December 5, 2018

Carolyn Rice, Chair  
Automatic Data Processing Board  
451 West Third Street  
Dayton, OH 45402

Dear Ms. Rice:

An Automatic Data Processing Board meeting has been scheduled for Wednesday, December 12, 2018 at 9:00 a.m. in the 6th floor Data Processing Training/Conference Room. The agenda will be as follows with supporting documentation attached.

(1) Minutes from November 14, 2018 meeting

(2) Sheriff’s Office – Purchase of the Motorola CallWorks Geo-Diverse E-911 pone system with a ten year commitment for software support, one hardware refresh, and extended warranty. (cost not to exceed $1,982,453.00)

Sincerely,

KARL L. KEITH, Secretary  
Automatic Data Processing Board

KLK/bru

Attachments

Cc: ADP Board Members  
James Alford, Data Processing Director  
Tina Ratcliff, Records Manager  
Steven Hollon, Common Pleas Court Administrator  
Kate Evans, Auditor’s Office  
Lynn Cooper, Treasurer’s Office  
Mary Montgomery, Prosecutor’s Office  
Jonathan Rike, BCC IT  
Chris Boyd, Data Processing  
Steve Glardon, Data Processing
Cc: Ellis Shockley, Data Processing  
Eric Armstrong, Domestic Relations Court  
Jennifer Petrella-Ahrens, Domestic Relations Court  
Tyler Small, Administrative Services-Purchasing  
Bart Kincaid, Sheriff’s Office  
Debra Harden, Recorder’s Office  
Dana Brown, Clerk of Courts’ Office  
Chris Williams, Coroner/Crime Lab  
Ann Bryant, Commission Office  
Edward McNachtan, Common Pleas Court  
Amy Wiedeman, Administrative Services  
Sam Blair, Auditor’s Office  
News Media
AUTOMATIC DATA PROCESSING BOARD MEETING  
November 14, 2018

PRESENT:  
Kriss Gang for Carolyn Rice, Chair  
Dr. Kent Harshbarger, Vice-Chair  
Bart Kincaid for Sheriff Phil Plummer, Member  
Dan Foley, Member  
Steve Hollon for Judge Mary Katherine Huffman, Member  
Dana Brown for Russ Joseph, Member  
Debra Harden for Brandon McClain, Member  
Steve Harsman, Member  
Jan Kelly, Member  
Edward McNachtan, Common Pleas Court-General Division  
Thad Sargent, Job & Family Services  
Tina Ratcliff, Records Management  
Johnathan Rike, BCC-IT  
James Alford, Data Processing  
Chris Boyd, Data Processing  
Ellis Shockley, Data Processing  
Steve Glardon, Data Processing  
Betty Upshaw, Data Processing Administrative Assistant

The Vice-Chair, Dr. Kent Harshbarger, called the November 14, 2018 Automatic Data Processing Board meeting to order. (A copy of the agenda is attached hereto for reference.) Dr. Harshbarger noted there was one more meeting on the schedule for 2018 (December 12). He thanked those in attendance for their service to the Board as some would be transitioning to different places in 2019.

The first item of business was the approval of the minutes from the September 12, 2018 meeting. Dan Foley moved for approval of the minutes as presented. Motion was seconded by Jan Kelly. Motion carried unanimously.

The next agenda item, the only request submitted to the Board, was one from the BCC Information Technology Department seeking to purchase a Virtualization solution to replace the outdated application servers supporting Job and Family Services business processes. Thad Sargent, the Assistant Director for Job and Family Services, referred to the memo in the agenda packet and told the Board this purchase would be Phase 2 of their virtualization project. Mr. Sargent stated Phase 1 consisted of the placement of a SQL server at the Haines Center. He reported, with this purchase, they could do the same thing at the Job Center so they could have redundant servers at both locations for backup and testing purposes. Mr. Sargent said this purchase, consisting of hardware, software, and professional services at a cost of $150,053.12, would be made from Emerge IT Solutions. Following the presentation, Mr. Alford questioned the length of the maintenance with Emerge, and whether it included both the hardware and software. Jonathan Rike reported he assumed the maintenance was for three years, and that it included both the hardware and the software. Mr. Rike was not sure, so he said he would get Mr. Alford clarification on these issues later. Mr. Alford also questioned who
was going to support the hardware and software. Mr. Rike assured him
the BCC IT Department staff would be trained by Emerge and would be
supporting their virtualization solution. After further discussion on
training and other issues, Steve Harsman made a motion to approve this
request. Debra Harden seconded the motion. Motion carried
unanimously.

There being no further business, a motion to adjourn was made by
Steve Harsman. Motion seconded by Dan Foley. Motion carried
unanimously.

Respectfully submitted,

KARL L. KEITH, Secretary
Automatic Data Processing Board

KLK/bru

Attachment
Carolyn Rice, Chair
Automatic Data Processing Board
451 West Third Street
Dayton, OH 45402

Dear Ms. Rice:

An Automatic Data Processing Board meeting has been scheduled for Wednesday, November 14, 2018 at 9:00 a.m. in the 6th floor Data Processing Training/Conference Room. The agenda will be as follows with supporting documentation attached.

(1) Minutes from September 12, 2018 meeting

(2) BCC-Information Technology - Virtualization Phase 2 - Job and Family Services (Purchase of hardware, software and professional services in the amount of $150,053.12)

Sincerely,

[Signature]

KARL L. KEITH, Secretary
Automatic Data Processing Board

KLK/bru

Attachments

Cc: ADP Board Members
James Alford, Data Processing Director
Tina Ratcliff, Records Manager
Steven Hollon, Common Pleas Court Administrator
Kate Evans, Auditor’s Office
Lynn Cooper, Treasurer’s Office
Mary Montgomery, Prosecutor’s Office
Jonathan Rike, BCC IT
Chris Boyd, Data Processing
Steve Glardon, Data Processing
Ellis Shockley, Data Processing
Ms. Rice

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November 8, 2018

Cc:  Eric Armstrong, Domestic Relations Court
     Jennifer Petrella-Ahrens, Domestic Relations Court
     Tyler Small, Administrative Services-Purchasing
     Bart Kincaid, Sheriff’s Office
     Debra Harden, Recorder’s Office
     Dana Brown, Clerk of Courts’ Office
     Chris Williams, Coroner/Crime Lab
     Ann Bryant, Commission Office
     Edward McNachtan, Common Pleas Court
     Amy Wiedeman, Administrative Services
     Sam Blair, Auditor’s Office
     Thad Sargent, Job & Family Services
     News Media
Mr. Karl Keith  
Montgomery County Administration Building  
451 W. Third St.  
Dayton, OH 45422-1027

Mr. Keith,

The Sheriff's Office would like to be added to the December, 2018 Data Processing Board agenda to request approval for the purchase of the Motorola CallWorks Geo-Diverse E-911 phone system with a ten year commitment for software support, one hardware refresh, and extended warranty. The total cost of this system is not to exceed $1,982,453. This purchase has already been approved by the ECPC Board and all funding is budgeted for by the Regional Dispatch Center OCA code 236350.

The NG9-1-1 solution is an integrated IP based, Geo-Diverse Federated system with features that include redundant NG9-1-1 phone systems located at both the Regional Dispatch Center and the County Jail facility. The solution is i3 complaint, which will allow us to connect to other IP based 9-1-1 systems that are deployed by the State of Ohio.

The pricing breakdown is as follows:

Year 1: $794,284.49 Base System and Text-to-Text option
Year 2: $149,869.01 Warranty and Text-to-Text option
Year 3: $149,869.01 Warranty and Text-to-Text option
Year 4: $149,869.01 Warranty and Text-to-Text option
Year 5: $124,564.23 Warranty and Mid-Cycle Hardware Refresh
Year 6: $115,740.25 Warranty
Year 7: $124,564.23 Warranty
Year 8: $124,564.23 Warranty
Year 9: $124,564.23 Warranty
Year 10: $124,564.23 Warranty
This purchase is being made under the guidance of Ohio Revised Code 128.03 section (F), which states that:

128.03(F) Notwithstanding any other provision of law, the purchase or other acquisition, installation, and maintenance of the telephone network for a 9-1-1 system and the purchase or other acquisition, installation, and maintenance of customer premises equipment at a public safety answering point made in compliance with a final plan or an agreement under section 128.09 of the Revised Code, including customer premises equipment used to provide wireless enhanced 9-1-1, are not subject to any requirement of competitive bidding.

The competitive bid exemption has been reviewed by the County Purchasing Director, and was previously authorized under Resolution 14-0717.

Respectfully Submitted,

Bart Kincaid
IT Director
Automatic Data Processing Board Checklist

Department: Sheriff

Name: Bart Kincaid

Is the department purchasing off state term?
Yes ☐ No ☐ STS#_______

Is the department purchasing off GSA?
Yes ☐ No ☐ GSA#_______

Is this purchase considered an upgrade?
Yes ☐ No ☐

Replacement?
Yes ☐ No ☐

New Purchase?
Yes ☐ No ☐

The amount of this purchase will not exceed.
$1,982,453.00

The funding for this purchase will come from:
236350

Are there any integrations issues?
Yes ☐ No ☐

If yes, explain:

Were your system specifications developed internally or by and outside vendor/source?
Internally

If outside vendor/source, identify:

Is this purchase being purchased off of a different contract?
Yes ☐ No ☐

If yes, what is the contract number?

Who authorized this from the Purchasing Department?
## SECTION 7

**PRICING**

(VALID THROUGH DECEMBER 20, 2018)

### 7.1 SIDE A AND SIDE B PSAP’S WITH HARDWARE

<table>
<thead>
<tr>
<th>Plan Description</th>
<th>LIST PRICE</th>
<th>OFFER PRICE</th>
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</thead>
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<tr>
<td>Plan 1: Total Base System with 1-Year Prepaid Software Support and HW Warranty</td>
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<td>$889,130.96</td>
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<tr>
<td>Plan 2: Total Base System with 5-Year Prepaid Software Support and Extended HW Warranty</td>
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<td>$1,811,043.22</td>
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<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>$124,564.23</td>
<td></td>
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<tr>
<td>Year 3</td>
<td>$124,564.23</td>
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<td>Year 9</td>
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<tr>
<td>Year 10</td>
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</tr>
<tr>
<td>Total:</td>
<td>$1,906,538.58</td>
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</tr>
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</table>

| Plan 5: Total Base System with 10-Year Commitment System and Software Support, Hardware Refresh, Extended Warranty, TCC Connectivity | $794,284.49 |
| Year 2                                                                           | $149,869.01  |
| Year 3                                                                           | $149,869.01  |
| Year 4                                                                           | $149,869.01  |
| Year 5                                                                           | $124,564.23  |
| Year 6                                                                           | $115,740.25  |
| Year 7                                                                           | $124,564.23  |
| Year 8                                                                           | $124,564.23  |
| Year 9                                                                           | $124,564.23  |
| Year 10                                                                          | $124,564.23  |
| Total:                                                                           | $1,982,452.92 |
SECTION 1

CALLWORKS

1.1 INTRODUCTION

Tackling one of the toughest 9-1-1 public safety dilemmas, CallStation from CallWorks is pioneering the convergence of Next Generation 9-1-1 Call Taking, Mapping, IP based telecommunications systems and integration services. Our state-of-the-art solution is the only natively integrated, browser-based, VoIP and Network centric design in the industry. Using the latest software design and telephony technologies, our native I3-compatible application manages the receipt of emergency calls with a simpler, easier-to-use work-flow approach and user interface designed to work the way you do, today.

We endorse the forward thinking of Montgomery County to advance their level of public safety service for the citizens of the region. Our system was specifically designed and developed for IP based solutions supporting Single Back Room, Geo-Diverse and Federated Next Generation solutions. The system has a complex but simple array of features, many critical to the way that you manage your centers today. Our objective is to provide Montgomery County with the hardware, software, legacy interfaces, connections and related components along with a suite of professional services that will secure your future with the necessary benefits that allow your staff to serve and protect its citizens with the most economical and efficient Next Generation call handling solution.

Motorola Solutions is pleased to present Montgomery County, a state-of-the-art, Integrated IP based NG9-1-1, Geo-Diverse Federated system including all identified customer requirements for a comprehensive solution. The CallWorks platform provides for a more cost effective and easy to use solution focused on eliminating traditional costly integration and maintenance of proprietary legacy systems while revolutionizing the 9-1-1 call taking to dispatch workflow.

CallWorks is aware that many PSAPs, dispatch agencies and distribution channels desire a balance between mainstream and state-of-the-art, next generation technology and generally seek to employ a total solution that will prolong the life of the proposed system at a lower cost. With this in mind, CallWorks provides a solution that is based upon advanced, yet proven technology derived from current IT, IP, VoIP, HTML 5, and Web services standards, yet allows smooth migration as next generation 9-1-1 matures. The proposed solution, while supporting legacy and NG9-1-1, provides open architecture for both the hardware, software and network components unlike any competitive offering. This solution as proposed to Montgomery County addresses and includes all the hardware, software, associated project management, installation, IP migration and transition, user training and other services as requested.

CallWorks products are an integral part of Motorola Solutions’ end-to-end Public Safety Software Enterprise driving the integration of a complete Command Center suite. From answering thousands of emergency calls and text messages to processing video, disparate
evidence and records, Motorola Solutions is helping agencies transform into intelligence-driven command centers, enabling them to make more informed decisions resulting in better outcomes. Learn more about Motorola Solutions’ wide-ranging product portfolio.

1.2 KEY SYSTEM CAPABILITIES AND DIFFERENTIATORS

The CallWorks solution provides many significant advantages. Listed below are highlights of a few of the many unique standout capabilities of the CallWorks system.

- **Operating Systems** - Technologically advanced Call Handling systems based on the Linux Operating System, Web services and an application framework developed using state-of-the-art Web services techniques and the JAVA development environment. User interfaces require only a browser for all applications and are optimized for Mozilla Firefox ESR, which is fast, efficient and less costly to operate. Workstations operate on the current shipping release of the Windows Operating system for desktops.

- **Database** - Integrated systems designed and delivered as a standard with the MySQL Relational Database Management System. The database architecture allows for open, extensive information sharing, comprehensive reporting and scalability for adding additional capabilities in the future as required.

- **Telecom / 9-1-1** - CallWorks provides as a standard component, an industry-leading, custom CallWorks distribution of the VoIP Asterisk softswitch from Digium, Inc. This custom distribution of Asterisk, engineered and packaged with mature Media Gateways from AudioCodes, provides traditional telecom interfaces to the PSTN and Legacy CAMA interfaces as well as general administrative capabilities, including voice mail and more. The system is highly configurable to support 9-1-1, emergency, non-emergency and administrate telephony needs. CallWorks, via its SipWorks interface, also provides emerging i3 Next Generation connectivity.

- **Call Handling Functions** - The CallWorks call handling functions are very robust and include, but are not limited to, single button transfers (on and off net) via an extensive directory, ALI displayed on the VoIP telephone as a backup, integrated call control from the Map, silent monitoring, barge-in, override, unlimited multi-party conferencing, abandoned call management, ACD, integrated SMS call processing, released call review, and much more.

- **Headset/Radio** - Traditional headset and radio interfaces are provided by a Power Over Ethernet Audio Interface Unit (AIU). This provides all necessary analog interconnections for managing Call Taker/Dispatcher headsets and radio system integration. A connection is not required at the Call Taker workstation and is powered via the network, saving complex power cords and supplies at the workstation. This design eliminates the headaches of using the PC as the voice management component with complex driver and OS maintenance concerns. The Audio Interface Unit (AIU) is not required for system use. A Polycom telephone is all that is actually required. The AIU also does not arbitrate telecom and radio traffic. If that is required, it serves as the CallWorks interface to a Radio system managed arbitrator.

- **Notifications** - Another strategic advantage of the integrated CallWorks Messaging Engine is the capability to provide automated outbound notifications as part of a service request.
status change or a global announcement. Authorized users may create and manage notifications from AdminStation.

- **Call Recording** – Although the CallWorks platform is not officially marketed as a Long-Term Recorder, the system records and stores all 9-1-1 calls for IRR purposes at each workstation in a traditional fashion. 9-1-1 call recordings are made available for playback from the Call Screen. Additionally, call recordings are available for playback and for long-term download from DecisionStation. Calls may be played back with permission from any location where DecisionStation is configured. The system can be configured to record administrative calls as well.

- **Architecture** – The browser based, redundant and High Availability (HA) architecture of our systems allow for centralization and integration of server applications, VoIP switching and the database, while also allowing extensive remote access without the burden of excessive implementation and cost. For larger or regional initiatives, the system is extensible over a network in Federated, Geo-Diverse configurations as well as centralized hosting.

- **COTS Design** – CallWorks is dedicated to utilizing off-the-shelf, yet highly configurable hardware solutions that eliminate costly implementations and excessive maintenance costs. CallWorks standardizes with Cisco networking components, Dell workstation computing hardware, Dell HA Servers, APC Power Management Systems, AudioCodes Gateways, and Polycom VoIP telephones.

- **Implementation** – The system may be installed and serviced by CallWorks or through extensive channel relationships or locally provided by authorized dealers. Users may also be trained to be Customer Owned and Maintained (COAM) if desired. Hosted solutions may also be available in your area.

- **Ease of Use** – The CallWorks system offers the most intuitive and easy-to-use interface available in the industry today by simply requiring a browser. This user-friendly and easy-to-deploy method provides significant time and cost savings in training new personnel.

- **Support** – CallWorks provides quality, around-the-clock customer care and service with remote monitoring as a standard offering. At any time or day of night, a member of our highly skilled service team is available to assist customers with any questions or concerns.

### 1.3 ENHANCEMENTS CALLWORKS BRINGS TO THE PSAP

Our systems refine and enhance workflow, while easing many of the issues commonly found in today's PSAPs and dispatch centers. The following address the issues core to the CallWorks platform:

- **Workflow** – One of the primary goals of the CallWorks platform is to streamline the effort of the typical Call Taker/Dispatcher. Most Call Takers and Dispatchers use very sparingly the expensive and complex IWS solutions sold for years for the purpose of answering and managing 9-1-1 calls for service. With the deployment of CAD / Incident Management and Mapping solutions to a large portion of PSAPs, most use those tools for the bulk of the dispatch process after call answer. Our vision was to truly integrate the processes such that a single application could be deployed and managed to work the way the centers actually do,
by taking calls, mapping those calls and dispatching and managing resources in a much simpler, more flexible and inexpensive manner.

- **Lack of Complexity** – CallWorks sought to completely eliminate the continuing complexity of the IWS PC itself. The legacy and most current IWS competitive offerings continue to provide overly complex IWS designs through heavy client applications, specific sound cards, TDD modems and headset interface devices leading to maintenance intensive deployments and on-going driver, patch and OS compatibility support issues. CallWorks targeted the ability to more closely align with a network offering by allowing faster deployment as well as providing a simpler environment to maintain. This was accomplished by delivering a new architecture in which only an Internet Browser is needed at the desktop where specific hardware and drivers are not required. This creates an IWS replacement that requires no application software installation or client-side driver support. There is also no cabling between the VoIP Telephone set, the Headset Interface device and the IWS PC. This clean and simple design also enhances cohabitation with other applications critical to the user, such as Radio and third-party CAD or mapping applications as required.

*Note: The CallWorks Platform does NOT require Internet connectivity to operate. The platform simply shares those technological advancements and capabilities.*

- **User Interface** - The CallWorks System provides an industry first browser-based application environment for all users interfacing to the system including call taking, mapping, dispatch, reporting and management. This creates an easy-to-use, install and maintain environment. The environment enhances our capability to support hosting and networked deployments, allowing for easier transition as NG9-1-1 progresses.

- **Audio Interface Unit** – The CallWorks AIU is responsible for providing analog headset/handset connections for the primary Call Taker and optionally a Supervisor/Trainer using dual jacks. The AIU is Powered Over Ethernet and does not require AC power. The AIU also supports traditional radio system interface if radio-based headset sharing is desired.

- **Enhanced Location**: RapidSOS location integration. CallWorks offers seamless integration with RapidSOS improved wireless location / GPS coordinates. This integration offers the RapidSOS coordinates as a supplemental source to the traditional ALI data so the Call Taker can compare the two location reports and use the one, which is most useful in the context of the call. In most cases this will be the RapidSOS coordinates which are provided both in text and on a map plot with dynamic updates. If the RapidSOS integration is configured and the location data is available, this information is recorded in call details for reporting and data exports.

- **Reporting** - With CallWorks DecisionStation, authorized users can monitor live operations for calls, view canned reports, perform ad-hoc database queries, and more. DecisionStation is browser-based and can be accessed from any workstation on the network, i.e. no software to install or license.

- **Remote Support** - A vital component in supporting systems is access. With CallWorks' simplified design, all devices and components down to the telephone and headset units are IP endpoints and remotely addressable. CallWorks has unprecedented remote reverse VPN access, monitoring and control capability via the customer provided broadband connection. We can quickly and easily assist customer and channels in troubleshooting or scheduled
maintenance as needed. Additionally, CallWorks has further engineered a robust power distribution unit (PDU) within the rack that is also network addressable as needed. CallWorks includes out of band management access to all of the back room devices through a serial distribution unit. Through this device, which is connected to most of the network infrastructure devices in the back room such as Gateways, Switches, and the Server, we can serially access many devices for additional root level support if required. Secure remote control will access workstations quickly to troubleshoot and manage without impacting the productivity of users. CallWorks can detect performance problems with the use of Windows performance registry counters and Windows Management Instrumentation (WMI) queries.

- **CallStation** is VoIP based with a legacy CAMA interface, complies with Next Generation 9-1-1 and its messaging platform is consolidated with Emergency and Administrative call taking served by NENA compliant standard telephony. External VoIP sets from Polycom, Inc. are available as needed along with a traditional CAD spill for integration into other third-party products like CAD, Long-Term Recorders and Mapped ALI if desired. Browser based Mapped ALI can be added if needed at no additional charge outside of necessary professional services. DispatchStation (CAD) can be added to those sites that need or may be considering an upgrade for a totally integrated solution.

- Each deployment includes an administrative application (AdminStation), a reporting solution (DecisionStation), and a real-time statistics monitor (Status Monitor).
  - **AdminStation** is a browser-based access capability used by system managers, maintenance staff, supervisors or other authorized personnel to facilitate the set-up, configuration and on-going management of each agency, PSAP or regional network as required.
  - **DecisionStation** is a browser-based access capability used by system managers, maintenance staff, supervisors, remote locations or precincts, mobile users or other authorized personnel to view real time and historical call detail records, active call monitor, data mining, reports, and much more.
  - **Status Monitor** is a browser-based access capability used by authorized personnel to view real time statistics on all counts by status, average call answer time and duration, and user status. The Status Monitor is primarily intended for large screen, high-resolution monitors.
2.1 OUR VISION IS THE NEW 9-1-1 REALITY

CalWorks is proud to offer a comprehensive Next Generation public safety solution that provides users with the confidence and peace of mind that comes from the knowledge that they are dealing with highly respected and experienced leaders in 9-1-1 call taking and dispatch solutions. CalWorks works closely with its customers to exceed expectations and to ensure the delivery and approach they require.

The challenges ahead will not end with Next Generation 9-1-1. Unfortunately, many vendors that you rely on today would have you believe that simply installing a Voice over Internet Protocol (VoIP) solution prepares you for NG9-1-1. CalWorks knows this is not the case. At CalWorks, we are not content to simply keep up with existing standards and follow current trends. With our products, CalWorks not only seeks to anticipate the next steps in NG9-1-1, but to also shape the future of the industry. When you select CalWorks, you are getting a partner with a far-reaching vision and innovative products that go beyond the defined standards to deliver real value, immediate benefits and a lower total cost of ownership.

The CalWorks proposal provides a complete solution that:

- Is designed to industry standard(s) including the NENA I3 standard with on-going support and known total cost of ownership for the desired contract term.
- Provides a redundant and highly available foundation for NG9-1-1 that is designed to support core I3 functionality, both now and in the future. CalWorks guarantees on-going I3 compliance for 9-1-1 Call Taking CPE. A single standard I3 connection to the ESInet per PSAP is included. A purchasable option to support multiple connections to the ESInet may be required based on Agency, State, or ESInet provider specifications as standards develop and progress.
- Is remotely monitored, secure, resilient, and resistant to cyber-attack and penetration.
- Provides the ability to remotely monitor, manage and support the systems on a 24/7/365 basis.
- Is able to support and integrate with Interim SMS Text-to-9-1-1 solutions as well as native NGCS I3 standards.
- Provides increased fault tolerance, reliability, resiliency and disaster recovery through Geo-Diverse Federated system designs.
• Provides clear demarcations of responsibility and accountability in the handling of all traffic related to an emergency request originating from the public and delivered to a PSAP via the NG9-1-1 ecosystem.
• Provides a seamless Managed IP, NG9-1-1 ready infrastructure proactively managed and administered through a combination of CallWorks and Motorola Solutions local support teams.
• Provides Enterprise wide Real-Time Monitoring, Dashboard Reporting and MIS.

Additional information may be obtained from our website at www.MotorolaSolutions.com/CallWorks.

2.2 PROPOSED SYSTEM

CallWorks proposes an all-inclusive, Geo-Diverse and Federated NG9-1-1 Call Handling platform delivered over dedicated engineered Local Area Network. This LAN is capable of supporting multiple redundant controllers at Primary and Back-Up PSAP locations as required. Connectivity between locations is assumed will be delivered over a customer-provided and managed MPLS or equivalent IP transport network.

The CallWorks CallStation platform is designed and delivered to allow migration to full i3 support and transition to a future Core Routing capability. The system as initially designed will support any number of Call Taker positions, allowing fifty (50) concurrent licensed users on the system at any given time.

The proposed system includes hardware, software and services to support the CallStation platform and migration to NG Core Routing for i3 compliance as Montgomery County moves forward. Existing CAMA and ALI circuits will be utilized initially to manage call ingress ANI/ALI services to the PSAPs. A single standard i3 connection to the ESI net per PSAP is included. A purchasable option to support multiple connections to the ESI net is available based on Agency, State, or ESI net provider specifications as standards develop and progress.

2.2.1 Summary of Offer

CallWorks proposes an all-inclusive, NG9-1-1 Call Handling platform.

• Geo-Diverse and Federated redundant back room architecture for the two PSAP locations
  • SIDE A - MCRD
    • (26) Call Handling positions including (18) Full CallWorks ICC Licenses to (P1 or Flex) and (8) Dark/Limited Use CallWorks ICC Licenses to (P1 or Flex)
    • Single 22-inch LCD Monitors, a VoIP Phone, AIU for radio integration and Genovation keypad at each position
    • Position Based Recording
    • (32) FXS Ports for CAMA Trunks (includes room for growth)
    • (8) FXO Ports (includes room for growth)
    • (2) PRI Gateway for Admin lines
(2) ALI circuits
- Equipment cabinet UPS provided by MCRD
- ECATS IP Interface, State Specific
- (1) ACD Wallboard Workstation

SIDE B (Backup)
- (14) Call Handling positions including (14) Dark/Limited Use CallWork ICC Licenses to (P1 or Flex)
- Single 22-Inch LCD Monitors, a VoIP Phone, AIU for radio integration and Genovation keypad at each position
- Position Based Recording
- (16) FXS Ports for CAMA Trunks (includes room for growth)
- (2) PRI Gateway for Admin lines
- (2) ALI circuits
- (1) Equipment cabinet UPS
- ECATS IP Interface, State Specific

- Optional (2) Laptop Positions
- SMS MSRP TCC Connectivity access license for a direct connection to a TCC. Customer is responsible for the TCC text service and connectivity costs.
- Spares included for mission critical equipment
- Customer provided IP network to back up remote location to CallWorks specifications.
- Designed to support up to fifty (50) concurrent Call Taker positions
- Basic GIS management services to support the hosted Mapping capabilities in Call Handling
- Optional utilization of the integrated CallWorks Mapped ALI solution as a browser tab to see calls ringing into the PSAP before answer with integrated call control, offered at no cost.
- Customer must supply a complete ESRI-based GIS formatted map (shapefile) thirty to sixty days prior to on-site system installation.
- Serial Interfaces to CAD, Mapping, LTR, other as required
- Support for NGCS 13 based Text-to-9-1-1
- NG9–1–1, 13 core functions and capabilities for future ESInet deployment. A single standard i3 connection to the ESInet per PSAP is included.
- Call management and reporting services
- Data collection and reporting services on all 9-1-1 transactions
- Continuous workstation performance monitoring and enterprise workstation antivirus protection
- System and component level monitoring, alarming, diagnostics and reporting services
- All-Inclusive software support, updates, and upgrades for the contract term, no surprise charges
- 24/7/365 Help desk, trouble ticketing and customer support services
- Installation, testing, training, maintenance and on-site support services by CallWorks and Motorola Solutions
- Project management services for the planning, design, testing, installation and operation of the systems for contract term
## 2.2.2 Equipment List

Below is the equipment list that details the end user hardware proposed.

### 2.2.2.1 Side A PSAP

<table>
<thead>
<tr>
<th>Qty</th>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>26</td>
<td>ECX100101</td>
<td>WK5 PC, Dual Video, 4G RAM</td>
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<td>ECX Dual Server, Federated App. Assem., HA</td>
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<td>AUDIO INTERFACE UNIT (AIU)</td>
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<td>26</td>
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<td>Polycom VVX410 VoIP Phone</td>
</tr>
<tr>
<td>26</td>
<td>ECX100204</td>
<td>Keypad, Genovation 24 Keypad</td>
</tr>
<tr>
<td>4</td>
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<td>Media Gateway, 8 Port FXS (Station Rec.)</td>
</tr>
<tr>
<td>2</td>
<td>ECX100305-2</td>
<td>Mediant 1000 Chassis (CAMA), M1KB-2AC</td>
</tr>
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<td>8</td>
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<td>Mediant 1000 Gateway FXS Card (CAMA), M1KB-VM-4FXS</td>
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<td>2</td>
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<td>Media Gateway, 4 Port FXO to SIP</td>
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<tr>
<td>2</td>
<td>ECX100314**</td>
<td>Media Gateway, PRI to SIP</td>
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<td>ECX100315**</td>
<td>Rack Shelf, Media Gateway, 2 GW per Shelf</td>
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<td>ADMINISTRATION, SITE License</td>
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<td>MESSAGEWORKS, SITE License</td>
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<td>Ecats IP Interface, State Specific</td>
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<td>2</td>
<td>ECX500008</td>
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<td>IP to Serial Dist., 32 Port</td>
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### 2.2.2.2 Side B PSAP (backup)

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<tr>
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<td>ECX100201-1</td>
<td>Polycom VXV410 VoIP Phone</td>
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<td>Keypad, Genovation 24 Keypad</td>
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<td>Media Gateway, 8 Port FXS (Station Rec.)</td>
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<td>Mediant 1000 Chassis (CAMA), M1KB-2AC</td>
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<td>4</td>
<td>ECX100305-3</td>
<td>Mediant 1000 Gateway FXS Card (CAMA), M1KB-VM-4FXS</td>
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<tr>
<td>2</td>
<td>ECX100314**</td>
<td>Media Gateway, PRI to SIP</td>
</tr>
<tr>
<td>1</td>
<td>ECX100315**</td>
<td>Rack Shelf, Media Gateway, 2 GW per Shelf</td>
</tr>
<tr>
<td>14</td>
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<td>CALLWORK ICC License to (P1 to Flex) Limited Use/Dark</td>
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<td>1</td>
<td>ECX200004</td>
<td>DECISIONSTATION, SITE License</td>
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<tr>
<td>1</td>
<td>ECX200006</td>
<td>ADMINISTRATION, SITE License</td>
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<td>ECX200007</td>
<td>MESSAGWORKS, SITE License</td>
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<td>1</td>
<td>ECX200008</td>
<td>SIPWORKS, I3/IP INTERFACE, PSAP License</td>
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<td>1</td>
<td>ECX200019-SS</td>
<td>Ecats IP Interface, State Specific</td>
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<td>140</td>
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<tr>
<td>1</td>
<td>ECX500001-24CH</td>
<td>CABINET ASSM, 24 RU, COMPLETE</td>
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<td>4</td>
<td>ECX500002-PR**</td>
<td>POS. BASED REC KIT - 4 Port</td>
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<td>ECX500004-FP</td>
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<td>ECX500005-1</td>
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<td>ALI MODEM, E911 CSU/DSU</td>
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<td>IP to Serial Dist., 32 Port</td>
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### 2.2.2.3 Optional Laptop Positions

<table>
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<th>Description</th>
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<tr>
<td>2</td>
<td>ECX100101-P**</td>
<td>Portable ANS. Pos., Laptop/VoIP Tel./ Kit Assm.</td>
</tr>
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<td>2</td>
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### 2.2.2.4 Optional Spare Equipment

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<th>Part Number</th>
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<tbody>
<tr>
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<td>ECX100001-NS</td>
<td>AUDIO INTERFACE UNIT (AIU)</td>
</tr>
<tr>
<td>2</td>
<td>ECX100201-1</td>
<td>Polycom VVX410 VoIP Phone</td>
</tr>
<tr>
<td>2</td>
<td>ECX100204</td>
<td>Keypad, Genovation 24 Key</td>
</tr>
<tr>
<td>2</td>
<td>ECX100305-3</td>
<td>Mediant 1000 Gateway FXS Card (CAMA), M1KB-VM-4FXS</td>
</tr>
</tbody>
</table>

### 2.2.2.5 Geo-Diverse PSAP Design

![Geo-Diverse PSAP Design Diagram]

### 2.2.2.6 Workstation Detail
2.2.2.7 Local WAN Detail

2.2.2.8 Recommended WAN Design
2.2.2.9 Typical Rack Design
2.2.2.10 Position Based Recording Detail
2.3 ARCHITECTURAL AND SYSTEM OVERVIEW

In Public Safety, the 9-1-1 Public Safety Answering Point (PSAP) is charged with answering 9-1-1 calls from the Public, and rapidly dispatching appropriate resources to an emergency. There are two basic processes involved -- call taking and dispatching. In some cases, these tasks are handled at separate positions, but in many installations, a single operator handles them. CallWorks supports call taking and dispatch functions from any position or distributed as required. The browser based, redundant and High Availability architecture of the CallWorks system allows for centralization and integration of server applications, VoIP switching and the database, while allowing extensive remote access without the burden of excessive implementation and cost. For larger or regional initiatives, the system is extensible over a network in Geo-Diverse/Federated configurations as well as centralized hosting.

2.3.1 Call Taker Position

The Call Taker answers the initial 9-1-1 call. The telephone network provides the PSAP with Automatic Number Identification (ANI) via CAMA based PSTN connections and Automatic Location Information (ALI) in a data stream. With the CallWorks system, this information is automatically displayed in the application, and incident processing is initiated as required.

Once location information is displayed (ALI data), the CallWorks system provides integrated map, location information, hazard information, premise information, location and call histories and more to the Call Taker. This data greatly enhances the Call Taker's capability to develop a more informed and precise line of questioning and to determine the exact location of the emergency, the nature of the incident, persons involved, and to assess the danger of the situation. Once this information has been collected and entered, the dispatch process is initiated or passed to a third-party CAD system if using a 9-1-1 only system configuration.

2.3.2 CallWorks Architecture

2.3.2.1 Software

Operating System: The operating system for CallWorks is LINUX.

Database Engine: CallWorks Java based applications operate with MySQL RDBMS.

Map Engine: CallWorks is fully integrated with MapServer utilizing ESRI-based GIS formats. CallWorks creates an SQL geo file from the ESRI data as required. Map tiles are cached for speed.

Reporting: CallWorks includes standard call, CAD, ACD, and many other reports and ad-hoc capability via DecisionStation and created with Jasper Reports.

Interface Systems: CallWorks includes a message engine capable of interfacing to e-mail, SMS, remote printing, remote VoIP sets with ALI, radio, and RMS systems as required.
**Virus Protection:** CallWorks includes enterprise workstation antivirus protection software providing real-time status updates and alerts to ensure maximum security across the network. Continuous antivirus protection and quick scanning of critical workstation system areas provides complete endpoint protection from dangerous attacks and malicious software.

### 2.3.2.2 System

The basic architecture of the CallWorks system consists of the CallWorks JAVA Message back-end (CallWorks Domain), MapServer and its dependencies, CallWorks distribution of the Asterisk VoIP Engine, CallStation application server and the relational database management system (RDBMS). The CallWorks client (Firefox browser) connects to the CallWorks Domain, which acts as a Web Browser for passing messages via TCP/IP connected to the RDBMS through JAVA.

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**CallWorks Product Highlights**

- 9-1-1 (Next Generation & Legacy) + Mapping
- CAD + Mapping
- Consolidated Reporting
- Single, High Availability Platform