed to the correct agency's CAD system,	

C. Some form acknowledgement received or the person making the original entry notified,	
D. The call information and the transfer recorded in the CAD system and	
E. The call closed.	
Ideally the following will occur when the initiating PSAP is not the City, but the dispatching center is the City	
A. The call information is received from the initiating PSAP,	
B. The City CAD sends an acknowledgment to the initiating CAD,	
C. The call information is placed in the initiate incident form and validated,	
D. The call is processed as any other CAD call for service.	
JOINT CALLS	
In this scenario, a call is received at one PSAP where the data is collected and entered into the local CAD system. The call for service requires a dual agency type response (police and EMS for example). In this case the call must be entered into the local CAD system and processed, the information transferred to the CAD system of the second agency where it will be processed. Additionally, there is benefit in both dispatch centers being able receive status updates of all units regardless of agency that are responding to the call for service. Ideally the following should occur when the initiating PSAP is the City:	
A. The information is entered into the CAD system	

B. The information is passed to the correct agency's CAD system.	
C. Some form acknowledgement received, or the person making the original entry notified,	
D. The call is processed as another call for service.	
E. As units responding to the call change status the information associated with the status change is passed to the other CAD system.	
Ideally the following will occur when the initiating PSAP is not the City, but one of the required agencies is dispatched by the City::	
A. The call information is received from the initiating PSAP,	
B. The City CAD sends an acknowledgment to the initiating CAD,	
C. The call information is placed in the initiate incident form and validated,	
D. The call is processed as any other CAD call for service.	
E. As units responding to the call change status the information associated with the status change is passed to the other CAD system.	
ASSISTANCE REQUEST	
In this case assistance from an agency in one dispatch center is requested by an agency serviced by a different center is requested. If the request is denied no other action takes place, however, if the request is granted, then the processing will be similar to a joint call.	

Ideally the following will occur:	
A. The requesting agency will generate a request for assistance identifying the type or nature of the request.	
B. The interface will push the request to the CAD of the requested assistance.	
C. The receiving agency will either grant or decline the request.	
D. If the request is granted, the requesting agency will forward the call information as if the call being processed were a joint call as described above.	
BOUNDARY CALL	
In this scenario, the CAD system determines that a call for service is within a pre-defined distance to a boundary of an agency serviced by another CAD system. When a call occurs within this boundary area, the CAD system via the CADS to CAD interface will send a message to the other agency's CAD system so advising them. In that this is an information only transaction, no other action is required.	
NOTIFICATION OF CALL IN JURISDICTION	
Similar to the boundary call scenario, the notification of a call in jurisdiction will occur a dispatch center dispatches an agency to a location that is shared. An example of this would be an EMS call dispatched to a location where the police department is not dispatched by the City. In this scenario, the CAD system via the interface will send a message to the second dispatch center notifying them that EMS has been dispatched to a location within their jurisdiction. In that this is an information only transaction, no other action is required. These situations may be set up locally to act as Joint Calls.	
BE ON THE LOOK OUTS (BOLO)	
When any agency issues a BOLO, the CAD system via the interface shall send the BOLO information to any CAD system on the interface.	

RMS INTERFACE	
The CAD system shall provide interfaces to Police, Fire and EMS Record Management Systems	
A. The system shall make the updated CFS data available for transfer to an RMS.	
DETERMINE REPORT FUNCTIONALITY	
A. The system shall provide the ability to automatically transfer incident/event data relevant to external RMS or reporting systems.	
B. The system shall be able to determine, based upon incident type and/or disposition, whether an agency report is required.	
C. The system shall accommodate either a push or pull of incident/event data from/to the RMS.	
SEND DATA TO RECORDS MANAGEMENT SYSTEM	
A. The system shall provide the ability to exchange all CFS event information with an RMS at a set time or at dispatcher command.	
ASSIGN AGENCY-SPECIFIC REPORT NUMBERS	
A. The system shall assign an agency-specific report (i.e. case) number—if a report is required, and if required by agency policy—in addition to the CAD incident/event number, before the CFS event data is transferred to the RMS.	
B. The system shall allow for both the CAD CFS Event Number and the Agency Report Numbers to be fully configurable (e.g. “1 to n,” “mmddyyxxxx,” “mmddyyhhmmssxxx,” “FY12xxxxxx,” “2012-mmdd-xxxxx”).	
REVERSE 9-1-1	
A. The system shall include an interface to reverse 9-1-1, emergency notification, community notification messaging, and other standalone systems available to be activated by the PSAP or	

through local emergency management.

TRAINING

Vendors shall address in written form each numbered section and sub-section of this RFICE. Training will be provided on each of the systems, subsystems and associated modules provided. If the Vendor takes exception to a specific paragraph, it shall fully describe the exception in the appropriate section of the Response.

GENERAL

Training on all system functions will be provided by the Vendor prior to commencement of the reliability test period. Training will include sufficient information and experience to familiarize communications, public safety, technical support, and maintenance personnel with system features and operations for their particular assignments. Training will include, at a minimum, hardware operation, operating system maintenance utilities, and application software features. All training (unless otherwise negotiated) will take place within the City. In no case will ad-hoc or demonstration-only training be considered adequate to fulfill the training requirement for any operational level position.

TRAINING MATERIALS

All training will be performed using document-based training materials provided by the Vendor. Such documentation, at a minimum, will include hardware user manuals, software operational texts, and tutorial examples. Any and all instructional materials, media presentation devices, presentation media, and course instructors will be provided by the Vendor.

PERMISSION TO REPRODUCE

A. Since the City intends to conduct all subsequent line-level training internally, it shall be necessary for the Vendor to grant the City permission to reproduce any and all training materials for purposes of training agency and City personnel.

B. All training materials shall be made available to the City in electronic format.

PERMISSION TO VIDEO RECORD

Since the City intends to conduct all subsequent line-level training internally, it shall be necessary for the Vendor to grant the City permission to video record any and all training sessions for the for purposes of training

agency and City personnel.	
EXPERIENCE OF VENDOR TRAINERS	
The Vendor shall submit a resume, a list of training classes presented, and prior client references that have been trained by each of the Vendor's proposed training personnel. The City shall interview the Vendor's training team, and shall mutually agree on the training package and the qualifications of the training personnel prior to the development and execution of the training program.	
TRAINING PLAN	
The Vendor shall submit a training plan that specifically identifies:	
A. The specific classes to be conducted,	
B. The prerequisites for each class	
C. The duration of each class,	
D. The number of times each class will be offered,	
E. The maximum number of students permitted in each class.	
TRAINING REQUIREMENTS	
Training shall be provided for system administrators as well as end users. Topics shall be specific to each user group and include, but are not limited to:	
A. Applications software features and integration with other applications.	
B. Ad-hoc report generation and data query.	
C. Database maintenance and tuning/optimization.	
D. Customization of the system	

E. Entering and maintaining users in the system.	
F. System parameter definition and table configuration.	
G. User definition and maintenance.	
H. Security definition and management.	
I. System Operation Recovery.	
J. Backup creation and maintenance.	
K. Installation and re-location of workstations.	
L. Operation and maintenance of printing devices.	
M. First level troubleshooting and diagnostics.	
SCHEDULING	
All training courses shall be scheduled and approved by the City at least 30 days in advance. All user training should be scheduled to be performed as close to go-live as possible, taking into consideration that the City must also perform all required Train-the-Trainer classes. Training schedule will be developed jointly with the successful vendor and the City.	
TRAINING UTILITIES	
In addition to formalized training programs, the Vendor shall list any electronic utilities that provide an on-line or off-line training environment. The nature of these utilities shall be presented, along with the content of such courses. These utilities should simulate operational scenarios using live parametric data wherever possible.	
ADMINISTRATIVE ON-SITE TRAINING	
The Vendor shall conduct separate comprehensive classroom	

administrative operator training for the CAD/MDCS systems. Sessions for the administrative personnel will occur before the new system is placed in service.	
The following topics shall be addressed:	
A. Security concepts.	
B. System features.	
C. User definition and maintenance.	
D. Creating, storing and running ad-hoc reports.	
E. Interface troubleshooting and maintenance.	
F. Configuring and maintaining system files, tables and parameters.	
G. Database administration and tuning.	
H. Set up and maintain a test or training database.	
I. Monitor functions and reports.	
J. Backup procedures.	
K. Failure mode procedures.	
L. New user/workstation setup.	
M. Geo-file maintenance.	
N. Backup and restoration of system/files.	

O. Routine hardware and system maintenance procedures.

P. Map modifications.

Q. System/network diagnosis and troubleshooting.

ON-SITE CAD SYSTEM USER TRAINING

The Vendor shall provide separate operational training for end users of the CAD system as well as other designated staff personnel. Training shall include system orientation and familiarization that includes discussion and equipment demonstration. The Response shall include the number of classes and the schedule, both of which shall be subject to the City approval.

At a minimum, the following training will be provided:

A. Call takers:

1. Enhanced 9-1-1 ANI/ALI information display and input.
2. Incident creation codes/procedures.
3. Incident status display.
4. Routing recommendation and override.
5. Informational query.
6. Position routing.
7. Integrated map display.

B. Dispatchers:

1. Incident status display and select.	
2. Unit status display, recommendation, and override.	
3. Status update.	
4. Informational query.	
5. Position routing.	
6. Integrated map display.	
C. Communications Center Supervisors:	
1. All of the above call taker and dispatcher functions.	
2. Operational parameter maintenance.	
3. Supervisory monitor and override functions.	
4. Failure mode recognition and corrections.	
TRAIN THE TRAINER	
CAD TRAIN THE TRAINER	
The City intends to conduct all future training for new CAD system users. The Vendor shall provide at least one class specifically geared to training trainers to train others in the use of the CAD system. The vendor shall provide specifics of this class including what will be covered in this class and how it is differentiated from the CAD end-user classes.	

MDCS TRAIN THE TRAINER CLASSES

The City intends to conduct all end user training for end users of the mobile data system. The Vendor shall provide at least one class specifically geared to training trainers to train others in the use of the MDC system. The vendor shall provide specifics of this class including what will be covered in this class and how it will be presented. It is expected that at least the following topics will be covered:

A. Silent dispatch.

B. Activity reporting functions.

C. Field Based Reporting

D. Data analysis reporting functions.

E. Records retrieval.

F. SOP access.

G. Status update.

H. Messaging.

I. Premise data retrieval.

J. MDC operation.

MINIMUM PERSONNEL TRAINING REQUIREMENTS

The Vendor shall provide for the following minimum numbers of personnel/position training requirements upon system implementation:

CAD/MDCS Training

# of Personnel	Position Description
350	CAD dispatcher/call takers/

	supervisors
4	CAD System administrators
20	CAD report analysts
8	Geofile maintenance
20	MDCS (Police) (Train-the-Trainer)
10	MDCS (Fire) (Train-the-Trainer)

DATA CONVERSION REQUIREMENTS

GENERAL REQUIREMENTS

The Selected Vendor shall convert and load into the proposed CAD all of the current legacy data. The Respondent shall propose a data conversion process that ensures that none of the legacy data is lost. Additionally, the City shall authorize any data lost during the conversion process.

The City will participate in the conversion process working together with the Selected Vendor.

DATA CONVERSION PROCESS

Data conversion is a very complex process requiring multiple iterations to ensure that the data is converted correctly. The City expects a cooperative effort with the Selected Vendor to accomplish the required data conversion. Responsibilities will be shared logically between the Selected Vendor and the City.

For example, the City will be responsible for extracting and preparing the data files for conversion. The Selected Vendor shall be responsible for creating the data validation tables and fields in the proposed CAD database to house the converted data. This will be accomplished based on City input. In other words, the City will complete those data conversion steps that it has the expertise and knowledge to complete efficiently, while the Selected Vendor shall complete those steps for which they are most logically suited.

Some steps will require joint efforts. For example, the City and the Selected Vendor may have to work together to match the data fields between the legacy CAD database and the proposed new system's databases to ensure that the data are loaded correctly without any data loss.

DATA CONVERSION TIMING

Although Respondent may propose alternative data conversion timing, the City believes that much of the historical data shall be loaded and converted during the proposed system's cutover process to live operations. During this cutover period any critical system transactions will be manually recorded. Once the historical data files are converted and the new CAD is in live operation, the manually recorded data will be entered into the proposed system's databases.

In order to ensure a smooth cutover and to minimize the amount of system transactions that shall be manually recorded, all production data shall be converted and tested prior to the cutover operations. The converted data will be stored and tested in the test system's databases. Once this is accomplished and as many errors corrected as possible, the entire database will be converted to determine the length of time required for cutover to live operation. That is, the initial (test) load of the data will facilitate estimating how long the final conversion will take and thereby help establish the total "down" time required during the live cutover period.

DATA CONVERSION METHOD

Although Respondent may propose alternative methodologies, the City envisions that the data conversion process shall follow a procedure similar to the procedure described in the table below. The vendor is free to propose another approach, but the Response shall contain a similar level of detail as provided below.

Stages	Steps	Title	Description	Responsible Party
Initial Setup (only done once)		Provide Legacy System Data Dictionary	Create a detailed data dictionary of the City's legacy CAD.	City
Data Matching				
	1	Compare Data Models	Explain and analyze the differences and similarities between the legacy and proposed data models	City and Selected Vendor
	2	Determine Matching Types	Determine how specific data elements will be converted.	City and Selected Vendor
	3	Match legacy fields to proposed fields	Diagram which legacy fields correspond to proposed CAD data fields	City and Selected Vendor
	4	Create tables	Document and load the tables that will be used in the proposed CAD	City and Selected Vendor
	5	Create transfer files	Create data files in an agreed upon format and deliver to Respondent	City
Loading into the Test Database				
	6	Selected Vendor process(es)	Import transfer files into the proposed databases. Data validation begins with various value conversions and default settings for all fields	Selected Vendor
	7	Error Detection	Quality assurance procedures detect and flag any encountered data errors	Selected Vendor
	8	Error Correction	Records in error are returned to the City for resolution and correction	City
	Repeat steps 6-8	Iterative Process	Corrected records are returned to Respondent and steps 6, 7 and 8 are repeated until acceptable data loading errors are achieved	City and Selected Vendor

Testing and Validation in the Test Database				
	9	Validate converted data	Validate the converted data in CAD against the original data in the legacy system	City
	10	Error Identification	Document any data errors	City
	11	Error resolution	Resolve errors	City and Selected Vendor
Iterations in the Test Database	Repeat steps 7-11	Data Conversion Iterations	Ensure that the data has been converted correctly	City and Selected Vendor
Test Run of Complete Data Conversion	12	Complete conversion of Data	Reload required tables to production database, Convert entire set of data into the production database to estimate time required for the final conversion run during Go-live.	City and Selected Vendor
At go-live, Copy Tables into Production Environment	13	Update production system tables	Copy tables from the test environment to the production environment	Selected Vendor
Go-live data conversion	14	Repeat step(s) 7 through 11	At go-live, entire legacy databases will be converted into the Production Database while entry frozen on legacy system	City and Selected Vendor
At go-live, Final Testing and Validation	15	Verify data	Verify data and proceed with go-live.	City and Selected Vendor
	16	Error identification and resolution	Document and resolve errors after go-live. A punch list is created and worked accordingly	City and Selected Vendor

DATA CONVERSION PRIOR TO GO-LIVE

As indicated above, the data conversion process will be a joint effort between the Selected Vendor and the City. It is anticipated that the Selected Vendor's and City staff will work together to refine the process and to efficiently perform their individual and joint responsibilities. Regardless of the eventual data conversion process adopted, the Selected Vendor shall obtain written approval from the City before proceeding through sequential steps in the process. For example, the City shall approve all data matching results and final CAD database formats for the converted data. Converted data test results will be reviewed and approved by the City's project manager.

The prime emphasis of the data conversion prior to Go-live will be error detection and

correction. Every encountered error will be logged and the Selected Vendor and City staff will work together to resolve these errors. The City will dictate how unresolved errors encountered during the conversion into the test database will be handled during final data conversion into the production database. The Selected Vendor shall perform referential integrity checks and will perform any code translations or inputting of default values that the City requests. The City will be responsible for final data validation prior to Go-live and will be the sole judge of whether an acceptable level of error has been achieved in the test database. The Selected Vendor shall obtain written authorization from the City prior to proceeding with the final data loading of the Go-live production database. The City requires that at least one (1) practice run to convert the entire production legacy data into the CAD production database be completed before Go-live operations. This practice run shall be used to benchmark how long data conversion will take at Go-live and to allow the City the ability to completely validate all production data. The benchmark testing shall take place on the production database, with fully allocated memory and CPU cycles to ensure that the benchmark is reflective of the Go-live effort. In order to complete the benchmark, the tables will have to be fully established on the production database. The tables shall be copied from the test environment prior to the benchmark practice run(s).	
DATA CONVERSION PLAN	
The data conversion methodology described above is reflective of the process required by the City. Respondent shall include in its Response to this RFICE a sample Data Conversion Plan, which thoroughly documents how they propose to meet the data conversion requirements detailed in this and other sections of the RFICE. The Conversion Plan shall provide details on the proposed data migration methodology and data migration tasks. In addition to fully describing each data conversion task, each task should include a description of who is responsible for its completion and the environment on which the task shall be completed and/or the location where the task shall be completed. Although the City will accept alternative methodologies, these alternative methodologies shall provide equivalent results in both data completeness and elimination of data errors.	

ACCEPTANCE TESTING

This section of the RFICE describes the acceptance testing procedure that will occur before the system is accepted. The vendor shall indicate their understanding and agreement or disagreement to the requirements in this section.

FUNCTIONAL ACCEPTANCE TEST

The functional acceptance test will be conducted to verify that the installed system provides the functional capabilities described in the Vendor's Response

A. The Vendor will be expected to demonstrate to the City that each function and option operates as described in the previously listed documents.

B. Should any failures be identified during the test, the Vendor will have a reasonable opportunity to correct the deficiencies, after which a retest may be scheduled.

C. The City, at its sole discretion, may require a retest of the failed functions, or may elect to require the Vendor to conduct a complete retest.

D. This process will continue until all functions have passed or it becomes obvious that the system under test will not support one or more functions that it was designed to accomplish.

E. At this point, the City may negotiate a settlement with the Vendor, or may take other steps as deemed appropriate.

F. System training will not begin until the Functional Test has been passed.

G. Throughput testing will not begin until the Functional Test has been passed.

Throughput Acceptance Test

The Vendor must conduct and pass system throughput performance tests for the system. The throughput test must exercise every component of the system. These tests will verify that the installed system will meet the expected throughput capability and provide the expected operational speed.

A. The throughput level to be tested will be based on the peak number of transactions experienced by the City, combined with the selected Vendor's

claim for system throughput capability.	
B. The Vendor will be required to execute and provide a standard benchmark test based on peak load characteristics with a transaction rate corresponding to the system loading information.	
C. Administrative workstations shall not adversely affect transaction response time for system users.	
D. System Back-up shall not adversely affect transaction response time for system users.	
E. System failover shall not adversely affect transaction response time for system users.	
F. For the purpose of the Throughput test response time is defined as the time between the depression of the last keystroke or pointing device activation (e.g., click) and the appearance on the workstation/terminal of the last character of the initial response (e.g., first page, pop-up window, etc.).	
G. Vendors shall describe how they intend to measure response time if different than described herein.	
H. The City reserves the right to review and approve the methods used to measure response time.	
I. Should any failures be identified during the performance test, the Vendor will have a reasonable opportunity to correct the deficiencies, after which a retest may be scheduled.	
J. The City, at its discretion, may require a retest of the failed functions or may elect to require a complete retest.	
K. This process will continue until all functions have passed or the system fails to provide the throughout required by the City. At this point, the City may negotiate a settlement with the Vendor or take other steps as deemed appropriate.	

L. Vendors shall provide details in the Response(s) on how acceptance tests will be conducted.	
M. System throughput testing will last for a minimum of three hours and involve sufficient transactions to validate the capabilities of the CAD/MDC systems.	
N. All subsystems, including CLEAN/NCIC, messaging, etc., will be exercised during this test; however, delays as a result of external systems will not be a cause for failure.	
O. System cutover will not occur until Throughput testing has been passed.	
Reliability Acceptance Test	
The City will test the installed systems to ensure that they meet the system reliability requirements agreed to by the Vendor.	
A. The reliability test will last a minimum of 90 days.	
B. During the reliability testing period the system will be utilized as designed. The vendor will agree that use of the system during the reliability testing period will not constitute productive use of the system.	
C. During this period all system downtime will be recorded and tracked. If the total recorded system down time reaches a level that precludes completion of the test period within the reliability parameters, the test will be terminated and the vendor will be notified. (Although the test has been terminated it will be the City's choice as to continuing to use the system).	
D. The vendor will be provided an opportunity to make system modifications so long as those modifications do not interfere with the use of the system by the City, and the test will be restarted.	
E. The vendor shall have two opportunities to restart the test.	
F. If the system fails to pass the reliability test as described above, the City may negotiate a settlement with the Vendor, or may take other steps as deemed appropriate.	

Integrated Mapping Acceptance Test	
A. The Vendor shall perform acceptance tests to verify the accuracy of the Mapping Systems.	
B. Each Vendor shall provide details in his Response(s) on how testing will be conducted. Final system testing procedures will be mutually agreed upon prior to system testing.	

WARRANTY AND MAINTENANCE

WARRANTY PERIOD

A. The warranty period shall extend for 12 months following final system acceptance for ALL HARDWARE AND SOFTWARE proposed for this RFICE.

B. Final System Acceptance shall mean the completion of the 90 day reliability test described elsewhere in this document.

MAINTENANCE

SYSTEM MAINTENANCE, REPAIR, AND SERVICE FACILITIES

A. The Vendor shall be responsible for preventative and remedial maintenance of the system for a period of one year following final acceptance of the system by the City.

B. Maintenance shall include parts and labor.

C. Each Vendor shall state in its system Response the name, location, and capabilities of the service facility(ies), which will provide any of the installation, service and maintenance.

D. Vendors shall also include:

1. A description of the service facilities,

2. The size and qualifications of its staff, and

3. The number of years the service provider has been in business.

E. Vendors shall also include a list of customers (with names and telephone numbers) who operate systems of similar size and complexity for whom installation and maintenance services are

performed.	
F. This information is required to demonstrate to the City that local service facilities are capable of installing, optimizing, and maintaining the proposed system.	
PREVENTATIVE MAINTENANCE AND SPARE PARTS	
A. The Response shall define a preventative maintenance program that ensures, to the extent possible, failure free operation. The system availability shall be in accordance with other sections of this document.	
B. A sufficient supply of spare parts shall be maintained to allow immediate restoration of operation of the system infrastructure.	
C. In the event that these parts are consumed, replacement stock shall be available via emergency request and airfreight within 24 hours of the equipment failure.	
D. Vendors shall recommend a list of essential spare parts to be maintained by the City to ensure rapid restoration of systems operations in the event of component failure.	
E. In addition to parts, Responses shall include a list of recommended test equipment required to maintain the proposed system. An itemized price list shall be provided for both the recommended parts inventory and the recommended test equipment.	
F. Stocking of spare parts shall remain the responsibility of the local maintenance provider.	
G. Maintenance shall include keeping all software up to date. At the end of the first year of warranty/maintenance service, all software shall be of the latest version, release, and service release.	
H. Any penalties incurred during the warranty period will be based on the rates for the first year of maintenance following the warranty period,	

and will be deducted from the first year of maintenance, or billed to the Vendor if no maintenance agreement is purchased.

FOLLOW-ON MAINTENANCE FOLLOWING WARRANTY PERIOD

The Vendor shall include in his Response a price for the follow-on maintenance described herein. The Response price shall be for a five-year maintenance period starting 12 months after **final system acceptance.**

HARDWARE

A. The Vendor will be required to provide system and equipment maintenance support to the City during and after expiration of the warranty period.

B. The City will require a response time of no more than two hours for a "Major" failure of the system and no more than 8 hours (1 business day) for a "Minor" failure of the system.

C. The Vendor shall provide the following minimum information about its various maintenance plans for each of the following system components:

1. Servers, workstations and associated peripherals.
2. Storage and backup subsystems.
3. Printers.
4. All ancillary equipment required for efficient system operation.

D. The Vendor shall describe the scope of maintenance coverage and types of programs available to the City, and include all cost information in the Response.

E. The Vendor shall specify the Preventive Maintenance (PM) schedule and estimate the amount of non-scheduled maintenance (system down-time) for each component of the proposed system.	
F. Maintenance will be performed according to the plan selected by the City.	
G. The Vendor shall specify the minimum and maximum time required to respond to calls for non-scheduled maintenance 24 hours per day, seven days per week, and the location(s) from which such maintenance will be provided.	
H. The Vendor shall describe the policy for expediting repair of equipment that has been inoperative for eight hours, 24 hours, and longer than 24 hours.	
MAINTENANCE OF VENDOR FURNISHED SOFTWARE	
A. The City requires that the Vendor maintain all Vendor-furnished software in a reliable operating condition, and incorporate the latest software changes applicable to the installed system.	
B. The Vendor will describe the nature of his software maintenance coverage and program for maintaining reliable, efficient, and current software.	
C. The maintenance contract pricing shall include providing and installing any system software patches, upgrades, enhancements, etc., developed by the software manufacturer during the maintenance contract period.	
DOWN TIME CREDITS	
A. If any component of the system malfunctions, resulting in total loss of system operation or significantly degraded functionality, the Vendor will provide a credit to the City proportional to the amount of down time experienced:	

B. Down time credits will be computed in increments of one hour, based on maintenance charges in effect at the time, and will be deducted from the next regularly scheduled maintenance payment.	
C. Down time and response time credits will not be duplicated for the same hour, and will not apply during the warranty period.	
CONTINUATION OF MAINTENANCE	
A. In the event that the manufacture and sale of any component of the system is discontinued by the original equipment manufacturer, the Vendor will agree to provide continuous maintenance coverage, if desired by the City, for up to five years from the date the City is notified of the cessation of manufacture of the equipment.	
B. Maintenance contract payments for additional years will be made by the City on a monthly basis.	
SERVICE UNDER WARRANTY	
A. If it becomes necessary for the City to contract with another vendor for warranty repairs, due to inability or failure of the Vendor to perform such repairs, the Vendor shall reimburse the City for all invoices for labor, materials required, and the shipping/handling costs thereof, to perform such repairs, within 30 days from presentation of such City invoices.	
B. This shall only occur after the Vendor has been given written notice, reasonable time, and fair opportunity to respond and correct the problem.	
C. The cost limitation for such repairs will not exceed the parts and labor replacement price of the repair.	

COST RESPONSE

GENERAL INSTRUCTIONS ON SUBMITTING COST RESPONSES

Respondents must submit a Cost Estimate in MS Excel format by email to the email address stated on the **cover page of this RFICE**.

FORMAT FOR SUBMITTING COST RESPONSES

Cost Responses will be submitted using the Microsoft Excel Workbook associated with this RFICE. Outside the cost Response, Respondents shall not allude to any information regarding the cost of a proposed solution other than to designate if an item of discussion is a mandatory or optional item.

NOTE: The price that will be used for the cost calculations will be the initial price, and the maintenance costs for years 2 – 6. The costs will cover the time period from implementation, the warranty period (1 year from final acceptance) and the first five years of maintenance.