REQUEST FOR PROPOSAL
# 7185
PUBLIC SAFETY IP BASED NEXT GENERATION 9-1-1 PHONE AND VOICE RECORDING SYSTEMS
FOR
Washtenaw County
Finance Department

Issued By:
Washtenaw County Purchasing Administration Building
220 N. Main Street Ann Arbor, MI 48104
Beth A. Duffy, CPPB, Senior Buyer (734) 222-6761

Proposal Submitted by:

Please type Bidder’s Company Name & include as proposal cover
March 20, 2017

Washtenaw County Purchasing Division on behalf of the FINANCE Department is issuing a sealed RFP #7185 for the Product and Service delivery of a PUBLIC SAFETY IP BASED NEXT GENERATION 9-1-1 PHONE SYSTEM AND ASSOCIATED NETWORK. Effective July 1, 2015, the County has a new Local Vendor Preference (LVP) policy. Information is enclosed explaining the criteria as well as the vendor certification and affidavit.

Sealed Proposals: Vendor will deliver one (1) unbound original and one (1) bound copy, each with the pricing page flagged to the County location specified below. In addition, vendor will also deliver seven (7) electronic copies on a USB drive, CD-RW, or DVD in pdf format to the location specified below:

Washtenaw County Administration
Building Purchasing Division
220 N. Main St. Basement
Ann Arbor, MI 48104

By Thursday, April 27, 2017 @ 3:00PM EST

Proposals received after the above cited time will be considered a late bid and are not acceptable unless waived by the Purchasing Manager.

- Your proposal submission envelope(s) must be clearly marked including FedEx & UPS package labels "SEALED RFP #7185"
- Contractor/Vendor may submit a proposal for both the Next Generation Phone System (CPE) and Voice Recorder, or submit a proposal for just the Next Generation Phone System (CPE) or for just the Voice Recorder.
- Please direct purchasing and procedural questions regarding this RFP to Beth Duffy via e-mail only to duffyb@ewashtenaw.org .
- Please direct technical questions regarding this RFP to Dept contact Craig Swenson via e-mail only at SwensonC@pittsfield-mi.gov .

Thank you for your interest.
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PROPOSAL INFORMATION

1.1 PROPOSAL DEFINITIONS

Definitions

“Bidder” An individual or business submitting a bid to Washtenaw County

“Contractor/Vendor” One who contracts to perform services in accordance with a contract

“County” Washtenaw County in Michigan

“Department” Washtenaw County FINANCE

1.2 TERMS

A. Washtenaw County reserves the right to reject any and all proposals received as a result of this RFP. If a proposal is selected, it will be the most advantageous regarding price, quality of service, the CONTRACTORS qualifications and capabilities to provide the specified service, and other factors that the County may consider. The County does not intend to award a contract fully on the basis of any response made to the proposal; the County reserves the right to consider proposals for modifications at any time before a contract would be awarded and negotiations would be undertaken with the CONTRACTOR, or CONTRACTORS, whose proposal(s) is/are deemed to best meet the County’s specifications and needs.

B. The County reserves the right to reject any or all bids, to waive or not waive informalities or irregularities in bids or bidding procedures, and to accept or further negotiate cost, terms, or conditions of any bid determined by the County to be in the best interests of the County even though not the lowest bid.

C. Proposals must be signed by an official authorized to bind the CONTRACTOR to its provisions for at least a period of 90 days. Failure of the successful bidder to accept the obligation of the contract may result in the cancellation of any award.

D. In the event it becomes necessary to revise any part of the RFP, addenda will be provided. Deadlines for submission of RFP's may be adjusted to allow for revisions. To be considered, one (1) unbound original and 1 (one) bound copy and seven (7) electronic versions in pdf format, submitted on CD-RW, DVD or USB drive must be at the County as indicated on or before the date specified.
E. Proposals should be prepared simply and economically providing a straightforward, concise description of the CONTRACTOR’S ability to meet the requirements of the RFP. Proposals must be typed or clearly legible. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the proposal. CONTRACTOR shall ensure that proposals are submitted using both sides of recycled paper whenever practicable.

F. The initial award of this contract shall be for a period of 3 years, with an option to renew an additional 3 years, pending agreement by both parties.

G. CONFLICT OF INTEREST. Contractor warrants that to the best of contractor’s knowledge, there exists no actual or potential conflict between contractor and the County, and its Services under this request, and in the event of change in either contractor’s private interests or Services under this request, contractor will inform the County regarding possible conflict of interest which may arise as a result of the change. Contractor also affirms that, to the best of contractor’s knowledge, there exists no actual or potential conflict between a County employee and Contractor.

H. The bidder shall be responsible for all costs incurred in the development and submission of this response. Washtenaw County assumes no contractual obligation as a result of the issuance of this RFP, the preparation or submission of a response by a bidder, the evaluation of an accepted response, or the selection of finalists. All proposals, including attachments, supplementary materials, addenda, etc. shall become the property of Washtenaw County and will not be returned to the bidder.

I. Any responses, materials, correspondence, or documents provided to Washtenaw County under this solicitation are subject to the State of Michigan Freedom of Information Act and may be released to third parties in compliance with that Act.

J. Local Vendor Preference – A policy adopted by the Washtenaw County Board of Commissioners (BOC) that shall govern the procurement of goods, services and food from local vendors located in Washtenaw County and the State of Michigan. The intent of the BOC is to encourage and promote economic growth and regional job development. The policy shall be applied to Washtenaw County operated programs as allowed, except those that are federally funded directly or indirectly. All other Procurement Policies and Procedures remain in full effect. Please see “Local Vendor Certification Application & Affidavit” enclosed in this RFP.

K. Vendor Appeal Process – Unsuccessful bidders may appeal an award of contract, lease or purchase order to the County Administrator. All appeals shall be made in writing to the County Administrator within five (5) business days of the Notice to Award. The County
Administrator shall take necessary actions to review the appeals and respond to the individual submitting an appeal within five (5) business days. This response shall be documented in writing in the bid file.

1.3 VENDOR SPECIFICATIONS

The proposal shall include all of the following information. Failure to include all of the required information may result in disqualification of a Bidder.

A. Review contract provisions and insurance requirements. Note any limitations on any of the articles or providing insurance requirements as outlined in the contract provisions contained in Sample Contract.

   (Attachment A)

B. Review and attach Local Vendor Preference Certification information and signed Affidavit. Please flag Addendum B if applicable.

   (Attachment B)

1.4 AWARD

Award will be made to the lowest responsive, responsible bidder, with the most relevant product, services, experience and qualifications. However, the award may not be based solely on low bid alone. Bidder that receives the award will be required to employ the approved County boilerplate for RFPs.

1.5 SCOPE OF WORK

1.5.1 SECTION 1 – GENERAL INFORMATION

Purpose

Washtenaw County Purchasing is issuing this Solicitation to interested and qualified bidders who can provide products and services for a Public Safety “Next Generation 9-1-1” IP- based emergency call and control system, commonly referred to as CPE (Customer Premise Equipment), and/or Voice Recording equipment, compatible with an Emergency Services IP Network (ESInet), compliant with standards defined by the National Emergency Number (NENA) document 08-003, commonly referred to as the NENA i3 standards including the network infrastructure to support all participating agencies. The solution can be on-premise or hosted. If hosted, the desire is for the primary host site to reside within Washtenaw County, but considerations will be given to host sites outside of Washtenaw County as well.
as cloud based solutions. Additional services will include CPE and/or Voice recording installation, connectivity, training, go-live support, project management and ongoing maintenance. The project will have two distinct components: 1.) “Next Generation 9-1-1” telephone system, including centralized switches and servers, and the end-user equipment at the various dispatch centers, 2.) Voice Recording equipment.

**Background**

Public Safety agencies in Washtenaw County operate emergency communications systems under the auspices of the Washtenaw County 800 MHz Radio Consortium. Additionally, the funding of the systems themselves is controlled by the Washtenaw County 800 MHz Project Oversight Committee (POC) as appointed by the County Board of Commissioners (BOC). The Washtenaw County PSAP/8 subcommittee offers technical advice to the Consortium Board regarding the operation of the County PSAPs.

The Michigan Emergency Telephone Service Enabling Act (PA 32 of 1986, as amended) is the statute that places the responsibility for the technical, operational, managerial, and fiscal aspects of 9-1-1 service on the county BOCs. Within Washtenaw County, representatives of the 8 Public Safety Answering Points (PSAPs) form a cohesive subcommittee under the Washtenaw County 800 MHz Radio Consortium leadership to promote best practices and interoperability. The 8 Washtenaw County PSAPs currently have stand-alone 9-1-1 Customer Premise Equipment (CPE) including West/Intrado Viper, Positron Lifeline 100, Airbus DS Communication Vesta and Xtend Communications.

This project seeks to interconnect 9 PSAPs utilizing an ESINet network that the county will implement as part of another project. The project seeks CPE and voice recording equipment for the following locations: Chelsea PD, Saline PD, Pittsfield Township PD, Milan PD, Eastern Michigan University PD, University of Michigan DPS, Metro Dispatch, Huron Valley Ambulance; and a Backup PSAP located at the Washtenaw County Sheriff’s Office. The locations are currently utilizing CAAMA trunk connections and will be switching to the ESINet (Emergency Services IP Network) once it becomes available.

In addition to that, Washtenaw County participates with Oakland County in The Court and Law Enforcement Information Management System (CLEMIS) - a long standing consortium of public safety agencies within and around Oakland County, including agencies in Macomb, Wayne, Washtenaw and Genesee Counties. The CLEMIS leadership, which includes police and fire chiefs, prosecutors, court representatives, and other public officials, determine and prioritize the projects and services offered by CLEMIS. These products and services include computer-aided dispatch (CAD), law enforcement records management, fire records management, jail records management, fingerprint and mug shot systems, and a suite of
mobile applications, all networked together toward the goals of efficient use of public safety resources and of information sharing. The GIS component of the products and services is handled in-house by Oakland County Information Technology for the County of Oakland, with data provided by the other participating counties. It is hoped that acquisition of a fiber network connecting all the PSAPs in Washtenaw County could also provide connectivity with Oakland County for the provision of the CLEMIS services enumerated above.

**Term of Contract**

The initial award of this Product and Services Contract shall be for a period of three (3) years with the option to extend for an additional three (3) one (1) year periods, pending agreement by both parties. The Contract with Washtenaw County shall be for products, installation, training, project management, go-live services, and ongoing maintenance. Bidders should submit proposals for a three (3) year contract, and renewable up to three (3) years. The Vendor may submit proposed multiple year pricing that may be advantageous to the County. The County reserves the right to determine the contract duration based upon the product, service plan and associated costs that best meets the County’s needs.

**Bid Response**

The RFP specifications are listed below and vendors are expected to submit their RFP responses in the same order as listed:

1. The bidder shall provide an overview or executive summary of the firm. This summary or overview shall include names of person(s) and phone numbers to contact.
2. The bidder shall list experience and projects with state, county, or local governments of similar size. This list shall include, but is not limited to: contract length, types of projects, name of entity, contact name, and phone number of current contact.
3. The bidder shall provide the resume(s) and experience of staff that would be working and assigned with the County. All staff that may have access to Public Safety Answering Points (PSAPs) will be required to satisfactorily pass a criminal background check under the auspices of the Criminal Justice Information System (CJIS).

RFP Proposals shall be evaluated on the criteria listed below specific to products, services, experience and qualifications to provide Next Generation 9-1-1 IP and ESInet compatible CPE equipment and/or Voice recording equipment. Proposals that are not specific to a Next Generation IP based, ESInet compatible, CPE and/or Voice recording equipment may be
given little or no weight. Evaluations may be performed by an evaluation team and a weighted average will be applied. The County reserves the right to interview potential vendors for clarification of products and services proposed as part of its evaluation.

1. Completeness of submitted RFP Response;
2. Executive summary of Firm;
3. Products and Services offered with proposed costs;
4. Experience (reference checks) with Next Generation 9-1-1 IP based, ESInet compatible, CPE and/or Voice Recording equipment for State, County and Local government entities;
5. Type of and degree of successful projects completed for State, County and local units of governments
6. Resume (s) of staff assigned to the County for this contract period.
7. Timeline
8. Costs

Specific questions and points of clarification submitted by the bidders must be sent via email to Craig Swenson (swensonc@pittsfield-mi.gov). Questions are to be submitted by Tuesday April 11, 2017 and answers will be provided no later than Tuesday April 18, 2017. Bidders are responsible for checking the Washtenaw County Purchasing website http://onlinebids.ewashtenaw.org or the MITN website, www.mitn@info frequently for any RFP addendum release which may include answers to questions submitted.

1.5.2 SECTION 2 – MINIMUM QUALIFICATIONS

Bidders must have prior experience in successfully installed and implemented Next Generation 9-1-1 IP based and ESInet compatible CPE and/or Voice recording equipment including training, project management, go-live support and ongoing maintenance. Staff assigned to the project must have demonstrated skills in the technical and operational aspects of the design, installation and implementation of a Next Generation 9-1-1 IP based and ESInet compatible CPE and/or Voice recording equipment.

1.5.3 SECTION 3 – SCOPE OF PRODUCTS AND SERVICES

The bidder shall be responsible for coordinating all site surveys, site preparation, installation, connectivity, training, cut-over and any other implementation services with the county and county designated project managers. It is the desire of the county to cutover the Chelsea PD, Eastern Michigan University PD, Milan PD, Pittsfield Township PD,
Saline PD, University of Michigan DPS, Washtenaw Metro Dispatch PSAPs, Huron Valley Ambulance; and the Backup located at the Washtenaw County Sheriff’s Office in a coordinated fashion as to minimize interruption.

The bidder shall work closely with the county and county designated project managers to identify the sequence and cut-over timing of each PSAP. Several criteria including age of equipment, size and complexity of installation, implementation and training will be taken into consideration, and a project plan will be jointly developed and adhered to. Another factor that will determine the sequence of installation will be based on the type of solution, hosted or on premise, the county selects.

It is the desire of the county to connect all of the county PSAPs to the ESINet network, but it is unlikely that the ESINet connections will be completed prior to the CPE and Voice recorder cutover. Therefore the bidder shall propose a two phased cutover approach which includes connectivity to existing CAAMA trunks and switching the connections to the ESINet, once it becomes available.

1.5.4 SECTION 4 – ADMINISTRATIVE REQUIREMENTS

Letter of Intent to Bid
Qualified entities (contractors) who intend to submit a proposal in response to this request for proposal for a Next Generation 9-1-1 ESInet network and customer premise equipment (CPE) telephone system must submit the Letter of Intent to Bid contained herein (Attachment D). The Letter of Intent to Bid must be received at Washtenaw County Administrative Office (via postal service or electronic mail to Beth Duffy at duffyb@ewashtenaw.org by 3:00 pm (EST) on April 11, 2017.

Required Information Contained in RFP Response
All responses shall clearly state how the contractor will meet or exceed the requirements of each phase of this RFP. The contractor must demonstrate experience in the design, installation and implementation of an IP based customer premise equipment (CPE) telephone system that provides for thorough integration with multi-agency PSAPs, multi-jurisdictional computer aided dispatch (CAD), mapping, radios, voice recorders, and any additional hardware or software not specified. The contractor must also be able to address the issues associated with integrating such technologies as Automatic Call Distribution, Geographical Information Systems, Instant Messaging, Multimedia Messaging Service, Short Message Service, Voice-over-IP, Wi-Fi, and video.
In addition, the following specific information is required:

(a) Description of the firm and project team(s).
(b) Submission of Attachment E – Reference Worksheet. Vendors shall provide at least five (5) references relevant to CPE Telephone System and/or Voice recording Implementation within Emergency Services IP Network (ESInet).
(c) Professional resume(s) of all key personnel assigned to the project.
(d) Proposed project schedule for each PHASE.
(e) Completion of Attachment C; Pricing Worksheet and Maintenance.
(f) Completion of Attachment F; Network Requirements.
(g) Schedule for all installation, implementation and professional positions assigned to the project.
(h) Primary e-mail address to which any correspondence shall be sent regarding this RFP, also included in the letter of intent.
(i) Any other information the contractor deems necessary to assist in determining the best fit for the CPE project.
(j) Insurance requirements which shall at a minimum include:
   (i) All insurance policies obtained for the project shall include each individual participating PSAP (including the PSAP’s governing body), and their duly authorized representatives as additional insured parties. All costs associated with meeting these requirements shall be considered incidental to the contract.
   (ii) The contractor shall, at its own expense, obtain and maintain during the life of the contract liability and property damage insurance which shall protect the contractor, each respective participating PSAP (including the PSAP’s governing body), and its respective officers, agents and employees, and shall also protect any subcontractor performing work under the contract, from claims for damages for personal injury (including accidental death) as well as from claims for property damage which may arise from the performance of work under the contract, whether such work is performed by the contractor, by any subcontractor, or by anyone directly or indirectly employed by the contractor or by any subcontractor, and the amounts of such insurance shall be as follows:
      (2) Liability including contractual liability and property damage insurance in any amount not less than One Million Dollars ($1,000,000) for injuries (including death) to anyone person, and subject to the same limit for each person, in an amount not less than One Million Dollars ($1,000,000) on account of anyone accident.
         (i) Automobile liability and property damage insurance with bodily injury liability in any amount not less than One Million Dollars ($1,000,000)
each person, and One Million Dollars ($1,000,000) each occurrence and property damage liability in any amount not less than One Million Dollars ($1,000,000) each occurrence.

(ii) Workers Compensation insurance in any amount not less than the statutory limits that may be required by the State of Michigan and employer’s liability in any amount not less than Five Hundred Thousand Dollars ($500,000).

(iii) Certificates of Insurance must be submitted prior to the start of the work.

(iv) Certificates of Insurance must be written by companies acceptable to the County and the policies must be approved by the County. The insurance shall not expire prior to the time of completion of the work. All policies shall provide that not less than thirty (30) days’ notice of material change or cancellation shall be given to the additional insureds.

(b) Additional information requirements may be distributed via an addendum(s). In the event that it becomes necessary to provide additional clarifying data or information, or to revise any part of this RFP, revisions, amendments and/or supplements will be emailed to all participants submitting a Letter of Intent to Bid (Attachment D).

General Requirements
The proposals will be opened at 3:00 pm (EST), April 27th, 2017 and must contain one (1) unbound original and one (1) bound copy, each with the pricing page flagged. In addition, each vendor will also deliver seven (7) electronic copies on a USB drive, CD-RW, or DVD in pdf format “Washtenaw County RFP 7185 for Public Safety IP Based Next Gen 911 Phone and Voice Recording Systems”

1. RFP RELEASED: March 20th, 2017 at 10:00 am (EST)
2. Letter of Intent to Bid/Written Questions: April 11th, 2017 by 3 pm (EST)
3. RFP SUBMISSION DEADLINE: No later than 3:00 pm (EST), April 27th, 2017
4. RFP SUBMISSION LOCATION: Mail or Drop-Off Address
   Washtenaw County Administration
   Building Purchasing Division
   220 N. Main St. Basement
   Ann Arbor, MI 48104

Note: Faxed or e-mailed submissions will not be accepted.

5. Schedule of Events (all times are EST – Eastern Standard Time):
<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 20th, 2017 – 10:00 am</td>
<td>RFP Released/Available</td>
</tr>
<tr>
<td>April 4th, 2017 – 10:00 am</td>
<td>Pre-bid Conference – Contractors are encouraged to participate in person, or via conference call, and ask questions.</td>
</tr>
<tr>
<td>April 4th – 5th, 2017</td>
<td>Onsite PSAP visits. Contractors are encouraged to visit the PSAPs in order to get a better understanding of the physical layout of each center.</td>
</tr>
<tr>
<td>April 11th, 2017 – 3:00 pm</td>
<td>Deadline for contractors/vendors written questions and letter of intent to bid to be submitted via email to: <a href="mailto:duffyb@ewashtenaw.org">duffyb@ewashtenaw.org</a> and <a href="mailto:swensonc@pittsfield-mi.gov">swensonc@pittsfield-mi.gov</a></td>
</tr>
<tr>
<td>April 18th, 2017 – 3:00 pm</td>
<td>Contractors/vendors written questions will be answered in writing and distributed via email by 3:00 pm</td>
</tr>
<tr>
<td>April 27th, 2017 – 3:00 pm</td>
<td>RFP Responses DUE and Public Opening</td>
</tr>
<tr>
<td>April 28th – May 19th, 2017</td>
<td>Initial Evaluations and Vendor Finalists Selected (Finalists will be announced no later than 3:00 pm on May 19th, 2017)</td>
</tr>
<tr>
<td>May 22nd – June 22nd, 2017</td>
<td>Evaluations, Demos, onsite visits and Interviews with Finalists</td>
</tr>
<tr>
<td>June 23rd – July 28th, 2017</td>
<td>Negotiations, and Contract Award (approximate timeline only)</td>
</tr>
<tr>
<td>Oct 1st, 2017 – June 30th, 2018</td>
<td>CPE Installation, Training and Go-live Support</td>
</tr>
</tbody>
</table>
CPE RFP Pre-Bid Onsite PSAP Visit Schedule:

<table>
<thead>
<tr>
<th>PSAP/Agency Name</th>
<th>Street</th>
<th>City</th>
<th>Zip Code</th>
<th>Pre-Bid Onsite PSAP Visits Dates/Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washtenaw Metro Dispatch</td>
<td>107 North Fifth</td>
<td>Ann Arbor</td>
<td>48104</td>
<td>April 4, 2017 12:00-13:30</td>
</tr>
<tr>
<td>University of Michigan DPS</td>
<td>1239 Kipke Dr</td>
<td>Ann Arbor</td>
<td>48109</td>
<td>April 4, 2017 14:00-15:00</td>
</tr>
<tr>
<td>Huron Valley Ambulance</td>
<td>1200 State Circle</td>
<td>Ann Arbor</td>
<td>48108</td>
<td>April 4, 2017 15:30-17:00</td>
</tr>
<tr>
<td>Eastern Michigan University PD</td>
<td>1200 Oakwood</td>
<td>Ypsilanti</td>
<td>48197</td>
<td>April 5, 2017 9:00-10:00</td>
</tr>
<tr>
<td>Washtenaw County Sheriff (Backup)</td>
<td>1501 S Huron St</td>
<td>Ann Arbor</td>
<td>48197</td>
<td>April 5, 2017 10:30-11:30</td>
</tr>
<tr>
<td>Millan PD</td>
<td>35 Neckel Ct</td>
<td>Millan</td>
<td>48160</td>
<td>April 5, 2017 12:30-13:30</td>
</tr>
<tr>
<td>Pittsfield PD</td>
<td>6227 West Michigan Ave</td>
<td>Pittsfield</td>
<td>48108</td>
<td>April 5, 2017 14:00-15:00</td>
</tr>
<tr>
<td>Saline PD</td>
<td>100 N Harris</td>
<td>Saline</td>
<td>48176</td>
<td>April 5, 2017 15:30-16:30</td>
</tr>
<tr>
<td>Chelsea PD</td>
<td>311 South Main</td>
<td>Chelsea</td>
<td>48118</td>
<td>April 5, 2017 17:00-18:00</td>
</tr>
</tbody>
</table>

Washtenaw County PSAPS Map:
1.5.5 SECTION 5 - CPE AND VOICE RECORDING REQUIREMENTS

5.1.1 CPE—VoIP
The system must use VoIP switching technology. The system must be capable of supporting online monitoring, system administration, and maintenance positions, either locally or remotely, through a virtual private network (VPN) IP solution.

5.1.2 CPE—Audio Signal Processing
The system must utilize VoIP CODEX techniques to support any CODEX audio signal protocol entering the central CPE equipment from direct VoIP Internet service providers.

5.1.3 CPE—Interface, Control Functions, Standards
The system architecture must consist of a complete Host system with interface modules to external circuits. The control functions must combine into a fully redundant system. The architecture must conform to NENA standards and requirements.

5.1.4 CPE—Component Failures
The complete system architecture must be such that the failure of any one component or module will not result in total system failure, but only the loss of the equipment associated with that module or device. The system requires redundancy and/or distributive architecture to reduce system failure.

5.1.5 CPE—System Monitor
The system must be equipped with a monitoring capability located at the data centers. The system must be capable of providing information in a type of display format that supports monitoring of all voltages, power breakers, and system alarms of the communication equipment. Upon a failure condition, the system monitor must display an alarm message. Major or critical and user-defined alarms must alert PSAP and support personnel from any of the PSAP locations via SMTP, SMS, and/or e-mail. 911 Management must be part of the notification process.

5.1.6 CPE—System Expansion
The system must be capable of meeting today's sizing requirements as described in Appendix A, located at the end of the RFP. Furthermore the area noted as “Equipped” must be capable of expansion in order to meet anticipated future growth. The system configuration must have adequate processors or servers and an expandable infrastructure to support a 30 percent growth capacity as outlined in the exhibit as listed above.

5.1.7 CPE—Environmental
All equipment must remain operational at ambient room temperatures of 35 degrees F to 120 degrees F and relative humidity from 0 percent to 95 percent. The
recommended equipment and operations room temperature is 60 degrees F to 80 degrees F and relative humidity varies between 30 and 60 percent.

5.1.8 CPE—Federal Communications Commission (FCC) Rules Conformity
All central communications equipment must conform to FCC Rules Part 15, Class A (commercial, non-residential radiation and conduction limits) for EMI.

5.2.1 Back Room Equipment
It is unknown if the remote system locations will contain back room equipment. The following bulleted items only pertain to CONTRACTORS that utilize back room equipment at the remote CPE locations.

Maintenance Support
If required by the CONTRACTOR a maintenance position with the system at each PSAP location to facilitate accessing any local back room server, gateway, or device for maintenance support shall be provided.

Maintenance Position—Local-Equipment Rack
If required by the CONTRACTOR, racks and or cabinets supplied must be either 19-inch or 23-inch by 7-foot and support monitors must be 17-inch or larger LCD black monitors, with a keyboard, and mouse must be installed in a manner that would allow COUNTY or CONTRACTOR service personnel view and access from a seated position. Space is a concern and a foldable “rack-mounted” type maintenance terminal in the equipment room is preferred. If the maintenance position must have multiple keyboards, monitor, and mouse access to multiple servers, gateways, or devices, etc., CONTRACTOR must use a keyboard arbitrator-sharing device to minimize the amount of equipment because room space is very limited.

Maintenance Printing—Equipment Room
If required by the CONTRACTOR each equipment room may require a maintenance printer to assist CONTRACTOR’s maintenance personnel when printouts are necessary. These maintenance printers are not required to be as robust as PSAP printers. In addition to the local equipment room printer, the local maintenance position must have a configuration that supports use of common PSAP printers within the ESInet network.

Maintenance Access—Remote
The system must support remote maintenance, such as a protected and firewalled Internet VPN, or other secure connection.
must support remote access into the system to perform tests; view alarms, diagnostics, real-time call-taker, and trunk activity; or reconfigure the system. Remote entry into the system must be limited to those authorized through the system administrator function and be password protected.

**Maintenance Access—System Reconfiguration**

The system must support remote access from on-site and off-site personnel to each of the 9 remote PSAP systems and must support performance of the following minimum tasks:

1. Modify the answering positions parameters
2. Modify the call-taker login ID information and permission
3. Modify the 911 trunk parameters
4. Modify the central office (CO) line parameters
5. Modify the ring down line parameters
6. Assign a module or a port to give the user the ability to:
   - Quickly view a multitude of system settings for each entity (911 trunk, call-taker, etc.)
   - Reconfigure advanced settings to adapt the system to the exact requirements of a particular setup without technical assistance from the manufacturer
   - Customize the system according to the operational preferences of a particular setup
   - Upgrade the system for new or expanded uses
   - Safeguard the system by backing up the system database
   - Troubleshoot the system

**5.2.2 Malware**

Software solutions that can detect all forms of malware must protect the systems’ servers and workstations.

**5.2.3 Malware—Software Updates**

The updating of these software packages must be manageable from one administrative location within the closed IP network.

**5.3.1 Host/Remote—VoIP**

The hosts and remotes must support VoIP technology. The system must support, locally or remotely, on-line monitoring, system administration, and maintenance positions through a VPN IP solution.
5.3.2 Host/Remote - Administrative Interconnection
It is a requirement that the administrative phone system at each PSAP send and receive calls to and from the new IP network. It is the responsibility of the CONTRACTOR to provide a mechanism to convert analog administrative traffic to digital or digital to analog administrative traffic as required.

5.3.3 Host/Remote—Audio Signal Processing
The hosts and remotes must support all audio signals presented via coder-decoder (CODEC).

5.3.4 Host/Remote—Control Functions and Standards
The host/remote system architecture must consist of a complete system with interface modules to external circuits. The ANI/ALI control functions must be fully redundant. The architecture must conform to NENA standards.

5.3.5 Host/Remote—Uptime Requirements
The COUNTY requires 99.999 percent availability for all applications deployed.

5.3.6 Host/Remote—Redundancy
There must be no single points of failure. Each host must automatically switch between its systems and be transparent to the call-taker. Remote locations must have the capability for full functionality off either host location.

5.3.7 Host/Remote—Redundant Devices—Load Share
Each host must be capable of load-sharing between its redundant devices.

5.3.8 Host/Remote—Redundant Devices—Load Support
Each host must have redundant operating systems, software applications, and hardware infrastructure designs that support 100 percent of the originating or terminating traffic in the event of simplex operation. The CONTRACTOR must provide a description and diagrams of their solution. Such description and diagrams must show how redundant devices, servers, etc., are configured and used to protect and support the mission critical applications. It is desirable that both hosts operate simultaneously.

5.3.9 Host/Remote—Component Failure
The CONTRACTOR must provide a written description of the impact of any component failure and the actions required to mitigate the operational impact.

5.3.10 Host/Remote—Security—Call-takers System Log-on—Prompts/Features
The system must provide a secure logon capability and must prompt each call-taker to logon with a user name and password. Upon successful logon by a call-taker, all
personalized features, functions, call routing by call type, and capabilities must be available to the call-taker. A call-taker’s log-on credentials must provide the call-taker with the ability to function at all remote locations without re-establishing profiles.

5.3.11 Host/Remote—Administrative Security—Tracking File
The system must track all logon and log off times and activities. All call-taker and system administrator activities must be preserved using a centralized tracking file. The tracking file must be available so that the COUNTY can audit configuration changes and administrative actions. The tracking file must preserve activity for a minimum of 60 days. The tracking file must include unsuccessful logon attempts.

5.3.12 Host/Remote—Administrative Security—System Password Lifecycle
The system must provide the ability to expire passwords on a configurable time basis. When logging on, appropriate expiration warnings must be presented to all users. Users must be able to change their password and restart the time-based password expiration period.

5.3.13 Host/Remote—Administrative Security—System Password Composition
The system must support highly secure passwords.

5.3.14 Host/Remote—System Expansion
The hosts and remotes described in these specifications must meet current requirements and must be scalable to meet future expansion. This must support growth of the entire system such as adding additional remote and/or host locations. In addition, it is required that the network be capable of supporting connections to additional networks.

5.3.15 Host—Equipment Footprint
The CONTRACTOR must provide rack-mounted servers in lieu of tower models, seven foot cabinets, and rack-mounted 1U monitor/keyboards for all hosts. All required hardware, parts and pieces must be completely contained inside the cabinets at all host locations.

5.3.16 Remote—Equipment Footprint
The remote devices must be compact and flat mountable on customer-provided plywood surfaces, if applicable. The remote equipment must be secured.

5.3.17 Remote—Limited Survivability
In the event network connectivity or host support is lost for any reason, remotes must be independently survivable and provide uninterrupted support of any locally terminated
administrative lines.

**5.3.18 Remote—Alternate Host**
Remotes must be able to automatically switch between primary and alternate hosts should either host require a planned out-of-service maintenance or in the event of a system failure.

**5.3.19 Host—System Monitor**
Each host system must be equipped with a monitoring capability and must be monitored by the CONTRACTOR’s quality assurance center or network operations center, and the COUNTY. Upon a failure condition, the system monitor must display an alarm message. Major or Critical alarms must alert CONTRACTOR support services and network operations centers, and the COUNTY via SMTP, e-mail, cell phone text.

**5.3.20 Remote—Equipment Locations**
The CPE system CONTRACTOR will install remote workstations at the locations provided in the table below.

<table>
<thead>
<tr>
<th>PSAP/Agency Name</th>
<th>Street</th>
<th>City</th>
<th>Zip Code</th>
<th>911 Workstations</th>
<th>PSAP Staff</th>
<th>Trunks</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chelsea PD</td>
<td>311 South Main</td>
<td>Chelsea</td>
<td>48118</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>5,100</td>
</tr>
<tr>
<td>Eastern Michigan Univ PD</td>
<td>1200 Oakwood</td>
<td>Ypsilanti</td>
<td>48197</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>22,000</td>
</tr>
<tr>
<td>Millan PD</td>
<td>35 Neckel Ct</td>
<td>Millan</td>
<td>48160</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>5,900</td>
</tr>
<tr>
<td>Pittsfield PD</td>
<td>6227 West Michigan Ave</td>
<td>Pittsfield</td>
<td>48108</td>
<td>3</td>
<td>9</td>
<td>4</td>
<td>114,000</td>
</tr>
<tr>
<td>Saline PD</td>
<td>100 N Harris</td>
<td>Saline</td>
<td>48176</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>9,000</td>
</tr>
<tr>
<td>University of Michigan DPS</td>
<td>1239 Kipke Dr</td>
<td>Ann Arbor</td>
<td>48109</td>
<td>6</td>
<td>21</td>
<td>2</td>
<td>44,000</td>
</tr>
<tr>
<td>Washtenaw Metro Dispatch</td>
<td>107 North Fifth</td>
<td>Ann Arbor</td>
<td>48104</td>
<td>14</td>
<td>41</td>
<td>26</td>
<td>345,000</td>
</tr>
<tr>
<td>Huron Valley Ambulance</td>
<td>1200 State Circle</td>
<td>Ann Arbor</td>
<td>48108</td>
<td>20</td>
<td>35</td>
<td>11</td>
<td>N/A</td>
</tr>
<tr>
<td>Washtenaw County Sheriff (Backup)</td>
<td>1501 S Huron St</td>
<td>Ann Arbor</td>
<td>48197</td>
<td>6</td>
<td>N/A</td>
<td>4</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**5.3.23 Workstation—Hardware**
The Intelligent Workstations (IWS) must consist of a PC with a minimum of two 19-inch black LCD thin film transistor (TFT) monitors, with compatible Intel dual core processors 2.5 ghz or better with all necessary audio and data interface equipment. Power supplies, hard drives, expansion slots, etc., must have sufficient size to permit 50 percent system expansion, the most current stable Microsoft operating system (OS) upgrade, and support two monitors. Due to limited space at the console, the case for the PC should be slim line to maximize cabinet space for additional PCs, if possible.
Note: The second monitor is required for the integrated map display contained within this Scope of Work. However, the workstation PC should be minimally equipped to support an integrated map solution.

5.3.24 Workstation—Hardware Requirements—Cable Extensions
The system must include one ten-foot video, keyboard, keypad, mouse, and speaker extension cable for each PSAP workstation.

5.3.25 Workstation—Software—Operating System Requirements
The 911 application software must be compatible with the most current stable Microsoft Professional or higher.

5.3.26 Workstation—Headset/Handset—Radio Interface
The system must support use of the same microphone and speaker or headset to control the radio and telephone functions. The radio systems interface function in the radio console performs the integration of the headset between the telephone and radio systems.

5.3.27 Workstation—Headset/Handset—Existing Headsets
The PSAPs use carbon impedance matching handsets and headsets, but must maintain electret handsets and headsets in case of a radio interface failure. It is desirable that the system support both electret and carbon impedance matching handset/headsets via an option setting, so that the PSAPs are not required to maintain different impedance matching handset/headsets.

5.3.28 Workstation—Keyboard Sharing
Independent arbitration of the keyboard and mouse between the telephone, Telecommunications Device for the Deaf (TDD), and CAD is a requirement. The system must support switching between applications with a single keystroke or mouse click and take effect in less than one second. Input devices should be stand-alone and/or have the capability for a single keyboard and mouse to control all operations. The arbitrator should have a minimum of five ports supporting a mixture of PS2 and USB PC interfaces plus one common port. The PC must not power the arbitrator; it must have independent power.

5.3.29 Workstation—Keyboard
A standard, IBM PC 101 keyboard must be capable of processing all telephone calls, including voice, TDD/Teletypewriter (TTY) calls, and CAD functions. If the design requires a computer telephone interface (CTI) to a Private Branch Exchange (PBX), and if the CTI interface fails, all call processing must be available via an alternate mode.
5.3.30 Workstation—Keypad
The keyboard keypad must be able to dial telephone numbers or input numbers as required. The keypad must also provide access to the speed dial list and offer a last number redial function. The list must support the last numbers dialed at the workstation.

5.3.31 Workstation—Keypad-External Keypad Type
CONTRACTOR must provide an external keypad or intelligent mouse to ease repetitive keystroke operations. This option must include ten-foot extension cabling.

5.3.32 Workstation—Logging Recorder Interface
Each workstation must provide an adjustable audio output to the logging recorder interface, so that audio level can easily interface to a number of logging recorder systems. This interface must “mute” when the workstation is not active, so background conversations are not offered to the logging recorder. It is the required responsibility of the CONTRACTOR to terminate the logging recorder interface to a -block, which should be located in the equipment room near the existing logging recorder-interface blocks. Each position must have the ability to turn off the recording device on non-911 lines for the duration of the call. This feature must be under management control only.

5.3.33 Workstation—Logging Recorder—Contact Activated
The workstation and connectivity to the logging recorder connections must support a single pole, single throw, normally open, dry contact closure. The contact should close only when the workstation is in a voice conversation mode.

5.4.1 ALI System
The ANI/ALI controller systems must interface to the on-site PSAP ALI links provided by the existing tariff service or by alternative provider. All coordination efforts supporting the installation of the proposed solution are the responsibility of the CONTRACTOR and not the COUNTY. The CONTRACTOR must coordinate the ALI and CAD link installations with the network provider. The COUNTY will order new ALI links, if required. If it is necessary, the COUNTY is willing to sign a Letter of Authorization (LOA) so that the CONTRACTOR can facilitate these responsibilities.

5.4.2 ALI System—Display
The workstations must parse the type of call information from ALI, such as wireline, wireless, and VoIP, and uniquely display the information and individually support all MIS call statistic requirements.

5.4.3 ALI System—Interconnections
At a minimum, the redundant ALI outputs from the system must be high speed IP ALI
connections and support current wireless NENA ALI formats.

5.4.4 ALI System—I/P Support Requirements
The system must support IP ALI when the ALI service providers can support the newly standardized NENA ALI format. The CONTRACTOR must be responsible to re-engineer, re-configure, and maintain any future IP ALI connectivity as part of this procurement process as long as the COUNTY maintains a software support contract and the ALI provider supports NENA’s approved IP ALI recommended standards.

5.4.5 ALI—Print Capabilities
The answering position must have an interface port for automatic electronic archiving and/or printing the ALI and the TDD/TTY conversation upon call release.

5.4.6 CAD Interface—Port Type
The system must have one redundant CAD port for use in a future CAD procurement and two additional interfaces at each PSAP. One paired set (two) of interface ports will support the on-site CAD systems; an additional third port will interface to the logging recorder (if the recorder is capable of using an ALI feed.)

5.4.7 CAD Interface—Data Requirement
The CAD outputs from the system must include ALI, wireless, and VoIP information. At a minimum, workstation position, name, address, telephone number of the calling party, the time of the call, call receive time, call duration, call hold and release time, and wireline, wireless, and VoIP data must transfer to the respective CAD fields from the telephone system.

5.4.8 CAD Interface—Wireless Mapping Support
The CAD port should support the third-party mapping solution by outputting the X and Y of wireless and VoIP calls, including, but not limited to, the Confidence Factor (COF) and Confidence Percentage (COP) prior to answering the call.

5.4.9 Wireless and VoIP ALI Formats
The system must provide a method for formatting the ALI for calls with 20-digit ANI (callpath associated signaling-CAS) and/or ten-digit (non-call-path associated signaling NCAS) so the Calling Party Number (CPN) appears in the same location as it does for wireline calls. This formatting or "normalizing" must provide the CPN to the ANI callback list for CAS, NCAS, and VoIP calls received.

5.5.1 Master Clock System
The COUNTY requires that the system and all workstations be time synchronized to a master time clock source. A separate master clock must be included in the proposed
solution. Since a separate master clock is required, the CONTRACTOR must provide master clock/global positioning system (GPS) master clock time equipment as part of the ANI/ALI controller solution. The master timing source (MTS) will interconnect and synchronize all CPE equipment in the communications centers to a National Bureau of Standards (NBS)-derived time signal. Sharing of the existing antenna system, if supported by the manufacturer, is encouraged. In addition, the CONTRACTOR must ensure that:

1. The MTS system shall provide a best source for all master clock CPE workstations, servers, and components.
2. The MTS must consist of a fully redundant system.
3. The master clock shall comply with the NENA 04-002 PSAP master clock standard.
4. The master clock must be capable to synchronize all workstations and servers.
5. The master clock must be able to interface with COUNTY Computer Aided Dispatch (CAD) system

5.6.1 Trunk Interface—Analog CO Type
The system must support two-wire CO-type telephone line interface that could be loop or ground start. All telephone line interfaces must provide Caller ID with name functionality. The local exchange carrier (LEC) and/or the on-site PBX system will provide the actual telephone service.

5.6.2 Trunk Interface—Analog CO Type—Transmission Levels
The system must support analog two-wire CO-type line interface transmission level adjustments up to a 5.0db gain. When interfacing to an analog PBX interface this equalizes transmission levels to the workstation.

5.6.3 Trunk Interface—CAMA Type
The system must comply with current 7-, 8-, 10-, and 20-digit CAMA and all current NENA ALI protocols. This analog interface must support MF wink, CAMA-type central office trunk interfaces.
5.6.4 Trunk Interface—(DS1) Digital Interfaces
The system must support DS1 digital CAMA, loop start reverse battery supervision, ISDN PRI National 2 and Q-SIG Protocols.

5.6.5 Trunk Interface—Redundant D Channels
The system must support ISDN PRI N2 with one “D” channel per DS1 or two redundant “D” channels when two or more ISDN PRI N2 circuits provide connectivity to the public switch telephone network (PSTN).

5.6.6 Trunk Interface—NENA Signaling Standard
It is required that the system can be equipped to support 20-digit standard signaling if the COUNTY elects to add this feature in the future.

5.6.7 Trunk Interface—Forced Release
If a trunk is off hook for more than a PSAP-defined amount of time, the system should alert maintenance personnel that a potential error has occurred. Authorized PSAP personnel or maintenance personnel should be able to force a trunk to release a call via an access code or maintenance command.

5.7.1 PSAP-to-PSAP Transmission Requirements
The PSAP Remote / ANI/ALI Controller Host connectivity must interface in a digital session initiation protocol (SIP) manner and support high-quality voice transmission without any detectable degradation of audio quality. The PSAP Remote / ANI/ALI Controller Host connectivity must support TDD/TTY transfers.

5.7.2 PSAP-to-PSAP Data Requirements
It is mandatory that the network connectivity between the PSAPs’ ANI/ALI controllers support the communication of Caller ID, ANI, and the transfer of ALI between the networked CPE sites.

5.7.3 PSAP Controller to Administrative Telephone System Interface
The PSAP ANI/ALI controller to administrative telephone system connectivity must interface in a DS1 digital manner, if supported, and support high-quality voice transmission without any detectable degradation of audio quality.

5.7.4 PSAP Controller to Administrative Telephone System Data Requirements
The PSAP ANI/ALI controller to administrative telephone system connectivity must support the transferring of Caller ID and ANI.
5.7.5 PSAP Interface Testing
The CONTRACTOR must support interface testing with each PSAP’s CAD, logging recorder, mapping, and administrative telephone system providers where appropriate. Integration methods employed by the CONTRACTOR must meet the Counties’ approval and not affect the warranties, agreements, or proprietary rights of the existing systems’ manufacturers.

5.8.1 Automatic Call Distribution (ACD) Ring Feature
The PSAP/Remote and ANI/ALI Controller/Host system must minimally be capable of providing a feature that allows the call-taker to determine the oldest 911 and/or CO line-type (plain old telephone system—POTS) calls and answer in a minimum amount of keystrokes or mouse clicks. This is a “ring all” application. The call-taker should:

- See ring time
- Deliver the longest ring/highest priority
- Be able to configure ring all in some PSAPs

The system should automatically queue 911 or non-911 trunk priority for the longest ring. For example, a call-taker will answer every 911 call in order of wait duration before answering any subsequent calls regardless of wait duration between calls.

5.8.2 ACD Call Routing
The county may decide to use ACD call routing schemes that support call flows that offer calls based on personnel logins. For example, personnel are assigned several logon profiles, which are currently used to allow the same PSAP employee to logon as a “Call-Taker” profile versus “Fire Dispatch” profile from any workstation. This feature allows the PSAP administration to staff the individual call flow requirements with high flexibility. It is a minimum requirement to allow PSAP personnel to join different call flow queues or groups based on logon or similar easy-to-support methods. Any method proposed needs to support the MIS individual agent requirements as outlined in this document. If multiple logon profiles are required, then the MIS reports can accrue by individual profiles into a consolidated report to accurately measure and report personnel performance.

5.8.3 ACD Queuing Feature
The system must support multiple queuing in a manner similar to the present system. The current queuing feature continues to present the call to the original ACD group if the PSAP user-defined timer expires. After the first group timer expires, the system advances the presentation of the call to pre-defined alternate group(s) while continuing to maintain the aging of the call and offer to the first queue.
5.8.4 ACD Bypass—Selective Answer
The Host must present calls on trunk buttons or icons with concise ALI and call age information, which would allow call-takers to override any ACD feature and selectively answer calls based on key information, such as location via ALI or time in queue in a non-ACD mode. This requirement allows PSAP personnel to selectively answer calls presented via the ACD queue when emergencies may require that the ACD queue solution be by-passed.

5.8.5 ACD Message Board
Group and individual ACD real-time call statistics must be viewable from a wall-mounted solution if available and would be visible from the PSAP dispatch and supervisor positions at locations to be determined.

5.9.1 Alternate Routing
The system must have the ability to alternately route E911 or administrative calls and maintain ANI or Caller ID to a designated alternate, agent group, or alternate networked PSAP when
1. All agents are busy at the targeted group of workstations
2. No call-takers are logged in
3. On a pre-programmed, no answer, timeout basis.

Alternate routing of E911 and administrative calls to non-networked PSAPs or public safety agencies is required. However, maintaining Caller ID or ANI is not required, but is desirable, if the call routes over the PSTN.

5.9.2 Abandoned Call Information
The system must be capable of collecting the ANI digits and processing the ALI lookup regardless of the condition of the call (e.g., online or hang-up.) The system must collect the digits immediately after any seizure event on the 911 trunk and then process the ALI lookup. The ANI/ALI of the abandoned caller must be available for viewing by the call-taker.

5.9.3 Active Call Priority Queue Management
The system must have the ability to automatically prioritize active calls over abandoned calls in the 911 ACD queue, when enabled. It must also be possible to process abandoned calls by clicking on a dedicated “Abandoned Calls” button on the answering position to avoid keeping them in the queue for too long. The CONTRACTOR must describe in detail the active call priority queue management and how this process works with wireless calls.

5.9.4 Call Information
The workstation must display the ANI/ALI or Caller ID information of any active 911 or
administrative call. The system must also provide additional information on the call, such as the ANI, the emergency services number (ESN), the circuit ID or name, the status of the 911 caller (online or hang-up), and call statistics (e.g., number of emergency calls waiting in the ACD queue and on hold.)

5.9.5 Call/Line Indicators
The answering position must indicate incoming emergency and non-emergency calls by both audible and visual means. All 911 trunks must have a different audible and visual signal from other call types. The call type audio must use speakers built into the proposed monitors. The answering position must also have the ability to visually display the status (idle, busy, ringing, on hold, and out of service) of each emergency and non-emergency line.

5.9.6 Call Back
The system must have the ability via a single key or icon to ring back (call) a wireline, wireless, TTD/TTY, or VoIP 911 caller by using the ANI or Caller ID received or embedded in the ALI response. Call-takers use the ANI or embedded ANI to call back a 911 caller by dialing the caller’s telephone number received during the E911 call setup. This feature needs to support call backs based on different NXX codes within the home area code because long distance calls require a prefix of “1.”

5.9.7 Call Back—Automatic Prefix
The ANI/ALI controller system must support an automatic method to prefix the ANI call back format to meet the requirements for toll calls and access PBX/Centrex lines when necessary.

5.9.8 Call Back—Group Configuration
The call back group must be configurable exclusively for call backs and not used for general system speed-dial or outgoing call applications.

5.9.9 Call Feature—Answer Control
The call-taking application must offer a feature button that allows a call-taker to selectively answer 911 calls when the call-taker is in a training environment.

5.9.10 Call Feature—Disconnect
The call-taking application must support release of an existing E911 call at any time, regardless of whether the calling party has hung up.

5.9.11 Call Feature—Hold
The answering position must allow the call-taker to place 911 or administrative calls on hold with a single keystroke or mouse click. The duration of a call on hold and the user that placed the call on hold must be available to the individual agent or system agents.
The CONTRACTOR must describe the maximum number of calls that can be placed on hold per answering position. This number should be configurable by the PSAP. After placing a call on hold, the workstation should support the origination or termination of a new call.

5.9.12 Call Feature—Hold Denied by User Profile
Individual users’ profiles should only allow authorized PSAP personnel to place an emergency caller on hold.

5.9.13 Call Feature—Hold—PSAP-defined Timeout
Timeout of calls based on user-defined parameters should present the call to the agent that originally placed the call on hold. After a different no-answer time-out, the call will be presented to the group, while maintaining the age of the call and informing the answering agent that the call was previously on hold.

5.9.14 Call Feature—Hold—Retrieval
To assist in retrieving the proper call, the call-taking application must present to all call takers within the call group a list of calls on hold, showing the ANI, the ESN, the trunk number, the agent who put the call on hold, and the time and date that each call was placed on hold. The system must support retrieval of 911 calls placed on hold at another call-taker’s position.

5.9.15 Call Feature—Hold—Storage
The ANI/ALI controller system must store the ANI/ALI information while the call is on hold, hence avoiding repetition of the ALI request.

5.9.16 Call Feature—Monitor—Workstation Access
Any authorized call-taker or supervisor log-on profile must have the ability to listen to another call-taker’s telephone conversation from any workstation. Monitoring must be performed from system IP phones in addition to supervisor workstations. Any upgrade or replacement solution must retain this feature advantage.

5.9.17 Call Feature—Join—Workstation Access
The system must allow any authorized call-taker or supervisor to enter an in-progress call-taker conversation from a system workstation from an idle state. The call-taker, supervisor, and caller are then part of a multi-way conference. The system must allow any authorized call-taker or supervisor workstation or VoIP station to enter into an existing call by clicking on the appropriate icon, activating a soft button, or entering a feature code.

5.9.18 Call Feature—Barge In—Workstation Access
The system must allow any authorized call-taker to barge into an existing call by clicking
on the appropriate circuit indicator on the workstation screen. Upon entering any 911 or administrative call for which ANI/ALI or Caller ID information is available, such information must be immediately displayed on the call-taker’s display. The system must allow any authorized call-taker or supervisor workstation or VoIP station to barge into an existing call by clicking on the appropriate icon, activating a soft button, or entering a feature code. The system must allow any call-taker to block the caller from hearing and talking with the remaining parties in the conference. The system must allow any call-taker to block any party from hearing any conversation from the remaining parties in the conference. The call-taker must hear the caller’s conversation at all times.

5.9.19 Conference Calling
The system must provide the call-taker with the ability to remain on a call and add a new party (e.g., AT&T Language Line Services) to the conversation without regard to the type of line or trunk. Conferencing must not degrade the quality of the audio. Any party must be able to drop out of the conference, leaving the others talking as long as at least one of the other parties possesses central office supervision on his/her connection. This feature must support up to four parties in any combination of inside or outside parties.

5.9.20 Conference Call Setup
The system must support conference call activation by using a single keystroke without putting the caller on hold in a non-attended fashion. The caller may or may not remain online at all times. The system must support placing a minimum of four parties in a conference simultaneously.

5.9.21 Conference
An icon or window must contain an indication for each party involved in the conference besides the call-taker. Each status icon must provide the following indications: line number, trunk number, privacy mode, mute mode, and TDD/TTY.

5.10.1 Instant Recall Recording (IRR)
The system must be capable of supporting IRR functionality in the PC console.

5.10.2 IRR—Station Call Recording Storage
IRR must be accessible by an easy-to-use Windows-type interface, must provide a minimum of eight hours of recording time, and must be accessible from any authorized workstation in the system with rights associated via logon.

5.10.3 IRR—Erasure of Old Calls
An option must be to erase all old calls on either a timed-basis or when the disk drive in the PC console reaches a certain percentage of full.
5.10.4 IRR—Radio Channel Recording
The ability to record the selected and unselected (two) radio channels in addition to 911 workstation voice traffic simultaneously is required.

5.10.5 IRR—Call Type/Text Information
All recordings must indicate the type of call (911 or administrative) and allow the call-taker to enter textual information about the call, if desired. For 911 calls, the ANI of the caller must be automatically stored with the call recording.

5.10.6 IRR—Separate Recording and Playback
In addition to data captured on logging recorders, the system must provide separate functionality for recording and playing back all calls, voice, and TDD/TTY, for the previous shift of operation. Playback functions must occur within one second of a minimal number of keystrokes, or mouse clicks.

5.10.7 IRR—Recording Storage
The voice recording must be physically stored on the local hard drive of the call-taker workstation in an individual file for each call.

5.10.8 IRR—Recorder VCR Controls
The IRR must provide VCR-like controls. The recorder must support marking and moving to any portion of the call.

5.10.9 IRR—Speaker Interface—Recall Recorder
The workstation must provide two jack boxes and an output port for an interface to an external speaker at the position. This must allow the call-taker to playback the recording to the speaker port or headset/handset ports.

5.10.10 IRR—Recall Recorder Minimum Features
At a minimum, the IRR must provide the following features:
1. Play
2. Pause
3. Stop
4. Play forward/Fast forward
5. Rewind
6. Repeat
7. Forward file to another position
8. Display ANI
9. Display Calling Line ID (if available)
10. Copy or “save”
5.11.1 Erroneous ANI Spills
Upon receipt of an erroneous ANI spill from the tandem, the PSAP/Remote and ANI/ALI Controller/Host system must forward all of the ANI digits received to the call-taker.

5.11.2 System-wide Speed Calling
The answering position must allow the call-taker to automatically dial a pre-programmed system-wide speed dial number with the push of a single button.

5.11.3 Individual Speed Calling
The answering position must allow the call-taker to automatically dial a pre-programmed individual speed dial number with the push of a single button.

5.11.4 Speed Dialing—Quantity
The system must provide for a minimum of 2,500 system-wide speed calling numbers.

5.11.5 Speed Dialing—Primary and Secondary
Speed dialing must be capable of performing primary and secondary dialing for calling, transfers, conferences, and other functions, such as long distance access, card numbers, and PIN access. Primary is defined as system-wide speed dial. Secondary is defined as per remote location. The speed dial should be able to incorporate hook flash and pause features in the dial string.

5.11.6 Speed Dial—Libraries
Speed dial libraries must be stored in a database that resides on network storage at the data center or supports a method such that any updates communicate to all workstations and do not require individual updates.

5.11.7 Speed Dial—Library Search
Users must have the ability to search the speed dial library for a given entry by typing the first few letters of the entry.

5.11.8 Speed Dial—Icons
Speed dial locations must display as a button or icon. Each button or icon must provide access to a single entry, a group of entries, or a group of groups. The system administrator must have the ability to assign the descriptive label that appears on the buttons.

5.11.9 Speed Dialing—Alphanumeric
Speed dialing must support the ability to dial alphanumerically, for example, 1-800-CALL-ATT.
5.11.10 Speed Dialing—Mouse/Keyboard
Speed dial access must be available by either a simple mouse click, keyboard entry, touch screen or a combination.

5.11.11 Speed Dial—Workstation—Preprogrammed List
The call-taker speed dial must allow the call-taker to quickly access frequently called telephone numbers from a pre-programmed list. The list must provide access to a minimum of 2,500 telephone numbers arranged by logical categories. Descriptive tabs, such as Hospital, Administrative, and General, must properly identify each list. The speed dial must allow the call-taker to click on the list tab in order to select the corresponding speed dial list and speed dial number.

5.11.12 Speed Dial—Workstation—List Button
Each speed dial entry in the speed dial list must be assignable to a button on the call-taker’s screen. Each entry must also be capable of direct dialing on the currently selected circuit, a particular circuit, or group of circuits.

5.12.1 Security—Administrator System Log-on Password Lifecycle
The system must provide the ability to expire passwords on a configurable time basis. The system, when logging on, must support appropriate warnings and periods to allow valid users the ability to change their passwords and restart the time-based expiration period, provided the PSAP elects to activate this feature.

5.12.2 Security - Call Takers Administration System Log-on Password
The system must support strong passwords.

5.12.3 Security—Unauthorized Access
The System must support security features to satisfy the Counties’ and PSAPs’ network security requirements (using, for example, routers or firewalls). Failed logon attempts must be captured along with the date and time.

5.13.1 TDD/TTY—Detection
The system must be capable of detecting and alerting PSAP personnel that an emergency call originates from TDD/TTY equipment. The system must allow detection of emergency calls originating from ASCII-type TDD/TTY equipment, as well as originate both Baudot protocol and ASCII protocol calls from their answering positions.

5.13.2 TDD/TTY—Communication—Position Keyboard
The system must allow call-takers to communicate with TDD/TTY callers directly from their 911 answering position keyboards, without requiring the use of any external device. The system must allow call-takers to manually connect to emergency calls
originating from ASCII-type TDD/TTY equipment, as well as originate both Baudot protocol and ASCII protocol calls from their answering positions.

5.13.3 TDD/TTY—Preprogramming
The answering position must allow users to store and access (send) a minimum of 20 pre-programmed TDD/TTY messages, as well as to print previous TDD/TTY conversations. Separate event type tabs, such as Police, Fire, EMS and General, must group the pre-programmed messages for quick reference.

5.13.4 TDD/TTY—Conferencing
The system must support a conference between a TDD/TTY caller and a minimum of three other parties in either 911 call-taking mode or administrative call-taking mode.

5.13.5 TDD/TTY—Interface
The TDD/TTY feature must display the caller and the call-taker's conversation separately as it takes place (real-time.) It must also contain all the user pre-programmable messages grouped into related categories such as Police, Fire, EMS, and General.

5.13.6 TDD/TTY—Call Transfer
The TDD/TTY function must allow a call-taker to transfer a TDD/TTY call to another call-taker position. For example, if a call-taker answers a call, the call may need to be transferred to a fire dispatcher for appropriate handling.

5.13.7 TDD/TTY—Americans with Disabilities Act (ADA) Requirements
The TDD/TTY function must allow the call-taker to alter its operation to comply with ADA requirements for Hearing Carry Over (HCO) and Voice Carry Over (VCO) calls. Controls to allow the selection of the appropriate mode must be available in the TDD/TTY window or display at all times.

5.13.8 TDD/TTY—Message Length
The length of the message and number of characters received or transmitted must be unlimited.

5.13.9 TDD/TTY—Compliance
The TDD/TTY interface proposed must comply with all existing and known future FCC and/or legal requirements.

5.13.10 TDD/TTY—Interface with CAD
The TDD/TTY interface proposed must provide a capability for TDD/TTY text conversation with the caller to be shared with CAD, utilizing a standard interface protocol.
5.14.1 Transfer—Intelligent
The system must be pre-programmable so that a PSAP may develop a single Standard Operating Procedure (SOP) for transferring calls regardless of the type of incoming port supporting the call or the type of telephone facilities. For example, VoIP calls, POTS lines with Centrex transfer features, and ring down lines. The system must have the ability to support all of the various different digit strings and maintain the original ANI when feasible. This feature should support a minimum of four different incoming call types.

5.14.2 Transfer—Selective Router
The system must provide the capability for a call-taker to transfer an established E911 call, via the selective router, with a minimum of mouse clicks, touch screen, or via one button, to another PSAP or some other destination.

5.14.3 Transfer—PSAP-to-PSAP
The system must provide the capability of transferring a 911 call received via a digital, analog, or IP interface that provides ANI (or Caller ID) to an alternate PSAP that is networked via the proposed PSAP-to-PSAP network solution. The transferred call must transmit the original ANI or Caller ID with ALI to the alternate networked PSAP. The tandem network will not perform the PSAP-to-PSAP transfer; the transfer must use the new proposed network interface.

5.14.4 Transfer—Unsupervised
The system must provide unsupervised transfers without using a tandem feature. After the loss of current, lack of ground, or after detecting the outbound call on-hook status, the call must release. This specification must support any inbound or outbound lines.

5.15.1 Wireless SMS Text Messaging and Video Presentation
The workstation must be capable of receiving and transmitting wireless SMS Text messages as well as accepting wireless video images. If the system is not presently capable of doing so, the workstations must be capable of supporting this feature without hardware replacement of any component in the future.

5.15.2 Wireless—Queue Management
The system must keep only one call in the 911 ACD queue for any given CPN. A new call with the identical CPN must replace the existing one in the queue and keep its priority.

5.15.3 Wireless and VoIP Call Handling
The system must present wireless and VoIP calls and must include all standard call handling features. Handling of wireless and VoIP calls must be transparent to the call
taker in that all telephony features and functions at the call-taker position are the same as that of a wireline call. Single step ring back and automatic ALI re-bids are mandatory. The call-taker must not have to perform a manual ANI ring back or manual ALI queries for wireless calls.

5.15.4 Wireless—Auto ALI Rebid
The system must automatically update latitude/longitude (X/Y) coordinates at regular PSAP-determined intervals to the CAD port supporting the third-party mapping solution. This feature must be configurable as to the number and frequency of intervals on a per wireless provider basis. The system must be capable of automatically re-bidding ALI for wireless calls on a per carrier basis. The COUNTY intends to activate automatic wireless re-bidding. However, certain carriers are experiencing voice-blanking problem when wireless handsets are resending the GPS information. This feature selection requirement allows each PSAP to re-bid automatically wireless carriers not experiencing the problem and manually re-bid carriers with problems on an as needed basis. This capability should be able to be set per PSAP.

5.16.1 Workstation—ALI Display—Advance
The system must provide the ability to display ALI information to the call-taker before the call is answered.

5.16.2 Workstation—ALI Calls in Queue View
The system must allow supervisors and/or call-takers to view, in real-time, concise ALI information of all 911 calls in queue at the PSAP. The system must be capable of providing queue information at each workstation similar to a reader board functionality where the color of each queue description line indicates the current threshold (number of calls waiting) reached by that queue. Selective Answer provides this functionality.

5.16.3 Workstation—ALI Display—Simplified Call Wrap-up
The system must keep ALI information on the workstation screen after completion of the call, giving call-takers the opportunity to reference the information even after the caller has hung up.

5.16.4 Workstation—ALI Parsing
The system must appropriately and consistently display ALI data when interfacing with different ALI providers that send their information in various formats (e.g., wireline, wireless, and VoIP.) These unique call identifiers must be searchable in the MIS reports.

5.16.5 Workstation—Audio Volume Control
It is a desire that the system automatically adjusts volume, in addition call volume control must be user adjustable and control the incoming call volume at the answering
position's headset/handset. Minimum volume set for ringing must not turn off or lower to zero. Separate volume controls are required for the radio interface ports so PSAP personnel can adjust workstations so that radio and telephone connections are similar in audio levels. Some radio systems’ telephone interfaces do not support independent volume adjustments and CPE audio adjustments may be necessary.

5.16.6 Workstation—Auto-Greeting
This feature must allow the call-taker to record a personal greeting message in his/her own voice, which will be played automatically to the caller immediately after the call is answered by the call-taker. This requirement will allow the call-taker to be in a “listen” mode, rather than a “talk” mode. Multiple greetings must be available to the user based on the line type, such as 911, ten-digit emergency or administrative calls.

5.16.7 Workstation—Other Applications
The system must provide an open application-programming interface (API) to support other software applications that would reside on the same PC console to receive information from the 911 system. This interface must provide, at a minimum, call status and ANI/ALI information to client programs.

5.16.8 Workstation—Other Applications—Alert
In the event that the call-taker is using another application, the answering position must alert the call-taker when a 911 call arrives. The alert shall be an audible and a visible alert. In addition, it must be possible for the call-taker to switch to the 911 application with the click of one button.

5.16.9 Workstation—Previous Calls
At a minimum, the system must allow the authorized call-taker to view the last 100 calls, per logon profile, with ANI/ALI information released at an answering position or a particular answering position. It must be possible to initiate a callback, if necessary, or just view the details of previous calls. To prevent loss of data, the system must save previous call information to disk.

5.16.10 Workstation—Relay Control
The answering position must be capable of supporting access to individual and common control relay modules (dry contact closures.) The common control relays are for purposes such as opening PSAP doors. The relay control must provide for a minimum of four relay contacts.

5.16.11 Workstation—Right Click Operation
The system must allow the call-taker to use the right click on the mouse to access the answering position features. For example, by clicking a circuit button with the right mouse button, the call-taker can choose to release it or put it on hold.
5.16.12 Workstation—System Sounds and Icons
The system must support administrator modifications to the system sounds and button icons with proper administrator password protection.

5.16.13 Workstation—Shortcuts
The system must support administrator assignment of single or multiple features to function keys on the answering position to activate the following functions:
1. Priority Answer
2. Release
3. Transfer to any speed dial entry
4. Agent Ready/Agent Not Available
5. Hold/Hold Release
6. IRR Play
7. IRR Previous Message
8. IRR Pause
Every workstation feature should be duplicable via an ALT style of keyboard similar to MS Windows ALT keyboard shortcuts so that any feature can have a shortcut on the keyboard or external keypad.

5.16.14 Workstation—Software—Custom Screen Layouts
The system must support customizable screen layouts and colors for individual PSAP personnel preference. In addition, the system must support saving and retrieving individual screen layout profiles per unique call-taker profile login code.

5.16.15 Workstation—Screen Layout Lock
The screen layout must automatically lock when the call-taker logs in to the answering position, if a PSAP elects to enable this feature. When enabled, this feature must prevent the call-taker from modifying the layout.

5.16.16 Workstation—Screen Layout Restore
The system must allow the supervisor to restore the original screen layout.

5.16.17 Workstation—Intercom
The system must have an internal intercom. Users and supervisors must select whether the intercom audio routes to their headset or handset. Use of the intercom feature must occur with a minimal number of keystrokes or mouse clicks.

5.16.18 Workstation—Instant Messaging (IM)
IM must be available from each PSAP workstation and be configurable or disabled according to individual PSAP requirements. The system must support IM between any networked PSAP. The system must identify and store all IM for up to one year. The
system must allow authorized PSAP personnel access to all IMs from a common location within each PSAP for up to one year.

5.16.19 Workstation—Call Tagging
It is desirable to allow a call-taker to tag a 911 call and then be able to run an MIS report on tagged calls. CONTRACTORS must describe how this feature would work.

5.17.1 Mapping - Map Display—Servers
Depending on the solution proposed, hosted or on premise, the mapping servers shall reside in the data centers to ensure the same security and reliability of CPE servers, but the CONTRACTORS shall describe how their solution will work.

5.17.2 Mapping - Map Display—Requirements
The mapping application must be able to plot and display latitude/longitude coordinates provided by all wireline, wireless and VoIP service providers. The mapping application must display a map that the call-taker can navigate based on an address and/or latitude/longitude coordinates provided from the PSAP’s ALI system. In addition, the mapping application must be able to:

1. Locate an address or street
2. Display geographic (latitude/longitude) coordinates
3. Measure distance
4. Identify map features
5. Provide basic map navigation (pan and zoom)
6. Plot wireline, wireless, and VoIP events
7. Provide for different symbols for different classes of service
8. Zoom to current event
9. Route to address or event
10. Age wireless call plotting with PSAP selected timeout
11. Identify older wireless icons when PSAP re-bids the same wireless caller
12. Plot Phase I sectors utilizing standard ALI data fields
13. Use current geographic information system (GIS) data formats, notably ESRI Geodatabases, in addition to shape files
14. Use current imagery available in several formats, notably MrSID2 raster image catalogs, geo-referenced tiff files, or ArcGIS image service (ArcGIS Server)
15. Accept NENA-compliant input

The mapping application must:

1. Reside on the ANI/ALI call-taker workstations’ PCs.
2. Run on the call-taker workstation PC without impairing the operation of the ANI/ALI Workstation or the network.
3. Require a separate monitor.
4. Automatically populate the map using ALI and/or X, Y data.
5. Differentiate between Phase I and Phase II calls.
6. Support up to 300 user-defined layers.
7. Be searchable by address, ESN, landmarks, and intersections.
8. Be able to communicate with the CAD system.
9. With the map data, be upgradeable from the mapping server.
10. Be automatic vehicle location (AVL)-capable.
11. Use current technology for labeling (appropriate shields based on classification, using expressions to generate labels).
12. Use current technology for polygon shading (transparency, pre-defined color schemes, variable outline thickness and composition, exhibited by city boundary versus COUNTY boundary versus state boundary).
13. Have an integrated 3D interface (i.e. Pictometry).
14. Have ability to display data in different projections on the same display, such as geographic features in State Plane over imagery in Universal Transverse Mercators (UTMs).
15. Have "common place" management, such as location of medical facilities, public gathering places, parks, government facilities and similar features.
16. Have hot links to pre-plan data, such as evacuation procedures, hazardous materials, contact info, MSDS, floor plans, and other data linked to a point location, such as a manufacturing facility or a school.
17. Have multiple simultaneous map views, such as current event and regional overview.
18. Allow authorized PSAP personnel to add and remove temporary annotation to map, such as bridge out, or lane closure and have the information distributed to the rest of the system.
19. Store application preferences by call-taker ID, such as visible layers, location of tools and toolbars and ability to “reset to default.”
20. Report discrepancies, including capturing and reporting events that were not able to plot because of errors in the map.
21. Use current ESRI "Address Locator" type service, where “CR 1234,” “CORD 1234,” “CO RD 1234,” and “COUNTY Road 1234” all map to the same feature.

5.17.3 Mapping - Interface with Current Software
It is a requirement that the system interface with the County owned Pictometry software.

5.17.4 Mapping - CAD—Interface
Currently, the interface between CAD systems and the mapping system is serial, but the COUNTY intends to have a higher-speed interface. CONTRACTORS must describe their interface options and interface conversion if needed.
5.17.5 Mapping - Map Update—Requirements
When the mapping application or the map data requires updating, the design of the IP support network and mapping application/data must permit that the COUNTY Administration Office can perform the update from their site. CONTRACTORS must explain their methods for updating the GIS data for each workstation. This explanation must include methods available, including bandwidth requirements and expected frequency. In the proposals, CONTRACTORS should place emphasis on methods that require the least amount of user intervention or technical expertise. It is a requirement that the CONTRACTOR provide enterprise mapping update capabilities. Please explain how this is accomplished.

5.17.6 Mapping - Map Update—Requirements-Interface
The map update interface must be supportable via third-party ESRI GIS maintenance programs. The COUNTY will consider an open architecture update interface only. Proprietary standards are not acceptable.

5.17.7 Mapping - Map Data—Requirements
CONTRACTOR must detail specific requirements of GIS data required to be used in the system. This will include the locations that this data is stored for normal operations and compatibility with existing GIS standard software packages. CONTRACTORS must describe how the proposed system would gather and merge various sets of the current GIS data.

5.17.8 Mapping - Map Data—Conversion
The CONTRACTOR must perform any data conversion from the current system to support the new solution. The COUNTY currently uses ESRI ARC GIS 9.3 mapping software. The new mapping system must be ESRI based and support ESRI 8.2 at a minimum.

5.17.9 Mapping - Map Display—Workstation
A highly integrated map display application must be collocated on all of the PSAP PC workstations. The mapping application must be compatible with the ANI/ALI system workstations.

5.17.10 Mapping - Map Display—Call Support Workstation
When the call-taker answers a 911 call, the mapping application must populate the map using the ANI/ALI and latitude/longitude information provided from the system, ALI, or wireless third-party ALI sources. If the call is a wireless call, upon the re-bid of the ALI, the mapping application must update the caller’s map position based on the latitude/longitude of the wireless call.
5.17.11 CAD—Incident Creation or Deletion
The map system must support incident management tracking upon creation or modification of an event in the CAD system. Currently, the CAD system will automatically send update information (including incident, number, appropriate map workstation, date, time, and location of incident) to the map display system and the incident displays on the map.

The map system displays a unique icon associated with the incident type to support this feature. When the map mouse points to the individual icon, the specific incident number, date, and time display to PSAP personnel. Additionally, when an incident is closed in CAD, the CAD system will automatically send a message to the local map server to have the incident removed from all users. The CONTRACTOR must state if their current baseline map system supports XML interfaces and must provide details as to the interface capability.

5.18.1 MIS—Records Management/Reporting System
An MIS Records Management/Reporting System must be provided as part of the system. The CONTRACTOR must describe the type of records management and reporting system proposed. The CONTRACTOR must provide specific information regarding the system’s capabilities and limitations. If “canned” type reports are available, the CONTRACTOR must include a brief description and sample of each report.

5.18.2 ALI Administrative Support
The workstation and ANI/ALI controller system must support a method of providing a report that would include a screen shot of the ALI information as presented, and a manner in which the workstation that was supporting the 911 call can provide comments about the inaccuracy or discrepancy of the ALI information. This report, when concluded, must be available for on-site personnel and the COUNTY via internal system e-mail, internal network, or by other means that do not require PSAP personnel to print and then fax.

5.18.3 MIS—Call Detail Records (CDR)—All Terminated Calls
The system must have the ability to provide CDRs after every offered or terminated call. The record must include, but not be limited to, ANI, seizure time, position answered, answer time, time in queue, disconnect time, incoming trunk number, etc. This data must be available at the PSAP and to COUNTY via login from any workstation or maintenance terminal.

5.18.4 MIS—Call Detail Auditing
The system must be capable of creating CDRs and system event records with the information gathered from workstations and COUNTY systems in the event that a call center’s quality of service comes into question. The COUNTY would use these records to
audit the events of the call in order to determine if processing occurred in a reasonable fashion. Call detail reports must include all ALI data in parsed searchable formats that can produce weekly, monthly, and annual reports based on any ALI data. In addition to the above requirements, an individual call event must be available that would be used to audit the individual call event including all call state changes, transfer codes, incoming and outgoing trunk information, transfer agent, ALI re-bid attempts such as initial, manual re-bid, and multiple auto re-bids, in order to totally reconstruct the events of the call.

5.18.5 MIS—CDR—Contents
Call detail and/or MIS information related to the individual PSAP call event must include all events, such as time call was presented, actual call answer time, position, call-taker login, transfer, transfer trunk, etc.

5.18.6 MIS—CDR Transmission
The system must support sending the records to a number of different destinations, such as to a printer to create a hard copy or to an Managed Information System (MIS) package to create a database report. MIS CDR Information should transmit automatically via a CAD-type port when the workstation releases the call, if the PSAP elects to enable this feature.

5.18.7 MIS—CDR Retrieval
All CDRs should be retrievable by the ANI or any other keyword search in the record, such as ALI, CPN, ESRK/p-ANI, ESQK, ESN, community, etc.

5.18.8 MIS—CDR—No Record Found
The MIS system must track and produce a report that is accessible from the PSAPs and the COUNTY of any ALI query classified as a “No Record Found” (NRF.) The report should include the original ANI, time and date of event, trunk, and position number. Should the system experience any failure including an ANI failure (for example mis-match between the ANI and ALI TN) then the system must generate a report that indicates this failure. This report should be pushed out to, or notification to, the COUNTY as well as the PSAP.

5.18.9 MIS—CDR—Availability
Call detail and MIS information must be available from the standard workstation via unique login. Off-site availability is also required at the COUNTY. The system must be able to store, archive, and retrieve CDRs for the past 12 months (rolling) for all 22 PSAPs.

5.18.10 MIS—Call Detail—Automatic ANI/ALI Record
The system must be equipped so that CDRs automatically match to ALI records. The
system must support PSAP administrative personnel sorting, displaying and/or printing the resulting records from any workstation.

5.18.11 MIS—Call Detail—Automatic TDD/TTY Archiving
The system must have a means to automatically archive a two-way TDD/TTY call. The TDD/TTY call data should be accessible via an ANI, ALI, date, time or wildcard search method. A distinction should show how to identify the caller and call-taker, plus a third-party if added. The CONTRACTOR must describe how their solution works to identify all parties on a call.

5.18.12 MIS—Reports—Group Performance
The number of calls offered, the number of calls answered, the number of calls overflowed to another group, and the number of lost calls are important pieces of data when trying to determine if the performance of a group of agents meets requirements. Detailed MIS group performance reports must be available at the PSAPs and at the COUNTY.

5.18.13 MIS—Combined Reporting—Local
The MIS must support accurate accounting of incoming and outgoing 911 trunk groups, Centum Call Second (CCS) any call offered, and trunk busy traffic analysis reports.

5.18.14 MIS—Individual PSAP Reports
Individual PSAP MIS reports must be available on any workstation. In addition, individual PSAP MIS reports must be available on the network in conjunction with the individual PSAP MIS administrator’s login.

These reports must include, but not be limited to, the following metrics:

- Number of calls offered
- Number of calls answered
- Number of calls overflowed to another PSAP
- Number of calls transferred—identifying the receiving agency
- Number of outgoing (non-transferred) calls
- Number of abandoned calls

These reports must also include data on how long calls wait in queue before reaching a call-taker, as well as providing count and percentage of calls not answered, calls answered within ten seconds, and other customer-specified intervals.
All reports must be available to the COUNTY. Also, all individual PSAP and combined regional reports must be accessible from the COUNTY.

5.18.15 MIS—Real-time Activity Tracker
The real-time activity tracker must be available at each workstation. It must be user-friendly, customizable and capable of generating user-defined reports for varying times. The system must be able to auto-schedule the generation of pre-defined reports, including, but not limited to, hourly and daily call volume, including the busy hour/day, by position and by PSAP. The system must support saving customized reports for future queries.

5.18.16 MIS—Real-time—Abandoned Call Reporting
The system must provide real-time and historical reporting on the number of callers that hang up before reaching an agent and how long callers waited before hanging up. This report must be exportable and internally supported.

5.18.17 MIS—Real-time—System Activity Monitoring
The system must support real-time monitoring of emergency trunk activities, 911 call queuing, and 911 console activities. The system must count the calls as they enter the queue. Call accounting must include but is not limited to the following:

1. Incoming calls
2. Outgoing calls
3. 911 wireline/wireless calls
4. Administrative calls
5. Alternate Emergency Access Number calls
6. Native VoIP calls
7. Abandoned calls
8. SMS calls (Short Message System)
9. MMS calls (Multimedia Messaging Service)
10. TDD/TTY calls
11. Transferred calls

5.18.18 MIS—Ad Hoc Reports
The system must provide users, supervisors, and maintenance personnel the capability to query the database, and create and print reports in an ad-hoc fashion. The CONTRACTOR must describe capabilities and limitations for ad-hoc reporting, including available data fields. The CONTRACTOR must clearly note exclusion of a specific data field from ad-hoc reporting.
5.18.19 MIS—E911 Call Data Records
The MIS system must incorporate the E911 call data records for the ability to search by, sort by and identify the following fields (at a minimum):

1. Date/time
2. ANI
3. ALI
4. TDD/TTY text
5. SMS/MMS
6. Call-taker
7. Position
8. Flag
9. ESN
10. Community name
11. Duration
12. Answer time
13. Ring time
14. Hold time
15. Class of Service
16. Abandoned calls
17. Transferred calls
18. Wireless calls
19. Non-wireless calls
20. Ring time
21. Trunk or line

5.18.20 Class of Service MIS—ALI Supplemental Information
Any supplemental information received in the ALI record including, but not limited to, ESN, Business, Residence and Notes, must be in a report. Parsed ALI reporting is desirable. CONTRACTOR must describe capabilities, limitations and available data fields for reporting. CONTRACTOR must note exclusion of a specific data field from ad-hoc reporting.

5.18.21 MIS—Changes to Data
The MIS system must track and store all changes to MIS data. The system must safeguard and protect the integrity of this data.

5.18.22 MIS—Query Languages
The MIS system must use standard off-the-shelf data management software such as MS SQL, etc. Use of proprietary query languages is strongly discouraged.
5.18.23 MIS—Canned Reports

At a minimum, the system must provide a variety of “canned” reports, in both tabular and graphic formats, providing information on:

1. System overview reports for any specified time. These reports should group appropriately within the specified time. For example, an annual report should provide monthly totals; a monthly report should provide daily totals; a daily report should provide hourly totals.

At a minimum, the following reports should be included:

- Inbound calls
- Outbound calls
- Abandoned calls
- Transferred 911 calls
- Transferred administrative calls
- Wireless calls
- Non-wireless calls
- Administrative calls
- AEAN calls
- TDD/TTY calls
- SMS
- MMS
- Duplicate caller report
- Ring-time statistics
- Trunk and line utilization
- Busy hour report
- Busy day report
- Busy month report

2. Call-taker overview report that identifies the following totals for 911 calls and administrative calls, individually and in comparison with other personnel during the specified time, to include:

- Total calls handled
- Percentage of total number of calls handled
- Average ring time
- Number and percentage of calls answered within 10 seconds
- Average hold time
- Average call duration
- Total duration of all calls

5.18.24 MIS—Viewing

Records and reports must be viewable from the screen. Printing records and reports as
the only means of viewing is unacceptable.

5.18.25 MIS—Status
User and trunk/line status functions must be available to users, supervisors, and maintenance personnel if granted access to these functions by the system's administrator.

5.18.26 MIS—Electronic Formats
The MIS package must support saving all maintenance logs, statistics, CDR, parsed ALI information, and TDD/TTY conversations in electronic format. The data generated from these reports must be exportable to off-the-shelf database or reporting software. The MIS package should support backing the files up to a removable medium, such as a CD or DVD, for secure storage.

5.18.27 MIS—Enterprise
The MIS package should support the total history of the caller and include any call handling efforts. For example, one PSAP answered the call and then transferred to another PSAP. The enterprise solution should support the accountability of any transferred calls. This feature must continue to isolate any other PSAP call data and only support transferred or conference calls.

5.19.1 Equipment Rooms
The equipment rooms have limited availability of new space to support the installation of the upgrade or replacement system. The new CPE footprint at the remote locations should not be larger than the current footprint. The data center footprint can be as large as needed.

5.19.2 Uninterruptible Power Supply (UPS)
UPSs will be required where existing UPSs are insufficient. The COUNTY will provide for UPS for each station and/or common equipment at the remote. The CONTRACTOR will need to identify and provide the COUNTY with their requirements for each of these locations.

5.19.3 Training—Materials
Sufficient copies of end user training documentation and copies of administrative training documentation must be included in this project in electronic format, CD or DVD formats. In addition it is highly desirable to have online training capability. Each telephone system station must have a feature guide that explains the commonly used features. Participants must receive individual copies of applicable training materials during training. The CONTRACTOR must authorize reproduction of these and any subsequent training materials provided. The CONTRACTOR must provide a detailed explanation and instructions on adding or modifying user software features, such as
speed dialing, call-taker pass-codes, etc.

5.19.4 In-service Coordination
The CONTRACTOR must coordinate the in-service activities with the related network service providers. The COUNTY will order the network circuits based on the recommendations of the CONTRACTOR. Problems and troubles will be reported by the remote locations to the network provider and relayed to the equipment provider. CONTRACTORS must describe how this will be accomplished.

5.19.5 Removal/Reuse
The CONTRACTOR must be responsible for coordinating the removal and/or reuse of existing equipment and cables abandoned because of the new system installation.

5.19.6 Restoration
The CONTRACTOR must describe the intervals that workstations, servers, devices, PSAP CPE, and map systems are backed up during warranty and maintenance so that total restoration can be performed if a component or device needs replacing. The CONTRACTOR should use a program that will duplicate the hard disk drive of a workstation to a CD or network storage device. This will allow for a quick, full restoration of the workstation, if need be. CONTRACTORS must explain in detail how they will accomplish the restoration on the workstations, servers, ANI/ALI controller, map system, if applicable.

5.19.7 Reusable Components
This requirement must consider any components that are maintainable and reusable from the 911 system and then augmented with new components to complete the spares kit.

5.20.1 Single Point of Contact
The CONTRACTOR must have a single point of contact for any CPE issue. There must be a single point of contact established for the network provider to report problems to the CONTRACTOR for the purpose of issue resolution.

5.20.2 Support—Day of Cut
The CONTRACTOR must have a sufficient number of knowledgeable technical and workstation support personnel on site to assist COUNTY and PSAP personnel the day of the cut.

5.20.3 Contractor Expertise
The CONTRACTOR must possess technical and functional design experience. The CONTRACTOR must be well established in the design, delivery, and maintenance of the proposed solution for the County. The CONTRACTOR must demonstrate the products,
technical expertise, experienced technicians, and project management skills for the proposed solution(s).

5.20.4 Electrical Code  
The CONTRACTOR must ensure that all equipment is properly isolated and grounded and that the probability of lightning damage is minimal. The installation shall be in accordance with industry engineering practices and consistent with applicable local and state codes.

5.20.5 Equipment System Manuals  
The CONTRACTOR must provide, to the COUNTY, three complete sets (paper copies, if available) and one electronic or CD copy of all manuals for equipment procured and supplied as part of the contract. The CONTRACTOR must also provide one complete set of all manuals for each PSAP.

5.20.6 Logging Recording System  
The CONTRACTOR will provide a logging recording system. This system is intended to record 911 traffic at each of the two sites that will host the CPE system. The remote sites must still retain their capability to record position and administrative line if that agency chooses. The logging recording system shall be able to store and retrieve data to include voice from the host site as well as remotely with the proper permissions. The logging recording system must be compatible with NG911 data recording requirements such as text, photos and videos. The CONTRACTOR shall provide all hardware, "systems" engineering, software, training, material, maintenance and labor necessary to install and maintain the operation of the two logging recorders to include mirroring of the data located at each of the proposed host locations.

5.20.7 Remote Site Interfaces: 911 Workstation—Logging Recorder Interface  
Each 911 workstation must have an adjustable audio output to the logging recorder systems so that audio level can easily interface to a number of logging recorder systems. This interface is required to “mute” when the 911 workstation is not active so that background conversations are not offered to the logging recorder. The CONTRACTOR must terminate the logging recorder interface to an appropriate connecting block which should be located near the existing logging recorder interface blocks or other location as determined by COUNTY.

5.20.8 Logging Recorder and CAD Interface  
The CONTRACTOR must provide a functional description of the logging recorder interfaces with the hosts, remotes and 911 workstations. The functional description should include how, when, and what information is sent from the hosts and/or 911 workstations.
5.20.9 Serial Outputs
Each 911 workstation at the remote locations and the test positions at the host locations must have two RS-232 ports: one port is for the CAD systems; the second port is for the logging recorder ALI feed. The RS-232 port outputs must support current and proposed NENA ALI formats.

5.20.10 Demarcation Jack
The CONTRACTOR must supply separate demarcation jacks dedicated and labeled for CAD and logging recorder interfaces. These jacks will be located within the remote facilities near the CAD and logging recorder systems at the remote locations. The CONTRACTOR must support interface testing with CAD and logging recorder systems. Integration methods employed by the CONTRACTOR must meet Counties’ approval and not affect the warranties, agreements, or proprietary rights of the existing systems' manufacturers in place at the remote locations.

5.20.11 Host Site Interfaces:
Each host site CPE must have an adjustable audio output to the logging recorder systems so that audio level can easily interface to a logging recorder system. The CONTRACTOR must terminate the logging recorder interface to an appropriate connection point which should be located near the logging recorder interface blocks or other location as determined by COUNTY. The CONTRACTOR must supply separate Demarcation jacks dedicated and label the interfaces. These jacks will be located within the host facilities near the logging recorder systems. Each host site CPE must have two high speed ports: the ports are for the logging recorder ALI feed. The port outputs must support current and proposed NENA ALI formats.

5.21.1 Voice Logger and Storage Systems
The current radio, microwave, telephone line infrastructure, and remote backup facilities will continue to be housed in the current remote locations. In addition, it is a requirement that the new host location logging records will be functioning as mirrored voice logging records. The COUNTY requires that it be able to play back recordings from either the recorders themselves, or the centralized storage units. This centralized audio storage (CAS) should store the information. This may use a hard drive- or DVD-on-demand type architecture (legal use) where virtual DVDs would be created on storage array, and physical or working copies could be made as necessary from the host locations. The systems must be able to be backed up and managed from either location. The systems shall consist of a centrally located voice recorder and storage systems to serve the agency and provide complete integration with the host location ANI/ALI controller(s). The systems must be designed so that the failure of one component or module will not result in loss of audio collection or storage. All critical systems’ modules shall be protected through the use of redundant
modules to ensure single point of failure tolerance.

The central equipment power supply must be modular and redundant so that the power systems are capable of meeting all power requirements in the event of failure of any individual power supply module. The systems shall have a hot standby operation on vital modules such that upon the failure of any of those modules, the systems shall automatically switchover or utilize the backup module. The failure of any component shall not cause the loss of any audio from any analog port. The systems shall include online monitoring, systems administration, and maintenance positions. The systems shall be capable of recording the ANI/ALI associated with the 911 call. All audio signals entering the logging recorders shall be converted to its digital equivalent with compression. The systems shall be equipped with a digital power monitor to monitor all voltages, power breakers, port activity or inactivity, and systems alarms. Upon a failure condition, it will display an alarm message and/or audible alert with the ability to contact both the COUNTY and the selected CONTRACTOR’s 24/7 support center where it can be remotely diagnosed and dispatched for service.

5.21.2 Inputs
Each recorder module shall contain interfaces for all analog and digital telephony standards.

Analog Inputs
- Inputs shall be balanced and isolated from any internal voltage source.
- DC impedance for telephony connections shall be greater than 10 MΩ.
- The crosstalk coupling value shall be (at minimum) -60 db.
- Signal-to-noise ratio: 35dB referenced to -15dBm at 64 Kbps.
- Supported analog input signals shall range from 300 Hz to 3400 Hz, with a maximum deviation of 3 dB
- The Voice Recording System (VRS) shall support analog recording modules passive serial connection/termination to radio.
- The VRS shall support an input dynamic range of at minimum -50 dBm.
- The VRS shall support a frequency response between 300 Hz (-6dB) and 3400 Hz (-7dB).

It shall be possible to configure the analog recording inputs with warning tone without additional components or cost at any time in the life of the systems. Warning tone must be able to be adjusted to variable levels and be enabled or disabled per
channel. Non-activity alarms must be available based on a specified period of inactivity on a per channel basis.

### 5.21.3 Digital Inputs
The recorder module shall support interfaces to a digital telephone systems and digital telephone proprietary and standard formats. The CONTRACTOR shall detail the available interfaces for standard Nortel and Avaya digital set and VoIP-type phone sets.

### 5.21.4 Record Triggers
When recording analog telephone lines, the following record triggers shall be available for each channel (for analog off-hook detection), CTI, or remote activation: VOX, hookstate detection, continuous, programmable DC voltage detection threshold When recording digital telephone lines, the following record triggers shall be available: D-channel signaling capture and record activation/termination, CTI, VOX, on/off hook detection, and level detection with manually adjustable threshold. It shall be possible to configure the record trigger for each channel separately to accommodate various channel requirements. The VRS shall be able to integrate with equipment that supplies a dry contact closure to signify the beginning and end of a call.

### 5.21.5 Voice Activation
VRS shall continuously record voice activity to make sure the first part of the voice transmission is captured and not clipped. There should also be a delay after the end of voice activity. Describe the method the system uses to accomplish this. The VRS shall provide an alarm indication if “no audio” is detected after a specific settable time period per channel is exceeded.

### 5.21.6 Analog Signaling
Dialed Digits—the recorder module shall decode all dialed digits (DTMF or MF) during a message, to enhance search capabilities. The digits will be stored with the audio record. The VRS shall be capable of saving up to 48 dialed digits for each recorded message.

- **Dialed Digits**—the digital recorder module shall capture and store both calling number and dialed digits information.
- **Calling Number**—the recorder shall decode CLI information that meets the Bellcore GR-30 specification.

### 5.21.7 Voice Processing
Messages in the form of analog audio input signals shall be converted to digital data, compressed and stored as digital packets on disk. To ensure confidentiality and to
prevent unauthorized playback of recordings, audio files shall be recorded and archived in a format that is not readable by standard media players. The types of speech compression supported by the VRS shall be selectable from 5.3 kb/s to 64kb/s. It shall be possible for the CONTRACTOR’s system administrator to select which compression algorithm is to be used per recording channel. List the available CODECs or compression standards available with the system.

5.21.8 Other Inputs
The system shall allow for data to be associated with the recordings. This data may be ALI, or data within the digital call stream. Describe the data that the system will be able to accept and store to include if not all data in a digital format define what is available. Describe the data inputs that are supported and the number of concurrent data sources that are supported. Describe NG911 data recording capabilities such as text and multimedia; photos and videos.

5.21.9 Storage
Centralized Archive.

The VRS solution shall archive voice recordings and associated data to centralize storage to facilitate long-term, high-speed access to recordings. The centralized archive solution shall support RAID, SAN and NAS. The centralized solution shall support storage of one year of system recordings. This should be based on current call volume plus at least 50% contingency.

Explain the number of channel hours that is needed, and the method used to calculate it. The centralized archive solution shall operate on servers running Windows operating systems. The centralized storage solution shall support a redundant architecture to maximize uptime. The centralized storage solution shall support an architecture that provides geographic redundancy. The centralized storage solution shall support rules-based archiving. Define the bandwidth requirements of the transfer of voice recordings from the recorders to the centralized storage.

Define the bandwidth requirements of the mirroring of data between the two host sites. The centralized storage solution shall include data transfer options. The centralized storage solution shall allow an administrator to program variable retention periods on a per-channel basis.

5.21.10 Retrieval
The system shall support administrative playback. At each location in addition to data captured on logging recorders, the systems must provide separate functionality for recording and playing back all calls—voice, TTY/TDD—for the previous 30 minutes of operation at each 911 workstation. Associated playback must occur within one second.
of a minimal number of keystrokes or mouse clicks. Play back should be able to be configured based on a user’s permission.

The CONTRACTOR shall provide a multi-channel non-browser based search, replay, and administrative application which can be loaded on a client workstation. It is desirable that the CONTRACTOR provide a browser based search and replay application that is accessible on other workstations.

5.21.11 Search and Replay
The systems shall provide up to two analog output channels per recorder to be used for direct connected speakers and allow play back at the device.

Audio shall be transferred over the LAN in compressed format and optionally formatted (via the search and replay application). The audio shall be streamed to the user desktop to enable faster replay.

Replay shall be possible for up to five concurrent users at each remote. It shall be possible to record on all channels during replay. The replay operation shall not affect the record performance in any way. It shall be possible to search for messages within the VRS using the tagged ANI/ALI data as the search criteria.

VRS shall provide a Windows-based client replay application that supports online help. Please provide an actual screen shot of the basic search screen in .jpg format. It is desirable that the CONTRACTOR provides a browser based search and replay application that is accessible on other workstations. The search and replay client application shall be capable of displaying calls graphically, by channel, by talk group and/or radio ID. Please provide detailed lists of all data elements that can be used as search criteria. Please provide an actual screen shot in .jpg format depicting calls being graphically displayed. The search and replay client application shall allow the user to search discrete fields using wild cards. Search and replay client application shall be configurable using .xml. The search and replay application shall be able to save the audio from a custom multi-channel/multi-talk group/ multi-radio ID search into a single stereo file. The search and replay application shall search all channels at the same time. The search and replay application shall support spoken time and date. Spoken time/date shall be synchronized to recorder time. Spoken time/date can be saved to one of the stereo channels in a file. On playback from a standard PC, the spoken time and the audio from the call shall be played on separate speakers; i.e., the spoken time is played on the left speaker and the audio on the right speaker.

Search and replay application shall be capable of displaying and replaying an unlimited number of channels in synchronized mode, allowing effective scenario reconstruction. The VRS shall display and save all (no limit) recordings associated with a particular
incident to a single directory (a “scenario”). The solution shall search for and re-display the saved scenario plus associated call data and continue searching or filtering for calls within the saved scenario.

Users shall search on the following criteria, individually, in any combination (Boolean) and supporting wild cards:

- Time and date
- Duration
- Channel ID
- Position or alias
- Extension number
- Condition code (incoming or outgoing)
- Dialed number
- Calling number
- Annotation—user specific notes
- ANI/ALI data

It shall be possible to combine any number of search criteria elements into one search function to provide complex but efficient systems-wide searching capability. The VRS shall toggle AGC on and off during replay.

The search and replay application shall support block replay. This replay feature involves the selection of multiple recordings displayed graphically that can be played sequentially by one press of the play button. The search and replay application shall view all recording channels. The search and replay application shall not require the user to have knowledge of the channel map to specify from where the message needs to be replayed.

The search and replay application shall seamlessly perform search and replay on 911 telephony call recordings. The criteria shall support 911 (ANI/ALI) information.

The search and replay application shall limit individual users to retrieve and replay calls related to specific trunk groups or groups of designated trunk groups. The search and replay application shall replay the silence between recordings to fully recreate the original incident. The application shall allow the user the option to play back the recordings with silence within recordings played (silence reconstruction) or not (skip silence).
It shall be possible to play recordings in mixed mode, where the recordings are replayed as they occurred; or in sequential mode, where each recording is played back sequentially, one at a time. This may aid the user in understanding individual recordings where multiple telephone calls occur on different recorder channels simultaneously. There shall be no limit to the number of recorder channels that can be displayed and replayed synchronously, up to the recorder system’s capacity. During playback of recordings, it shall be possible to select a spoken date and time option to provide audible call authentication. It shall be possible to configure how often the date and time is spoken. The range for the spoken time interval shall be configurable independently from the spoken date. The spoken time/date volume shall be adjustable such that the recordings are not drowned out.

Explain if there is an option to speak the data associated with the call. Describe the method. It shall be possible to vary the speed of playback without pitch distortion, from 0.5x to 2x.

It shall be possible to define the skip forward/backward interval between one and sixty seconds.

5.21.12 Automatic Gain Control (AGC)
AGC shall be available for replay only. It shall be possible to enable or disable AGC on replay. It shall be possible to replay the true input voice signals where signals have been recorded with the record AGC disabled. The recorder shall not alter the input levels during the record process when AGC is enabled; therefore, recorders which use fixed AGC as part of the recording process shall not be considered.

5.21.13 Output of recordings
The system shall support the output of calls and data to easily readable and Standard formats (e.g., MP3, wav, txt).

5.21.14 Dubbing
The VRS shall be able to dub to a DVD or other removable media and provide the capability to “fast” dub calls to up to three removable medias simultaneously at eight and sixteen times normal speed. The fast dubbing unit plus associated software application shall be able to accept the output of a large multi-channel scenario reconstruction project and send that output to removable media at eight times and sixteen times the normal speed. (Example: A scenario that consists of eight minutes of recordings shall take 30 seconds to send to storage.) List all removable media supported by the system, and optional devices for media available.
5.21.15 System Requirements—System Availability
The voice loggers and storage systems shall be available to users 24 hours per day, 7 days per week. If the proposed system’s availability is less than 99.999 percent, the CONTRACTOR shall detail the reasons for the decreased availability.

5.21.16 Voice Recording Systems (VRS) Overview
The VRS shall record up to 150 wired channels and 50 equipped channels. Recording module(s) shall support a minimum of two archive drives and a hard disk (for instant recall). The VRS shall allow for future advances in archive technology to be incorporated without chassis modification. Each recording module shall be able to support up to 365 days of recordings in the event that communication is not available to the CAS solution. The recorder shall record a mix of digital extensions.

The decryption of native digital formats shall be done within the recording chassis. Recorders that require externally mounted interfacing (including D to A converters) will not be viewed favorably. To ease troubleshooting and minimize support and space requirements, the audio recording architecture shall be non-distributed, combining voice connectivity cards, internal hard drive, operating systems, and storage within the recorder chassis solution at each host location. Open formatting will be used. Upgrades shall be allowed either directly using the VRS input devices (DVD, CD) as well as allow for upgrades remotely via local area network (LAN). The system shall be able to add recording channels to the recorder without upgrading other elements of the VRS (memory, processors, etc.) up to the maximum limit of the chassis. It shall configure each channel with a user-defined name, as well as its channel number to assist in searching, management, and monitoring.

5.21.17 VRS
The recorder shall use, at a minimum, an Intel 3.0 GHz processor. Solutions that provide recording modules, appliances, or recording servers with less than 3.0 GHz will not be viewed favorably.

5.21.18 Time Synchronization
The systems must interface to the new system network clock to be located at the host location. This network clock requirement is provided under this RFP. The CONTRACTOR shall include all necessary cabling and interfaces to connect the new recorder.

5.21.19 Diagnostics and Alarms
The VRS shall support five different means of reporting alarms from each recorder.

- LED
- Audible alarm
- Monitoring application loaded
on individual clients

- E-mail notifications
- SNMP with standard Management Information Based (MIB) file

Alarms and management feedback shall be provided via a built-in client application and via SNMP commands monitored from an SNMP management application. A standard MIB file shall be provided.

The recorder module shall include built-in tests that automatically monitor the status of the VRS, initiating audible, visual, and network alarms in the event of a failure. The CONTRACTOR’s system’s administrator shall have the option of enabling or disabling the alarm on a channel-by-channel basis and the ability to silence the alarm indicators. The tests are required to alert the host and remote personnel if no recording has taken place on any active channel after a predetermined time.

The VRS shall keep a full audit trail of all user access and VRS maintenance functions, with details of who accessed the VRS and when, and with details of what was changed or accessed.

The VRS shall create a list of events that will trigger an alarm. In addition, the alarm type (SNMP, beep tone, etc.) shall also be selectable on the basis of specific events.

The VRS shall keep a full audit trail of all alarms and faults and provide a method of viewing the alarm history.

5.21.20 Hard Drive

Each individual recording module shall be capable of being configured with internal or external hard drives. Each recording module shall be capable of storing up to 365 days, in the event that the module cannot communicate with the CAS solution. The CONTRACTOR is required to provide the number of channel hours per location. The database shall be able to maintain an extremely high insert rate, be resistant to hacker and virus attacks, very secure and stable (not prone to corruption). To maximize hard drive efficiency and provide a very high level of security, the recorder shall write voice to a RAID 6 disk array.

Messages stored on the hard disk shall automatically be copied to the archive media unless the archiving is disabled. In the event that the instant recall buffer is approaching 90 percent full of un-archived data and there is no archive available, the recorder shall initiate an alarm warning that data will be lost if a new archive is not enabled.
For security reasons, it shall not be possible to manually delete specific individual messages from the hard drive of the recorder.

5.21.21 Remote Management
It is required that the systems can be managed from the primary host locations. It shall be possible to manage all of the recorder components from one PC workstation.

It shall be possible to monitor the status and alarms of each individual recorder from a single PC workstation. A status change on any recorder mainframe shall result in a status change indication being displayed on the PC workstation. In addition to remote replay via the LAN, the solution shall provide an optional means of listening to the replay of recordings.

5.21.22 Security
The VRS shall support a security setup to include unique security accounts allowing operators to access only specified channels with specified functionality.

The systems shall support a configurable feature that prevents unauthorized users from ejecting media from the recorder module. Media that has been designated for removal from a remote PC workstation shall not be ejected from the recorder.

The systems shall support a configurable feature that prevents unauthorized users from replaying media. The recorder shall not require access to the operating systems level for any function of use or maintenance of the VRS. All operations shall be provided through a user-friendly application from a remote client PC. No recorder will be accepted that requires the need to access the recorder desktop or operating systems for any configuration, installation, or upgrades to the VRS.

5.21.23 Module Hardware
Each recorder module shall be suitable for rack mountable installation into an equipment cabinet.

5.21.24 Redundancy
The VRS shall support an internal or external hot-swappable RAID 5 disk array. All primary recorders shall support dual hot swap power supplies. The recorder module shall support a power supply that allows a failed unit to be exchanged without compromising the recorder performance.

The recorder shall continue to operate fully with one failed power supply module within the unit. The analog audio interfaces shall support a master/slave redundant configuration as specified by channel.
5.21.25 ANI/ALI
The systems shall integrate with the current ANI/ALI output provided by the 911 service provider’s CAD port.

The systems shall decipher the ANI/ALI information, normalize the information into a static call record, and bind the call record with ANI/ALI data with the appropriate recording. The systems shall provide an ANI/ALI annotation application that is adaptable to changes in the ANI/ALI format. The systems shall extract the ANI/ALI information from the ANI/ALI controller or the appropriate output on the CAD systems.

The systems shall be configurable in a dual server configuration. The dual server configuration ensures that all 911 calls are annotated, even in situations where one of the servers experiences a problem.

5.21.26 Additional Features
It is a requirement that audio to text conversion with the ability to produce key word/phase search is provided.

It is a requirement that multimedia recording, capturing telephone interactions along with related data, including phone numbers and locations, is provided. It is a requirement that the feature of quality assurance, enabling efficient call review and scoring to ensure proficiency is provided.

It is a requirement that the incident reconstruction and analytics feature is provided which will include using application event triggers to tag calls with information, such as computer-aided dispatch incident identification or call-taker name. It is desirable that e-learning and coaching be provided to the PSAP management, delivering education and timely communication to agents’ desktops, addressing skill gaps. Please give detailed information on your e-learning applications. Describe how this function will work. It is desirable that performance scorecards, empowering PSAP management to see their production levels in relation to agency goals. It is desirable that the VRS provide the means to accomplish citizen surveys, sending outbound surveys as follow-up to citizen calls.

It is a requirement that the VRS provides for complete file backups so that total restoration can be performed if any device fails and needs to be replaced. List the available media used for these backups, and the restoration process. It is required that each remote be isolated from the other remotes along with their playback, so that only the COUNTY has access to all channels.

5.22.1 TELCO Demarcation
The CONTRACTOR shall be responsible for providing connectivity between the
equipment and network and any Telco or PSAP.

5.22.2 Transient Voltage Surge Suppression (TVSS)
External secondary TVSS devices shall protect all telephone-equipped ports on the ANI/ALI controller that connect to, or could connect to, private or leased-line facilities, including CO POTS, 911 trunks, DS1 facilities, IP Gateway, or other telephone lines terminating on the system.

5.22.3 TVSS—United Laboratories (UL)-Listed
These devices must be UL-listed as TVSS or Transient Voltage Surge Suppressors. These devices must meet or exceed UL standard 497A.

5.22.4 TVSS—Clamping Voltage
The TVSS devices must be rated no higher than a clamping voltage of 250 volts (.25kV) or less for plug-in TVSS, or commensurate with the service voltage on hard-wired TVSS. The clamping time should be between one to five nanoseconds.

5.22.5 TVSS—Degradation of Service
The TVSS must in no way degrade the audio signaling to the workstation.

5.22.6 Wiring—Cables
The network will be at least 100 Base-T Ethernet utilizing at minimum CAT 5 twisted pair cable and meet TIA/EIA-568 criteria for CAT 5 cabling and connections. All CAT 5 cable runs must be certified and warranted for a period of 15 years. Cable jackets will be pink in color. All cable runs will extend from a CONTRACTOR-provided patch panel in the equipment room to each operator position and terminated on an RJ-45 jack positioned as close to the workstation as possible. Any patch panels or hubs should be sized to accommodate growth of ten positions without the need to purchase additional hardware. The cables and jacks should be labeled and marked with a marking scheme approved by the COUNTY prior to installation. All cables will be marked within three inches from terminations at each end and be clearly visible. Jacks will be marked on the exterior cover. No splicing, over bending, metal staples, over tightening of cable ties and stretching of cables will be acceptable. All results from cable testing and certification will be submitted to the COUNTY. A layout diagram of patch panels and jacks at each console will be given to the COUNTY.

5.22.7 Wiring—Cable—Terminations
The CONTRACTOR must label and identify all termination points, jacks, patch panels, and cables by circuit number, position, port, etc. COUNTY 911 Management and PSAP staff must approve labeling schemes during the installation process, since they are ultimately responsible for the system.
5.22.8 Wiring—Data Patch Panel
All PBX and ANI/ALI station ports and workstations, ALI links, maintenance terminals, ANI/ALI 911, CO ports, Telco lines, etc., must terminate on a CONTRACTOR-provided data patch panel to allow for end user patch cord fault isolation.

5.22.9 Wiring—CAD Ports
The CONTRACTOR must provide dedicated CAD port jacks near the PSAP-owned CAD, logging recorder, and mapping equipment. The CAD system uses RS-232 ports.

5.22.10 Wiring—Workstation
The CONTRACTOR must provide the console jacks and cabling. The CONTRACTOR should terminate the wiring runs to wall-mounted patch panels. Six jacks must terminate at each 911 workstation. The CONTRACTOR must wire four of the jacks to the TIA/EIA 568B standard. The CONTRACTOR must connect the remaining two cables to RJ-11 jacks. The CONTRACTOR must clearly label the jacks at each branch location; the jack number should match the position number where it is located. For example, call-taker position 1 should have jack #1 installed. The jacks themselves must be labeled A through F and correspond with the patch panel located in the equipment room or wiring closet.

The jack labeled as “F” is the RJ-11, reserved for voice logger applications, and will terminate on an appropriate connection block. The jack labeled as “E” is the RJ-11 reserved for telephony applications that will be required. The CONTRACTOR must state the wiring required to support the workstations in their workstation replacement. The COUNTY intends to have surplus structured wiring available at each workstation for future applications.

5.22.11 Building Ground
The CONTRACTOR must confirm that the building ground meets or exceeds the equipment manufacturer’s minimum ground specification of the proposed solution. National Electric Code allows a resistance to the surrounding soil of 25 ohms. NENA suggests that five ohms is highly recommended by most equipment manufacturers. As part of this response, the CONTRACTOR must detail the equipment manufacturer’s specification for building ground. The successful CONTRACTOR is not responsible to correct any building ground issues. However, the CONTRACTOR does need to state that the grounding system meets manufacturer’s specifications or does not.

5.22.12 Common Grounding Point
The rack or cabinet must include a common grounding bar capable of supporting additional external components, such as Telco-provided ALI modems, etc., and then connect to the common PSAP equipment room grounding system.
All 911-related equipment must be isolated from the other equipment, such as the radio, so that if the radio tower takes a lightning strike, the energy does not leak over into the 911 equipment.

5.22.13 Electrical Isolation
Each call-taker position frame/chassis ground must be electrically isolated from the common equipment to eliminate ground loops due to ground potential differences as per NENA recommendations.

5.23.1 Project Team - Project Manager(s)
The CONTRACTOR must assign Project Managers who are familiar with CPE systems, 911 networks, IP networks, and any additional proposed system(s). The COUNTY will determine and conduct bi-weekly project meetings on site and/or via conference call as specified by the COUNTY. The COUNTY reserves the right to conduct more frequent project meetings during any phase of this project. Substitution of the Project Manager or other key employees by the CONTRACTOR must require the express written permission of the COUNTY. The COUNTY may require the removal of any employee from work, and the CONTRACTOR must replace such employee upon demand by the COUNTY. The CONTRACTOR’s management must commit to supporting the qualified and COUNTY pre-approved Project Manager assigned to this project for the duration of the installation and acceptance time periods.

5.23.2 Project Team - Technicians
CONTRACTORs must provide a list of CONTRACTOR and manufacturer support technicians who will provide support services on this project including:

1. Relevant employment history and training of technicians. All personnel will be subject to criminal background check.
2. List must include number of certified technicians and levels of experience on the IP network solution that are within two of the COUNTY remote locations.
3. List must include number of certified technicians and levels of experience on the IP network solution that are within four hours of the COUNTY remote locations.
4. It is a requirement that the CONTRACTORs have the necessary technical expertise and proven experience with similar equipment and configuration as proposed.

5.23.3 Project Team - Technician Training
All persons who will be providing support on any system must be adequately trained to perform installation and ongoing maintenance. The COUNTY reserves the right to audit qualifications of anyone working on the system at any time and to reject any technician or persons providing support on the project. It is the responsibility of the
CONTRACTOR to ensure that all technicians meet the initial training and subsequent training requirements for all work and proposed systems.

5.23.4 Project Team - Support Technicians
The CONTRACTOR must provide a list of support technicians to the 911 Coordinator at least every six months or whenever there is a change in personnel or with the following information:

- The number of certified technicians, and the name of certified technicians with their respective levels of experience on the proposed solution, within two hours of the COUNTY data centers and/or remote locations.
- The number of certified technicians, and the name of certified technicians with their respective levels of experience on the proposed solution, within four hours of the COUNTY data centers and/or remote locations.

5.23.5 Project Implementation - Project Manager
The CONTRACTOR must assign Project Managers who are familiar with CPE and 911 networks, IP networks, and any additional proposed system(s).

5.23.6 Project Implementation - Project Plan
The CONTRACTOR must submit a narrative that details the complete CPE system Project Plan. The plan must include details on how the conversion process will not interrupt present E911 service and operations. Major areas of concern are:

1. PSAP CPE system installation or upgrade plan
2. Analog, digital, and IP network interface testing to gateways and PSAP location
3. ALI interface testing
4. CAD, logging recorder, administrative PSTN services, and PBX lines interface testing
5. A detailed Acceptance Test Plan (ATP) for all analog, digital, and IP network functions.

5.23.7 Project Implementation - Gantt Chart
CONTRACTORs must submit a task-oriented Gantt chart (using MS Project 2000 or later version) that details the CPE System installation. The Gantt chart must be broken down to identify host and remote Data Center and PSAP location installations. The COUNTY reserves the right to approve the Gantt chart.

The proposed start date for the project must use a “contract date” MM/YYYY and specify each project task in weeks or months. The Gantt chart tasks must include all
details to support the project plan

5.23.8 Project Implementation - Project Meetings
The COUNTY will determine and conduct bi-weekly project meetings on site and/or via conference call as specified by the COUNTY. The COUNTY reserves the right to conduct more frequent project meetings during any phase of this project.

5.23.9 Project Implementation - Unexpected Costs
All costs resulting from oversights, equipment failures, and/or unexpected events that affect the CONTRACTOR’s ability to fulfill the contract requirements remain the responsibility of the CONTRACTOR. The COUNTY must approve any requested changes before implementation of such changes and before incurrence of additional costs.

5.23.10 Acceptance - Test Plan
The following acceptance test plans are required as described in the following subsections. The CONTRACTOR must perform a pre-cut test plan and a post-cut test plan. If the COUNTY determines that the CPE system has not passed a performed test, the COUNTY will provide the CONTRACTOR with a written description of the way(s) in which the system’s performance was unsatisfactory.

The test plans must include the CTI, VRS and mapping applications. The document will also include a limited but reasonable period for the CONTRACTOR to resolve the problem. The CONTRACTOR is responsible for preparing the test plans and the COUNTY will approve the test plans.

Some caveats for acceptance testing follow:

- In measuring acceptance, system failure resulting from external causes, including, but not limited to, acts of God or fire, will be excluded from the acceptance testing.
- Upon discovery that the system or any part thereof requires correction, the COUNTY reserves the right to continue use of such system or part until it is convenient to the COUNTY for change implementation.
- If the system does not function because of a problem in the CONTRACTOR’s new hardware or operating system, it is the CONTRACTOR’s responsibility to define and document the problem and furnish the corrective action to repair the problem.
- The COUNTY will notify the CONTRACTOR in writing when the CPE system has passed/completed the final acceptance test.
5.23.11 Acceptance - Pre-cut and Post-cut Installation Testing
The CONTRACTOR must be responsible for pre-cut testing of the incoming analog and
digital 911 trunks, Telco analog POTS lines, ring-downs, and digital interfaces between
911 and administrative telephone system. The CONTRACTOR must re-test all
interfaces post-cut.

5.23.12 Acceptance - Pre-cut—Preliminary Testing Plan
A preliminary acceptance-testing plan is required in this RFP response. A testing plan
must be developed by the CONTRACTOR and approved by the COUNTY. Once accepted
by the COUNTY, testing at the initial installation at each PSAP will use the test plan.

5.23.13 Acceptance - Failure Prioritization
The following failure priority level definitions are for use as criteria in
preparing the Systems and Acceptance Testing process:

1. Priority One
   Priority One failures are major system failures that render the 911 and/or administrative telephone
   system completely unusable and/or inoperable and are operationally unacceptable by the PSAP Director and/or
   the 911 Coordinator.

2. Priority Two
   Priority Two failures are major and minor system failures that significantly reduce 911 and/or administrative
telephone system operability and usability and are operationally unacceptable by the PSAP Director and/or
   the 911 Coordinator.

3. Priority Three
   Priority Three failures are minor system failures that minimally reduce
   911 and/or administrative telephone system operability and usability
   and are operationally acceptable by the PSAP Director and/or the 911
   Coordinator only during the acceptance-testing phase.

4. Priority Four
   Priority Four failures are minor system failures and punch list items that
   have little to no effect on 911 and/or administrative telephone system
   operability and usability and are operationally acceptable
by the PSAP
Director and/or the 911 Coordinator only during the acceptance-testing phase.

5.23.14 Acceptance - Final Testing Plan
A final acceptance testing plan is required before placing any system in service. Expectation is that final acceptance testing will commence immediately upon system cutover and proceed for 60 consecutive Priority One, Two, or Three Failure-free days. If a Priority One Failure occurs during the final acceptance testing period, the final acceptance testing period stops and the failure or failures are expediently fixed to the COUNTIES’ satisfaction. During this period of interruption, the system must continue to operate with the greatest degree of reliability possible given the respective failure(s). At the Counties’ sole discretion, the final acceptance testing period of 60 consecutive failure-free days will restart the first business day after repairs are complete.

The CONTRACTOR must complete all pre-cut testing at least ten business days before beginning scheduled training to assure a quality-training environment for the COUNTY personnel.

5.23.15 Acceptance - Pre-cut-Acceptance Testing Responsibility
Until delivered, implemented, tested, and accepted by the COUNTY, the CONTRACTOR must be responsible for all materials, hardware, and software provided. The CONTRACTOR shall certify in writing to the COUNTY when the system is installed and ready for testing. Only the COUNTY will determine the degrees of system failure and operability for acceptance testing purposes. The CONTRACTOR must supply any required test equipment.

5.23.16 Acceptance - Pre-cut—Acceptance Testing—Transfers
The CONTRACTOR must coordinate the support of AT&T and Frontier network services to test all incoming 911 trunks and related PSAP transfer codes.

5.23.17 Acceptance - Measurable Testing Processes
Testing must include a measurable testing process for each functional and technical aspect of the specifications listed in the CONTRACTOR’s proposal and system performance measurements based on the telephone activity to date in the PSAP. This testing serves as a sign-off process for payment to the successful CONTRACTOR.

5.24.1 Warranty - Minimum Warranty Requirements
The CONTRACTOR must describe the manufacturer’s warranty as well the associated labor warranty. The warranty shall be a minimum of 1 year. Options for two-, three-, four-, five- and six-year 24x7x365 maintenance contract coverage on all parts and labor
for all 8 PSAPs and 1 Backup PSAP must also be included.

5.24.2 Maintenance - Maintenance Tier 1 and Tier 2
CONTRACTORS must define Tier 1 and Tier 2 maintenance plans. CONTRACTORS must provide individual maintenance pricing for each of the PSAPs. This must include detailed pricing for each of the PSAPs if the individual PSAP elected to perform a Tier 1 self-maintenance program with Tier 2 CONTRACTOR/manufacturer on-site support. CONTRACTORS must include in this response any pre-requests for Tier 1 self-maintenance programs, such as number of PSAP personnel requiring certification and PSAP scope of responsibilities, etc. The Tier 1 maintenance will be considered after the initial one-year warranty period.

CONTRACTORS must include annual Tier 1 maintenance costs, as well as maintenance costs for years two, three, four, five, and six, if available. Each PSAP may elect to migrate to full self-maintenance or may elect Tier 1 maintenance on an annual basis coterminous with the maintenance contract.

Maintenance costs should be at the component level as much as possible for the CPE system including ANI/ALI controllers, mapping, workstations, recorders and associated components.

5.24.3 Maintenance - Full Support
CONTRACTORS must specify pricing for continuing full CONTRACTOR repair and maintenance of the total CPE system after the expiration of the initial one-year warranty period. Such pricing must be for years two, three, four, five and six. CONTRACTORS must provide prior experience or history in maintaining similar 911 systems of similar size and scope to the COUNTY. Individual pricing is required. CONTRACTORS must define any requirements of the PSAP to perform any duties that could be maintenance in this response.

5.24.4 Maintenance - Remote Maintenance 24 x 7 x 365
CONTRACTORS must describe their process for remote monitoring and repair and maintenance. CONTRACTORS must describe how the facilities and staff will support this capability.

5.24.5 Maintenance - Response Time—Interruption of Service
If a failure interrupts the delivery of 911 calls, the responsible party must provide a qualified technician, on site, ready and equipped to handle the problem within two hours of notification by network provider. Within 15 minutes of notification, the CONTRACTOR should have remotely accessed the PSAP CPE to diagnose the problem and notified the PSAP of the corrective action. If a site visit is required, it should occur within two hours. The CONTRACTOR should have sufficient staff on duty to receive problem
reports from the network provider without delaying response.

5.24.6 Maintenance - Response Time—Non-interruption of Service
Response time for any equipment failure that does not interrupt delivery of 911 calls must be within eight hours of notification, with a qualified technician ready and equipped to handle the problem. The CONTRACTOR should have sufficient staff on duty to receive problem reports from the network provider without delaying response.

5.24.7 Maintenance - Level of Spares Availability—Two Hours and Eight Hours
The CONTRACTOR must detail the level of spare parts that will be available for service personnel to install within a two-hour timeframe from the initial receipt of service call. The CONTRACTOR is responsible for the repair and maintenance of the equipment.

CONTRACTOR must include one very robust regional spares kit designed to support redundant critical system components. The robust spares will be located at the data center. In addition to redundant system components, both data centers will house non-redundant recommended spares. In addition, two spare keyboards with mouse must be available on site at both data centers. One PC and monitor should be available at both data centers, in addition to any other workstation components that authorized on-site PSAP personnel could replace easily. This spare equipment should be stored in a manner that it will be ready for placing in service with minimum effort. It is not the intent of this requirement to purchase additional software licenses, only replacement hardware.

The CONTRACTOR must detail the level of spare parts that are available for service personnel to install within an eight-hour timeframe from the initial service call. The CONTRACTOR is responsible for the repair and maintenance of the equipment.

5.24.8 Maintenance - On-site Operating System and PSAP Databases Restoration
CONTRACTORS must configure all systems in a manner that both the operating system and user-defined databases are backed up and easily available should any server, PC, or software controlled device require a total field replacement.

5.24.9 Maintenance - Manufacturer Support Requirements
The proposed PSAP CPE must meet or exceed ten years of manufacturer support. A letter signed by a manufacturer company official (on official company letterhead) must be included in this proposal. The CONTRACTOR must support non-ANI/ALI controller or
telephone system manufactured equipment such as PCs, Microsoft OS, monitors, miscellaneous equipment, etc., for five years or more. The CONTRACTOR must acknowledge this specification in a letter included in this proposal from a company official from the proposing CONTRACTOR and manufacturer.

5.24.10 Maintenance - Mean Time between Failures (MTBF)
CONTRACTORs must include MTBF details to support the recommended spares.

5.24.11 Maintenance - Repair Logging/Reporting
CONTRACTORs must explain the process to log and report all trouble reports and outages to the PSAP. CONTRACTORs must describe the frequency, delivery method, and information provided to the PSAP to ensure proper response.

5.24.12 Maintenance - Repair Tracking Off Site
CONTRACTORs must describe the methods used to track system problems or errors and problem resolution timelines locally. Complete trouble history must be available when requested. Web access is highly desirable.

5.24.13 Maintenance - Repair Tracking On-site History Log
CONTRACTORs must describe the method used to maintain an on-site log at each PSAP that will track problems, resolutions, and upgrades performed both on-site and remotely. The affected PSAP must document actions taken on trouble tickets entered by the PSAP; the on-duty supervisor must receive notification of the resolution and action taken prior to departure of service personnel.

5.25.1 Training - System
The CONTRACTOR must describe all associated training that is included in the proposal. Training is required for system administrators, supervisors and call takers. The CONTRACTOR must also include any Tier 1 system maintenance training that is included should the COUNTY elect to perform tier 1 maintenance duties on the proposed CPE system hardware and software.

5.25.2 Training - User Requirements
The CONTRACTOR must provide training on all system functions prior to acceptance of the system. Training must include sufficient information and experience to familiarize personnel (administrative and supervisors) with all system functions, features, and operations for their particular assignments.

5.25.3 Training - Criteria Review
The COUNTY must review all training material and course presentation prior to the actual training. This requirement will allow the COUNTY PSAP and administrative personnel an opportunity to “fine tune” material and any presentations, if applicable.
5.25.4 Training - CPE System
The CONTRACTOR must provide detailed explanations and instructions on adding or modifying user software features, such as speed call and call-taker pass codes.

5.25.5 Training - Times/Instructors/Aspects
The time when the training courses are given is subject to the Counties’ approval. Qualified instructors must conduct training and may receive support from training aides, computer-based tutorials, or other individualized learning materials. The training must cover all aspects of the CPE system, MIS, mapping, recording, and GIS.

5.25.6 Training - User/Administrative/Supervisory
Administrative, user, and supervisor training must occur at each of the remote locations unless otherwise agreed to by the COUNTY.

5.25.7 Training - Tier 1 Maintenance
The CONTRACTOR must provide detailed explanations and instructions for performing maintenance diagnostic practices and system repair on the operational system or hardware and for addressing performance issues.

If this training is performed at an off-site location, the tuition must be included for a minimum of ten personnel. It is highly desired that an on-site Technical Training course be available for PSAP and COUNTY personnel because travel costs for multiple personnel can be prohibitive.

The CONTRACTOR must identify and provide costs for any troubleshooting techniques that would assist in supporting the CPE system. New hires or additional PSAP personnel may require maintenance training later. CONTRACTORs must include how they would support these requirements.

5.25.8 Documentation
The CONTRACTOR of the selected system must provide the COUNTY with a minimum of four sets of all available system documentation in CD or DVD format, as well as one set per host and remote location.

Required documentation is:

- Complete technical and maintenance information and documentation to support the system and support outlined in the final contract;
- Database structure diagram
- Operations instructions, including backup, recovery, and maintenance procedures
• User's manuals, to include the CPE system and any sub-systems;
• Any other documentation the CONTRACTOR considers applicable to the administration and use of the system under contract;
• Operating system manuals
• As-built drawings in the current AUTOCAD or Visio format or other agreed upon graphic format.
REFERENCES

Please provide at least five (5) references of similar size and complexity to the Washtenaw County multi-PSAP environment, including a timeline from contract signing to implementation and go-live, for each reference.

Please provide the following information for each reference (see Attachment E worksheet):

- Agency Name
- Agency Contact Information
- Date CPE Contract signed
- Value of CPE Contract
- Date of CPE implementation/go-live
- Brief description of the environment and hardware installed
- Brief description of the project management and implementation process
- Brief description of any issues and their respective resolution
COST PROPOSALS

Detailed, line item pricing, including multi-year payment plans.

Cost breakdown must include (see Attachment C worksheet):

- Hardware (if itemized, must include brief description; part numbers are optional)
- Software (if itemized, must include brief description of each module)
- Interfaces (if itemized, must include brief description of each interface)
- Custom Development (if applicable)
- Integration Services
- Training Services (include training all dispatchers and option for train the trainer)
- Implementation Services (include go-live support and post go-live follow-up)
- Project Management Services
- Maintenance (include warranty period and up to six years of CPE maintainability)

Pricing must be all inclusive for the first three years with maintenance costs for years four, five and six, or if a hosted solution is proposed the cost for the first year and costs for years two through six.
ATTACHMENT A - SAMPLE OF STANDARD PROVISIONS FOR CONTRACTS

If a contract is awarded, the selected contractor will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors of service to Washtenaw County such as the following:

SERVICE CONTRACT

(NAME OF CONTRACTOR)

AGREEMENT is made this ______ day of _____________, 2016, by the COUNTY OF WASHTENAW, a municipal corporation, with offices located in the County Administration Building, 220 North Main Street, Ann Arbor, Michigan 48107 (“County”) and (NAME OF CONTRACTOR) located at (CONTRACTOR’S ADDRESS) (“Contractor”).

In consideration of the promises below, the parties mutually agree as follows:

ARTICLE I - SCOPE OF SERVICES

The Contractor will (SPELL OUT SCOPE OF SERVICE)

ARTICLE II - COMPENSATION

Upon completion of the above services and submission of invoices the County will pay the Contractor an annual amount not to exceed (SPELL OUT DOLLAR AMOUNT).

ARTICLE III - REPORTING OF CONTRACTOR

Section 1 - The Contractor is to report to (DEPARTMENT HEAD TITLE) and will cooperate and confer with him/her as necessary to insure satisfactory work progress.

Section 2 - All reports, estimates, memoranda and documents submitted by the Contractor must be dated and bear the Contractor’s name.

Section 3 - All reports made in connection with these services are subject to review and final approval by the County Administrator.

Section 4 - The County may review and inspect the Contractor’s activities during the term of this contract.

Section 5 - When applicable, the Contractor will submit a final, written report to the County Administrator.

Section 6 - After reasonable notice to the Contractor, the County may review any of the Contractor’s internal records, reports, or insurance policies.
ARTICLE IV - TERM

This contract is for a three (3) year term (change as necessary) which begins on (MONTH, DAY, YEAR) and ends on (MONTH, DAY, YEAR) with an option to extend for two (2) additional one (1) year periods.

ARTICLE V - PERSONNEL

Section 1 - The contractor will provide the required services and will not subcontract or assign the services without the County’s written approval.

Section 2 - The Contractor will not hire any County employee for any of the required services without the County’s written approval.

Section 3 - The parties agree that all work done under this contract shall be completed in the United States and that none of the work will be partially or fully completed by either an offshore subcontractor or offshore business interest either owned or affiliated with the contractor. For purposes of this contract, the term, “offshore” refers to any area outside the contiguous United States, Alaska or Hawaii.

ARTICLE VI - INDEPENDENT CONTRACTOR

Contractor and the County shall, at all times, be deemed to be independent contractors and nothing herein shall be construed to create or imply that there exists between the parties a partnership, joint venture or other business organization. Contractor shall hold no authority, express or implied, to commit, obligate or make representations on behalf of the County and shall make no representation to others to the contrary.

Nothing herein is intended nor shall be construed for any purpose as creating the relationship of employer and employee or agent and principal between the parties. Except as otherwise specified in this contract, Contractor retains the sole right and obligation to direct, control or supervise the details and means by which the services under this contract are provided.

Contractor shall not be eligible for, or participate in, any insurance, pension, workers’ compensation insurance, profit sharing or other plans established for the benefit of the County’s employees. Contractor shall be solely responsible for payment of all taxes arising out of the Contractor’s activities in connection with this Agreement, including, without limitation, federal and state income taxes, social security taxes, unemployment insurance taxes and any other tax or business license fees as required. The County shall not be responsible for withholding any income or employment taxes whatsoever on behalf of the Contractor.

ARTICLE VII - INDEMNIFICATION AGREEMENT
The contractor will protect, defend and indemnify Washtenaw County, its officers, agents, servants, volunteers and employees from any and all liabilities, claims, liens, fines, demands and costs, including legal fees, of whatsoever kind and nature which may result in injury or death to any persons, including the Contractor’s own employees, and for loss or damage to any property, including property owned or in the care, custody or control of Washtenaw County in connection with or in any way incident to or arising out of the occupancy, use, service, operations, performance or non-performance of work in connection with this contract resulting in whole or in part from negligent acts or omissions of contractor, any sub-contractor, or any employee, agent or representative of the contractor or any sub-contractor.

**ARTICLE VII - INSURANCE REQUIREMENTS**

The Contractor will maintain at its own expense during the term of this Contract, the following insurance:

1. Workers' Compensation Insurance with Michigan statutory limits and Employers Liability Insurance with a minimum limit of $100,000 each accident for any employee.

2. Commercial General Liability Insurance with a combined single limit of $1,000,000 each occurrence for bodily injury and property damage. The County shall be added as "additional insured" on general liability policy with respect to the services provided under this contract.

3. Automobile Liability Insurance covering all owned, hired and nonowned vehicles with Personal Protection Insurance and Property Protection Insurance to comply with the provisions of the Michigan No Fault Insurance Law, including residual liability insurance with a minimum combined single limit of $1,000,000 each accident for bodily injury and property damage. For transportation services contracts, the County shall be added as additional insured on automobile liability policy with respect to the services provided under this contract.

Insurance companies, named insureds and policy forms may be subject to the approval of the Washtenaw County Administrator, if requested by the County Administrator. Such approval shall not be unreasonably withheld. Insurance policies shall not contain endorsements or policy conditions which reduce coverage provided to Washtenaw County. Contractor shall be responsible to Washtenaw County or insurance companies insuring Washtenaw County for all costs resulting from both financially unsound insurance companies selected by Contractor and their inadequate insurance coverage. Contractor shall furnish the Washtenaw County Administrator with satisfactory certificates of insurance or a certified copy of the policy, if requested by the County Administrator.

No payments will be made to the Contractor until the current certificates of insurance have been received and approved by the Administrator. If the insurance as evidenced by the certificates furnished by the Contractor expires or is canceled during the term of the contract, services and related payments will be suspended. Contractor shall furnish certification of insurance evidencing such coverage and endorsements at least ten (10) working days prior to commencement of services under this contract.
Certificates shall be addressed to the Washtenaw County c/o: INSERT DEPARTMENT & CR#__________, P. O. Box 8645, Ann Arbor, MI, 48107, and shall provide for 30 day written notice to the Certificate holder of cancellation of coverage.

ARTICLE IX - COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor will comply with all federal, state and local regulations, including but not limited to all applicable OSHA/MIOSHA requirements and the Americans with Disabilities Act.

ARTICLE X - INTEREST OF CONTRACTOR AND COUNTY

The Contractor promises that it has no interest which would conflict with the performance of services required by this contract. The Contractor also promises that, in the performance of this contract, no officer, agent, employee of the County of Washtenaw, or member of its governing bodies, may participate in any decision relating to this contract which affects his/her personal interest or the interest of any corporation, partnership or association in which he/she is directly or indirectly interested or has any personal or pecuniary interest. However, this paragraph does not apply if there has been compliance with the provisions of Section 3 of Act No. 317 of the Public Acts of 1968 and/or Section 30 of Act No. 156 of Public Acts of 1851, as amended by Act No. 51 of the Public Acts of 1978, whichever is applicable.

ARTICLE XI - CONTINGENT FEES

The Contractor promises that it has not employed or retained any company or person, other than bona fide employees working solely for the Contractor, to solicit or secure this contract, and that it has not paid or agreed to pay any company or person, other than bona fide employees working solely for the Contractor, any fee, commission, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the award or making of this contract. For breach of this promise, the County may cancel this contract without liability or, at its discretion, deduct the full amount of the fee, commission, percentage, brokerage fee, gift or contingent fee from the compensation due the Contractor.

ARTICLE XII - EQUAL EMPLOYMENT OPPORTUNITY

The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, sexual orientation, national origin, physical handicap, age, height, weight, marital status, veteran status, religion and political belief (except as it relates to a bona fide occupational qualification reasonably necessary to the normal operation of the business).

The Contractor will take affirmative action to eliminate discrimination based on sex, race, or a handicap in the hiring of applicant and the treatment of employees. Affirmative action will include, but not be limited to: Employment; upgrading, demotion or transfer; recruitment advertisement; layoff or termination; rates of pay or other forms of compensation; selection for training, including apprenticeship.
The Contractor agrees to post notices containing this policy against discrimination in conspicuous places available to applicants for employment and employees. All solicitations or advertisements for employees, placed by or on the behalf of the Contractor, will state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, sexual orientation, national origin, physical handicap, age, height, weight, marital status, veteran status, religion and political belief.

**ARTICLE XIII - LIVING WAGE**

The parties understand that the County has enacted a Living Wage Ordinance that requires covered vendors who execute a service or professional service contract with the County to pay their employees under that contract, a minimum of either $12.93 per hour with benefits or $ 14.43 per hour without benefits. Contractor agrees to comply with this Ordinance in paying its employees. Contractor understands and agrees that an adjustment of the living wage amounts, based upon the Health and Human Services poverty guidelines, will be made on or before April 30, 2017 and annually thereafter which amount shall be automatically incorporated into this contract. County agrees to give Contractor thirty (30) days written notice of such change. Contractor agrees to post a notice containing the County's Living Wage requirements at a location at its place of business accessed by its employees.

**ARTICLE XIV - EQUAL ACCESS**

The Contractor shall provide the services set forth in Article I without discrimination on the basis of race, color, religion, national origin, sex, sexual orientation, marital status, physical handicap, or age.

**ARTICLE XV - OWNERSHIP OF DOCUMENTS AND PUBLICATION**

All documents developed as a result of this contract will be freely available to the public. None may be copyrighted by the Contractor. During the performance of the services, the Contractor will be responsible for any loss of or damage to the documents while they are in its possession and must restore the loss or damage at its expense. Any use of the information and results of this contract by the Contractor must reference the project sponsorship by the County. Any publication of the information or results must be co-authored by the County.

**ARTICLE XVI - ASSIGNS AND SUCCESSORS**

This contract is binding on the County and the Contractor, their successors and assigns. Neither the County nor the Contractor will assign or transfer its interest in this contract without the written consent of the other.

**ARTICLE XVII - TERMINATION OF CONTRACT**

Section 1 - Termination without cause. Either party may terminate the contract by giving thirty (30) days written notice to the other party.
Section 2 - In the event of any breach or default by the County or the Contractor of the terms and conditions of this Agreement, the party not in default will give written notice to the party in default specifying the acts and/or omissions constituting the alleged default or breach; if within fifteen (15) working days after issuance of such notice, the party in default has failed to cure such default, then in that event, the party not in default may terminate this Agreement and exercise such other rights as are provided herein and by law for breach of contract; provided, however, that if the alleged default can be cured by the performance of work or repairs or by some act, the performance of which requires a period of time, such default will be determined to have been cured if, within the above-referenced fifteen (15) working days, the party allegedly in default has begun to cure the default and continues until such default is cured within a reasonable time.

ARTICLE XVIII - PAYROLL TAXES

The Contractor is responsible for all applicable state and federal social security benefits and unemployment taxes and agrees to indemnify and protect the County against such liability.

ARTICLE XIX - PRACTICE AND ETHICS

The parties will conform to the code of ethics of their respective national professional associations.

ARTICLE XX - CHANGES IN SCOPE OR SCHEDULE OF SERVICES

Changes mutually agreed upon by the County and the Contractor, will be incorporated into this contract by written amendments signed by both parties.

ARTICLE XXI - CHOICE OF LAW AND FORUM

This contract is to be interpreted by the laws of Michigan. The parties agree that the proper forum for litigation arising out of this contract is in Washtenaw County, Michigan.

ARTICLE XXII - FEDERALLY REQUIRED PROVISIONS

When applicable, the following provisions shall apply to contracts funded in whole, or in part, by federal award monies:

For all prime construction contracts exceeding $2,000.00 awarded by non-Federal entities, Contractor shall comply with the Davis-Bacon Act (40 U.S.C. 3141—3144, and 3146—3148), as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). Contractor must pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, Contractor must be paid wages not less than once a week. The parties agree that the County will report all suspected or reported violations of this provision to the Federal awarding agency.

In addition, Contractor must also comply with the Copeland “Anti-Kickback Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Bidding or Public Work Financed in Whole or in Part by Loans or Grants from the United States”) which prohibits Contractor or Subrecipient from inducing, by any means, any person employed in the construction, completion or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. County shall report all suspected or reported violations to the Federal awarding agency.

If this contract exceeds $100,000.00 and involves the employment of mechanics or laborers, Contractor shall comply with U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). To that extent, Contractor must compute the wages of each mechanic and laborer on the basis of a standard forty (40) hour work week with hours exceeding this standard to be paid at one and one half the standard hourly rate. In addition, Contractor agrees that no mechanic or laborer shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous.

If the Federal award funding this Agreement meets the definition of “funding agreement” under 37 CFR, Sec. 401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental or research work under that funding agreement, the recipient or subrecipient must comply with 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.

If this Agreement and/or subgrant exceeds $150,000.00, Contractor shall comply with all applicable standards, orders and/or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). The parties agree that the County shall report all violations of these Acts to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (“EPA”).

Contractor agrees to comply with all mandatory standards and policies relating to energy efficiency which are contained in the State of Michigan’s energy conservation plan issued in compliance with the Energy Policy and Conservation Act. (42 U.S.C. 6201).

Contractor agrees to comply with the provisions of the Byrd Anti-Lobbying Amendment (31 U.S.C. Section 1352), which prohibits the use of federal funds by the Contractor or subcontractor of a Federal contract, grant, loan or cooperative agreement to pay any person to influence or attempt to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress or an employee of
a member of Congress in connection with the federal funds awarded under this Agreement.

The parties agree that County and Contractor shall comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include, for those items where the purchase price exceeds $10,000.00 or the value of the quantity acquired by the preceding fiscal year exceeded $10,000.00, procuring only items designated in guidelines of the EPA at 40 CFR, Part 247, that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program to procuring recovered materials identified in the EPA guidelines.

ARTICLE XXIII - EXTENT OF CONTRACT

This contract represents the entire agreement between the parties and supersedes all prior representations, negotiations or agreements whether written or oral.

ARTICLE XXIV – ELECTRONIC SIGNATURES

All parties to this contract agree that either electronic or handwritten signatures are acceptable to execute this agreement.

ATTESTED TO: WASHTENAW COUNTY

By: ___________________________ By: ___________________________
Lawrence Kestenbaum (DATE) Gregory Dill (DATE)
County Clerk/Register County Administrator

APPROVED AS TO CONTENT: CONTRACTOR

By: ___________________________ By: ___________________________
(DEPARTMENT HEAD) (DATE) (CONTRACTOR’S NAME) (DATE)

APPROVED AS TO FORM:

By: ___________________________
Curtis N. Hedger (DATE)
Office of Corporation Counsel
Federal funded programs, whether they are receiving the funds directly or as a State pass through are exempt as mandated by the Federal Register 2 CFR Chapter I, Chapter II Part 200 section 200.319 Competition 7(b) effective December 26, 2014.

A. Washtenaw County Company – must meet all criteria listed:

1) Its headquarters is physically located within Washtenaw County, or it has been conducting business at a location with a permanent street address in the County on an ongoing basis for not less than one taxable year (12 consecutive months) prior to its bid or response to a Request for Proposals (RFP).

2) It has made payment of property taxes on real or personal property within the past year on property which is ordinarily needed to perform the proposed contract. Or it has leased property for its Headquarters or business with in Washtenaw County for more than one year (12 consecutive months).

3) It has been dealing for at least one year (12 consecutive months) on a regular commercial basis in the kind of goods or services which are the subject of the bid or proposal.

B. Michigan Company - must meet all criteria listed:

1) Its headquarters is physically located within the State of Michigan, or it has been conducting business at a location with a permanent street address in the State of Michigan on an ongoing basis for not less than one taxable year prior to its bid or response to a Request for Proposals (RFP).

2) It has made payment of property taxes on real or personal property which is ordinarily needed to perform the proposed contract. Or it has leased property for its Headquarters or business in the State of Michigan for more than one year (12 consecutive months).

3) It has been dealing for at least one year (12 consecutive months) on a regular commercial basis in the kind of goods or services which are the subject of the bid or proposal.
Local Vendor Certification Application & Affidavit

**Background:** To increase economic opportunity in Washtenaw County and the state of Michigan, the County provides a local vendor preference (when determining the award) as follows:

- **Washtenaw County based companies** - A 5% discount will be applied to bids greater than $5,000 and up to $200,000 and a 2% discount for bids over $200,000.

- **State of Michigan based companies** – A 3% discount will be applied to bids greater than $25,000 and up to $200,000 and a 1% discount for bids over $200,000.

Local vendor preference bid discount is used for the determination of award only. Full bid amount will be granted to vendor, if awarded.

**Instructions:** To qualify as a Washtenaw County or State of Michigan company, the following information must be provided:

1. **If you are not an existing Washtenaw County vendor,** complete the Washtenaw County Vendor Application available at: [http://www.ewashtenaw.org/government/departments/finance/purchasing/information-for-vendors/how-to-become-a-vendor](http://www.ewashtenaw.org/government/departments/finance/purchasing/information-for-vendors/how-to-become-a-vendor). The resulting e-mail confirmation must be printed and submitted.

2. **Provide proof that you are a company registered in the State of Michigan** by searching for your business on the State of Michigan Corporation Division Business Entity Search ([http://www.dleg.state.mi.us/bcs_corp/sr_corp.asp](http://www.dleg.state.mi.us/bcs_corp/sr_corp.asp)). The resulting **business Details page** must be printed and submitted.

3. **Provide proof that your local taxes are up to date** by searching for the municipality in which your business is located on the BS&A Software website ([https://is.bsasoftware.com/bsa.is/SelectUnit.aspx#W](https://is.bsasoftware.com/bsa.is/SelectUnit.aspx#W)) (may need to copy and paste link to open). After selecting the municipality, select “Tax Information Search” on the left, and search for your business. The resulting **Detailed Tax Information page** must be printed and submitted. **NOTE:** If you cannot find your municipality on the BS&A website, call the municipality’s Treasurer and request a Detailed Tax Information Form showing local business tax status. Submit this form instead.

4. **Provide the following Affidavit of Qualified Local Vendor** by filling out the attached affidavit.

All required application materials must be included in the RFP bid response.

For more information, contact: Tracy Murray, Administrative Coordinator/Purchasing

734-222-6845
Washtenaw County, Michigan Local Vendor Affidavit

Legal Name of Business____________________________________________________________ 

Federal Taxpayer Identification Number: ________________________________________________

Type of services provided:

☐ Construction    ☐ Professional Services    ☐ Goods & Services

Physical Address of Business Headquarters and/or Permanent Street Address in Washtenaw County or State of Michigan:

________________________________________/________________________________________

Headquarters- Street Address    Permanent-Street Address

________________________________________/___________________________________________

City, State & Zip    City, State, & Zip

Is this business headquartered in Washtenaw County?

☐ Yes    ☐ No

Has this business been dealing for at least one year (12 consecutive months) on a regular commercial basis in the kind of goods or services which are the subject of the bid or proposal?

☐ Yes    ☐ No

Are this business’s local and state tax filings up to date?

☐ Yes    ☐ No

If no, please explain: _____________________________________________________________

Any material misrepresentation of information in this document will be grounds for denial of certification and exclusion from all Washtenaw County contracts for a period of one (1) year.

The undersigned hereby affirms that the applicant firm believes it is qualified for certification as a Local Vendor, as set forth in the certification guidelines established by Washtenaw County. The undersigned agrees to hold Washtenaw County harmless in any claim arising out of this application or information provided by the applicant and agrees to indemnify Washtenaw County for any liability incurred in connection with this application or with the certification of the applicant firm. Further, the undersigned agrees to inform the County immediately of any changes that result in a change of the certification status of the firm.
Name of Business

Owner or Managing Partner, and Title

Name of Contact Person, and Title

Email Address for Contact Person

Phone Number for Contact Person

Signature of Owner or Managing Partner, and Title

Date

Washtenaw County Purchasing Department reserves the right to request additional documentation as deemed necessary.
<table>
<thead>
<tr>
<th>Signature of Authorized Signer</th>
<th>Date</th>
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<tbody>
<tr>
<td>Contact Name (Print)</td>
<td>Federal Tax Identification Number</td>
</tr>
<tr>
<td>Title</td>
<td>Company Name</td>
</tr>
<tr>
<td>Office Phone Number</td>
<td>Company Address</td>
</tr>
<tr>
<td>Cell Phone Number</td>
<td>City</td>
</tr>
<tr>
<td>Contact Email</td>
<td>County</td>
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</tbody>
</table>

The above individual is authorized to sign on behalf of company submitting proposal.

Proposals must be signed by an official authorized to bind the provider to its provisions for at least a period of 90 days. Signature page must be signed, boxes checked below, and returned as part of vendor proposal.

By signing this bid submission, I certify that I and/or my corporation, company, limited liability company, business association, partnership, society, trust or any other non-governmental entity, organization or group is not an “Iran linked business” as defined by P.A. 517 of 2012 (MCLA 129.311 et seq)(“Act”).

I understand that under the Act, an “Iran linked business means an individual or one of the above-listed groups who engages in investment activities in the energy sector of Iran, including, but not limited to, providing oil or liquefied natural gas tankers or products used to construct or maintain pipelines used to transport oil or liquefied gas for Iran’s energy sector or a financial institution extending credit to another person to engage in investment activities in Iran’s energy sector.

I further understand that “investment activity” is defined by the Act as an individual or one of the above listed groups that invests $20,000,000.00 or more in Iran’s energy sector or a financial institution that extends credit to another person, if that person uses the credit to engage in “investment activity” in Iran’s energy sector.
## ATTACHMENT C – PRICING WORKSHEET

<table>
<thead>
<tr>
<th>Cost Description</th>
<th>CPE On Premise</th>
<th>CPE Hosted</th>
<th>Voice Recorder On Premise</th>
<th>Voice Recorder Hosted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of all Hardware:</td>
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<tr>
<td>Total of all Software:</td>
<td></td>
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<tr>
<td>Total of all Interfaces:</td>
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<tr>
<td>Total Custom Software:</td>
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<tr>
<td>Total Integration Services:</td>
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<tr>
<td>Total Training Services:</td>
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<tr>
<td>Total Implementation Services:</td>
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<tr>
<td>Project Management Services:</td>
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<tr>
<td><strong>Total Solution Cost:</strong></td>
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<tr>
<td>(including 3 years of Maintenance)</td>
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<tr>
<td>Maintenance year 4:</td>
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<tr>
<td>Maintenance year 5:</td>
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<tr>
<td>Maintenance year 6:</td>
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<tr>
<td><strong>Grand Total Solution Cost:</strong></td>
<td></td>
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<td></td>
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<tr>
<td>(including 6 years of Maintenance)</td>
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</tbody>
</table>
ATTACHMENT D – LETTER OF INTENT TO BID; DUE APRIL 11TH, 2017

Washtenaw County Purchasing
Administration Building
220 N. Main Street Ann Arbor, MI 48104

Beth A. Duffy, CPPB, Senior Buyer
duffyb@ewashtenaw.org

REFERENCE: Letter of Intent to Bid

This is to notify Washtenaw County Purchasing that it is our present intent to submit a proposal in response to the request for a Customer Premise Equipment (CPE) and/or Voice Recorder solution, designed for Next Generation 9-1-1 (NG9-1-1) and shared emergency services IP network (ESinet) and telephony systems.

The individual to whom information regarding this RFP should be transmitted is:

Name: 
Company: 
Address: 
City, State, & Zip: 
Phone Number: 
Facsimile Number: 
E-mail Address*: 

Sincerely,

________________________________________

Name (Signature) ______________________

Date

Name (Printed) & Title of Representative

*Primary means for all communications.
**ATTACHMENT E – REFERENCES WORKSHEET**

<table>
<thead>
<tr>
<th>Agency Name:</th>
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<table>
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<tr>
<th>Agency Contact Information:</th>
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<table>
<thead>
<tr>
<th>Date CPE Contract Signed:</th>
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<tbody>
<tr>
<td>Date of CPE go-live:</td>
<td></td>
</tr>
<tr>
<td>Value of CPE Contract:</td>
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</table>

<table>
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<tr>
<th>Brief Description of the environment and hardware installed:</th>
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<table>
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<tr>
<th>Brief description of the project management and implementation process:</th>
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| Brief description of any issues and their respective resolution:         |                                                                 |
|                                                                          |                                                                 |
|                                                                          |                                                                 |
ATTACHMENT F – NETWORK REQUIREMENTS

The CONTRACTOR must comply with the new 911 network that Washtenaw County is in the process of upgrading to.

This new 911 network will be designed as an Emergency Services IP Network (ESinet). This network will be compliant with the concepts envisioned in various NENA “Next Generation 9-1-1” documents and TIDs. Voice traffic on the network will use session initiation protocol (SIP) and related protocols, such as Realtime Transport Protocol (RTP). Associated 911 call data (ANI/ALI data) on the network will be sent using telnet and http protocols. Both XML and ASCII text formats will be supported.

XML will be the preferred format on a going forward basis. Other IP protocols, such as FTP are possible and may be supported in various ways on a backwards compatible or unique case by case basis.

This new 911 network will initially be an IPV4 network. Most of the new 911 network will be addressed in private 10.x.x.x IP address space. Migration to the IPV6 network is anticipated at some point in the future, and connections should be capable of supporting the protocol.

In general, there will be no NAT, PAT, or other IP address manipulation used within the new 911 network. However, various internal security measures, such as the use of access lists in routers and other traffic monitoring, will be implemented. Various other security measures (in response to changing needs) will be implemented over the life of the network. The new 911 network will be an NG9-1-1 ready transitional network, supporting legacy interface methods to PSAP CPE equipment. The primary goal of the new 911 network is to preserve the overall integrity of the network. The PSAP and their CPE vendor will have to deal with the possible SIP or RTP issues that may arise from firewall manipulation of IP headers and packet content for non SIP friendly firewalls.

The reader should note that standards concerning NG 9-1-1 IP networks are still in development. These standards are evolving, and will continue to evolve. The new 911 provider will be committed to align the 911 network with all such future standards.
The following interface descriptions are available today.

**V-1 RFAI VoIP SIP interface over IPv4**

This interface is the “native” voice interface to the PSAP from the IPSR. RFAI is the interim VoIP interconnection standard intended for use until i3 is complete and ready for adoption as needed. It offers reduced hardware costs, maximum flexibility, and access to evolving features and services. Based on RFC-3261 and supported RFC’s covered by the NENA i3 draft and guided by the ATIS RFAI standard, RFAI uses G.711u for media and supplemental standard headers to convey emergency service signaling information. Currently only SIP over UDP is supported but TCP is available when necessary or for specific legs requiring it.

The CPE interface in this model represents a RFAUA or SIP UA that is used by the upstream IPSR to signal downstream the inbound emergency sessions. Based upon requirements, topology hiding can be used to anchor RTP media to the same signaling IP or to force path selection, e.g., traffic engineering. These anchors are virtual and can be applied as needed, scaling up to many instances per IPSR/ESRP installation.

The IPSR/ESRP supports a flexible model for egress, i.e., toward the CPE or gateway, trunks by called (R-URI/To Field) entity for SIP traffic separation policies. This functionality supports unique R-URI and other header manipulation for each provisioned resource placed in an egress group composed of the resource list and a weighted selection metric for each entry. A model that supports both serial and parallel forking and per resource along with robust manipulation of headers, invoking a B2BUA when necessary.

The IPSR/ESRP supports the following RFAI, SIP and other features:

1. **REGISTRAR**, not included by default nor recommended, each IPSR/ESRP can provide a mated registrar server when required.

2. **OPTIONS**, Heartbeat Monitor. The IPSR/ESRP will ping RFAUA’s with an OPTIONS message to determine reachability. Based upon topological awareness, destination resources are utilized according to predefined order of preference and reachability. The IPSR/ESRP will respond to server based OPTIONS messaging and forward OPTIONS messages destined for other UAs.

3. **Conferencing**. The IPSR/ESRP implements the conference-aware focus UA of RFC-4579. This gives the IPSR/ESRP the ability to support ad-hoc conferences within the context of all egress SIP trunking via an integrated B2BUA instance. Note: currently RFC-4575 is not supported; as well RFAI’s INFO model is on the roadmap.
4. TN-Based Routing. Ability to route on multiple number fields, e.g., ANI, p-ANI and ESRK/ESQK using intelligent SIP header analysis.

5. Legacy Trunk group based routing and awareness. Utilizing RFC-4904 or IP screening the IPSR/ESRP can simulate trunk group routing via properly marked URIs or SIP signaling source IP Addresses, e.g., call default routed by specific ingress gateway source IP.

6. Flexible SS7 support for NENA and other MSC to Legacy SR over SS7 protocol interworking’s via SIP-I/T supporting ingress gateway or softswitch. Requires prequalification of ingress Signaling Gateway Controller and its support of either SIP-I or SIP-T. See NENA 05-501 for Guidelines connecting MSC to SR over SS7.

7. Intuitive provisioning interface supported by flexible XML described UI. This allows for simple adaptation or augmentation of the standard ESRP Admin interfaces without impacting or disrupting other stable or currently used screens. The ESRP Admin installation will provision the IPSR/ESRP out of the box which is in itself a collection of default screens created for the stock release. These can be modified or extended to either replace or add functionality, e.g., if a third party ALL subsystem vendor exposed an interface via SOAP it can be consumed and provided integrated into standard IPSR/ESRP screens provided by the new 911 network provider. Any SOAP interface can be utilized if exposing simple record storage model via RPC. In the future RESTful will be supported. *it will require professional services or other contract to update custom screens for upgrade purposes. However the standard interface is considered stable and will stay backwards compatible in the current roadmap.

PSAP CPE implementing RFAUAs should implement two SIP UAs on diverse hardware for redundancy. Each RFAUA should be capable of registering one user id with two distinct SIP proxies concurrently when using optional registration. SIP parallel forking is supported for cases where there is no negative impact for signaling both RFAUAs simultaneously for a single call, i.e., SIP Loop.

The IPSR/ESRP supports signaling the CPE ring group entity or queue via R-URI and To Header called party indication in SIP user portion. This is a 10 digit number and is based on FIPS state and county designations and a reusable local 4 digit identifier. Example: 1260230001/Branch County MI) 1 is for locations within world-zone one, 26 is FIPS Code for State of Michigan and 023 is FIPS code for Branch County. The last four digits, 0001, would indicate the first agency assignment or some other identifier unique to the agency indicated. At a minimum 0001 should route to the default agency behind the RFAUA instance. Either RFAUA should be able to accept INVITEs sent from any proxy at any.

All 911 calls to the PSAP site can be sent as SIP invites arriving from any proxy to which the CPE UA is registered or is provisioned for non-registrar installations. The user ID should be a “pilot”
or “hunt group” number within a call distribution scheme used by the CPE vendor and the PSAP. That is, additional INVITEs should be accepted until all operator positions and incoming call queue slots are busy. At this point, the UA may return a busy, and the network will execute pre-defined alternate call routing to properly route the call.

Alternatively, the UA may take action independent of any pre-defined plan developed to forward the call if the PSAP wishes to implement (and be responsible for) their own call overflow plan.

All PSAP functionality, such as call barge in, supervisor monitoring, call recording and call detail logging, etc., are the responsibility of the CPE hardware and software, i.e., these functions are not intrinsically provided by the network.

MI911 CPE Data Interfaces

These interfaces listed below are presented from most to least desirable (in order). The least desirable interface is available for backward compatibility to “traditional” E911 Customer Premise (PSAP) Equipment (CPE):

D-1 Data Accessed via HTTP

This interface available for additional development and implementation.

This interface supports ALI, multi-media, and other 911 and Public Safety data. The data is retrieved via a URL from a web server. HTTP ALI data may be obtained by the ANI or pANI associated with the call as part of the URL. This is the preferred ALI retrieval system.

Alternatively, ALI data may be posted at a URI associated with the position answering the call. Note that location of ALI data without an ANI or pANI will require that the network know the associated answering position. For example, each answering position must have a distinct SIP user id. This method of ALI retrieval is intended to support “PSAP-in-the-phone” applications, such as an emergency or temporary PSAP location.

The new 911 network provider will provide standard web page templates that may populated by ALI data, suitable for direct display at the PSAP via a web browser. Alternatively, CPE vendors may provide custom templates.

An example of a web browser is Google Chrome, however, other browsers may be used. Since this is a web-browser-based data access method, it is expected than many nontraditional public safety applications, such a storm tracking on a map, or highway condition displays, will use this interface.
The precise details will be determined by the public safety application, not by the network. The purpose of listing this interface is to establish a future framework consistent with the concepts of NENA’s “future path”.

**D-2 PIDF ALI Data Attached to SIP Headers**

*(general and complete availability is pending completion of industry standards)*

The NENA i3 standard covers attachment of ALI information in body parts of SIP messages. This allows for ALI type information to be conveyed along with the call. The IPSR/ESRP currently supports interoperability where ALI information can be appended to INVITEs using a legacy connector for the ALI subsystem. However since critical timing aspects of wireless calls have not been aligned with the i3 concept, all routing must be performed traditionally and the initial call delivery will not wait for a response to the Initial ALI query.

The ALI (Automatic Location Information) associated with a call will be attached to the SIP Invite message as a MIME attachment. This signaling technique has been more clearly defined in IETF RFC 4119 (see also [http://tools.ietf.org/search/rfc4119](http://tools.ietf.org/search/rfc4119)). A full discussion is beyond the scope of this whitepaper.

The network supports this form of ALI interface.

Since SIP and the associated protocols support various media, including non-voice (video, text messaging, etc), as well as voice, we anticipate this type of “ALI” connection will be preferred for many end-user to PSAP communications.

The new 911 network provider proposes that the D-2 option, when combined with SIP as the preferred voice interface will be the preferred interface.

**D-3 XML Data Encapsulated in TCP Packets**

In this interface, the PSAP CPE, operating as a TCP client, uses the NENA V4.0 XML specification to query the ALI system, process and display the XML ALI response.

The 911 network implements a variation of NENA document 02-010; see also: [http://www.nena.org/technical-xml-schemas](http://www.nena.org/technical-xml-schemas) [These variations are available from PFN.]

The PSAP call position or ALI agent acts as a TCP client that connects to two redundant TCP ALI servers. The messages generally follow the examples in Exhibit 23 or the Best Practices document.
The network fully complies with the NENA standard, and has also expanded the feature set beyond the limitations of the NENA document based on real world experience.

For example, the 911 network adds additional XML tags, such as <FDAY> (“Formatted” DAY) that returns the day in the format yyyy-mm-dd, in addition to the NENA <DAY> format as described in the NENA document. The new 911 includes both tags in the ALI response string, so the PSAP can use the NENA form, and ignore the FDAY form, or vice versa.

The new 911 plans to evolve the XML ALI interface to comply with the latest versions as recommended by NENA. The present XML query and response string includes a “version” header that CPE can use to control the exact format version of the XML that is received. Examples of this are listed in the appendix to this white paper. This mechanism can be used to provide an orderly and seamless transition thru older, current or future XML versions as they evolve.

The D-3 interface is extensively used throughout the network.

**D-4 Traditional NENA ALI Queries and Text Responses Encapsulated in TCP Packets**

This interface is identical to the traditional RS-232 serial data ALI interface (described in D-5 below), except that the ALI string is sent in a TCP packet, rather than via a serial data interface.

Certain telecom standards refer to this as RFAI (request for assistance interface).

This connection arrangement is an alternative to legacy serial data connections at the PSAP site. The PSAP CPE is connected to the network via an Ethernet connection (or redundant connections, as required.) The PSAP system initiates a TCP connection to the ALI servers. In all other regards, operation is identical to a traditional NENA-type ALI interface.

The new 911 network can format the ALI response string on a per-site basis, as specified by the PSAP or the CPE vendor.

**D-5 Traditional NENA Serial Data ALI Links**

This interface is depreciated. It is supplied to provide legacy backward compatibility with traditional PSAP CPE. The new 911 network provides dual RS-232 serial ALI interfaces at the PSAP site. NENA 10-digit ALI query strings and text-only ALI responses are supported. The format of the ALI response can be configured on a site-by-site basis.

This interface differs from D-4 above only in that the new 911 network provides protocol/media converters to convert Ethernet/telnet connections to RS-232/serial data connections to support legacy equipment.