

Request for Proposal
Next Generation 9-1-1 System
For the
Counties of Southern Illinois 9-1-1 Association
Sealed Bid

1 Project description:

The Counties of Southern Illinois 9-1-1 Association, hereinafter referred to as CSI, is seeking bids for goods and services required to establish a regional Next Generation 9-1-1 System. We plan to establish an Emergency Services IP Network (ESIPNet) to connect 28 Public Safety Answering Points (PSAP) in an 18 county area. Bidders can propose to provide the hardware, software, communication devices and services that will provide the functionality requested in this RFP. They can also propose to build the ESIPNet. We prefer they propose a complete turnkey solution that includes the ESIPNet as well as the hardware, software, communication devices and services that will provide the functionality requested in this RFP. The network component of the project should be priced separately.

1.1 Procurement details:

Release Date: October 1, 2009
Questions Due By: 4:30 PM, October 13, 2009
Answers Posted Online By: November 20, 2009
Proposals Due By: 2:00 PM, December 1, 2009
Date of Bid Opening: December 2, 2009
Time of Bid Opening: 10:00 a.m.

Location of Bid Opening: Williamson County 911 Office
300 N. Park Ave.
Herrin, Illinois 62948

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Information to be provided by CSI: PSAP locations
2008 call volumes by PSAP

1 **Project Description:**

A brief summary of this project is included on the first page of this RFP.

1.1 **Procurement details:**

Procurement details and the date schedule are also on page one of this RFP. The bid opening will be public. Bid amounts will be disclosed at the bid opening. Bid results are a matter of public record. However, detailed cost break-downs are exempt until a bid is awarded. You may deliver your bid via: U.S. mail, Private express delivery service or hand delivery. Please provide two written copies of the proposal and a CD or DVD version of the proposal. In addition, an electronic version should be e-mailed to plustig@jc911.org.

1.2 **Evaluation period:**

We are tentatively planning to evaluate proposals between December 2 and December 16, 2009. The number of proposals will be narrowed down based on content and price. Bids with up front or continuing costs beyond the financial resources of the association membership will not be considered no matter how amazing the solution may appear. We will schedule opportunities for up to five vendors to make in-person presentations during January. You should plan on the proposal you submit in response to this RFP as being the only opportunity you will have to present your proposed solution to CSI. Once the choices are narrowed, CSI members may request site visits to locations where vendor systems are operational.

1.2.1 **Announcement of winning bid and contract negotiations:**

We expect to announce the winning bidder on March 17, 2010. However, we reserve the right to change this date if it is in the best interest of CSI. We expect that negotiations between CSI and the successful bidder will take 60 days. We are targeting contract signing for April 14, 2010. Negotiations will include an acceptable timetable for completion of the project.

1.3 **Cover letter:**

Your cover letter must include contact information for the person who was responsible for the preparation of your response. This is the person you want CSI to contact if there are any questions about your proposal. Include a mailing address, email address and telephone contact information.

1.3.1 **Bidder's qualifications, experience and references:**

Provide a full description of your organization's qualifications and experience related to the implementation of NG 9-1-1 Systems, if any, or other complex

mission-critical computer systems and IP networks. Provide the name and contact information (phone and email) of three individuals who can talk knowledgeably about your organization's products, services and performance with systems similar to the one you are proposing. Do not include any organization that would not consent to a site visit by CSI. Recent customers are preferred.

1.3.2 Subcontractor's background, qualifications and experience:

Our preference is to make a single award and sign a single contract with a single vendor that will provide all of the requested products and services. CSI will only enter into a contract with a prime contractor. If subcontractors are used, their performance is the responsibility of the prime contractor. If your proposal includes work to be performed by subcontractors, provide a full description of their experience related to the implementation of NG 9-1-1 Systems, if any, or other complex mission-critical computer systems and IP networks.

1.3.3 Executive summary:

Provide an Executive Summary that will stand alone for high-level discussions of your proposal. It should include the solutions you are offering, cost benefits and the value your organization will bring to the project. The target audience for the document would include 911 coordinators, sheriffs, police chiefs and chairmen of Emergency Telephone System Boards.

1.3.4 Narrative:

Provide a point-by-point narrative that states how you will provide the functionality outlined in this RFP. Specifically address each requirement and essential features for providing Next Generation 911 services.

1.3.5 Exceptions to requirements statement:

You may take exception to a requirement and propose what you feel is equivalent or better functionality. If your proposal does not fully meet any requirement, you must have a section in your proposal titled "Exceptions to Requirements" which must list all requirements not fully met and your proposed alternative solution. You should not construe our acceptance of an Exception to Requirements Statement as our willingness to accept proposals that do not meet all requirements. We allow an Exception to Requirements Statement out of recognition that a bidder may be able to provide a solution that meets or exceeds the functionality required, in a manner that we haven't considered. We recommend that your proposal meet all requirements.

1.3.6 **Public disclosable copy of your proposal:**

The successful proposal will become part of the contract and will become a matter of public record. Unsuccessful proposals will also become a matter of public record. If your response contains material that you consider to be proprietary and confidential, you may designate portions of your proposal as exempt from disclosure. Bidders who elect to exempt proprietary and confidential information must provide a public disclosable copy of your proposal with the text you believe is exempt from disclosure redacted. For each section that you want to exclude, you must provide justification, including the predicted harm you would suffer from the release of the identified material. Under no circumstances can you exempt the total cost of the proposal.

1.3.7 **Cost of response:**

Although we recognize that considerable expense and effort will be required to prepare a response to this RFP, you must bear all costs for the preparation of your response.

1.4 **Right to reject proposals:**

We will review all proposals to ensure they meet all requirements. We reserve the right to reject any and all offers, in whole or in part. We may deem the offer to be unsatisfactory as to: quality or quantity; delivery; price; service offered; non-compliance with the requirements or intent of this solicitation; lack of competitiveness or error(s) in specifications. Bids may also be rejected due to lack of available funds.

1.4.1 **Right to select partial proposal:**

In order to ensure the best possible system, CSI reserves the right to award a contract for a portion of the total system requested, based on the cost breakdown, and to procure the remaining components in a separate procurement.

1.4.2 **Evaluation criteria:**

Although cost is a major consideration, it is not the only evaluation criteria. CSI is looking for the solution with maximum functionality relative to cost. Both upfront costs and recurring costs are important.

1.4.3 **Intangibles:**

In addition to cost and content, CSI will consider intangibles such as: does the proposal give the sense of confidence that the bidder will be able to deliver the proposed system without significant issues; are the bidder's plan and assumptions realistic; does the bidder's experience and references support their claims; do they

clearly understand the goals for the project; is there a sense that a mutually beneficial long-term working partnership will result by awarding the contract to the bidder?

1.5 **Contract terms:**

The selected vendor(s) will sign a contract with CSI to provide the items named in their responses at the prices listed. Minimum support levels, as well as terms and conditions from this RFP and the vendor's response, will become part of the contract. As a multi-county government association, special or unique contract language may be required. This contract will be subject to review throughout its term. Cancellation may be considered upon discovery that a vendor is in violation of any portion of the agreement, including an inability by the vendor to provide the products, support and/or service offered in their response.

1.5.1 **Hold backs:**

CSI will hold back 25% of the implementation costs until after all acceptance tests are passed. We will pay ongoing operation/maintenance contract costs on a quarterly basis, billable per net 30-day payment terms at the beginning of each quarter of the State fiscal year. CSI may make an exception for third party support contracts that are only billed yearly; we will pay those on an annual basis billable per net 30-day payment terms.

1.5.2 **Delivery:**

All equipment pricing is to include delivery to the correct facility. This includes the correct data center or PSAP. CSI will not honor requests for extra delivery costs. All equipment must be delivered assembled, serviced and ready for immediate use (unless otherwise requested). Liability for product delivery remains with the contractor until properly delivered and installed.

1.5.3 **Quality:**

All products provided will be new and unused, unless otherwise stated. We will not accept factory seconds or remanufactured products, unless specifically requested. All products provided by the contractor must meet all federal, state and local standards for quality and safety requirements. Products not meeting these standards will be deemed unacceptable and returned to the contractor for credit at no charge to CSI.

2 **Description of system being replaced:**

CSI is an association of 18 Emergency Telephone System Boards. One system has 4 PSAPs, one has 3 PSAPs, five have 2 PSAPs and the rest are single PSAP operations. In the multi-PSAP environments, each backs up the other(s). In the

single PSAP systems, a neighboring county PSAP provides backup. However, we lack interconnection between the various systems. There are a total of 28 PSAPs with 62 dispatch positions. The larger PSAPs have two manned positions but many staff only one position at a time. At any given time, about 44 positions are manned and no system has knowledge of what the other systems are doing. Emergency calls from both wireline and wireless callers enter the system over CAMA trunks from Verizon's selective routers at either Carbondale or Olney. Illinois law currently prohibits anyone other than local exchange carriers from routing 9-1-1 calls. Legislation has been drafted to address this issue. The current PSAP locations and number of manned positions should not change as a result of this project.

2.1 **Identification of components that may be preserved:**

We believe that many of the components in our current systems can be reused in our NG 9-1-1 System. Bids should include all new components but CSI reserves the right to reuse existing components as a cost-saving measure if it does not detract from the performance of the system. For example, many PSAPs already have new CPUs, flat panel monitors, laser printers, recording equipment and IP based PBX systems that would be reusable in the new environment. CSI will negotiate with the successful bidder on which items can be reused and at what cost savings. Six of the PSAPs have existing IP connectivity to the others in their county system ... this may also be reusable.

2.2 **Project goals:**

2.2.1 **Regional backup capability:**

Southern Illinois sits on the New Madrid earthquake fault zone, it is in a tornado alley and is surrounded by major rivers with levees that have failed in the past causing major flooding. We also have major interstate highways, natural gas pipelines and trains that carry hazardous materials travelling throughout the region. A major disaster can quickly overwhelm a small PSAP. The ability for PSAPs to back each other up in a major emergency is one of our primary goals. We want all 28 PSAPs to be able to communicate and backup each other.

2.2.2 **Flexible locations:**

There are many reasons why we may not be able to answer calls in one of more PSAPs: severe weather, floods, terrorism, pandemic flu, etc. We need the flexibility to bring the 9-1-1 system to our call-takers, rather than bring our call-takers to the 9-1-1 system.

2.2.3 **Cost sharing:**

In Illinois, Enhanced 9-1-1 is funded on the county level through a surcharge on landline telephones. In addition, the state collects and distributes wireless surcharge income from cellular bills. When customers switch from landline phones with surcharges of up to \$3.00 to cell phones with surcharges of 73 cents, local 911 systems lose money. Small rural counties, such as ours, could never afford a next generation system on their own.

2.2.4 **Accommodate the transition from landline service:**

Fewer than 50% of our 9-1-1 calls come from traditional landline phone subscribers, yet we have a 9-1-1 system built for landline customers and modified to handle other types of calls. We feel that it is time to have a 9-1-1 system so that citizens have access to a 911 system that can take a call from any device, anywhere at any time.

2.2.5 **Technological compatibility:**

CSI has been selected by the NENA National Partners Program as a national pilot project for next generation technologies. As new devices are invented and technology is adapted for use in emergency services, we want to be able to accept those calls. SMS, vehicle telematics and other emerging technologies will be used to transmit information about emergencies in the future. Our system must be able to accommodate them.

2.2.6 **Long-term viability:**

Ideally, we would like this procurement to be our last for many years. We are looking for a long-term partnership with an organization that shares our vision for 9-1-1, has the technical and financial resources to meet the challenges facing 9-1-1 and a culture of cooperation and collaboration to work with us as an equal partner.

2.2.7 **GIS based call routing:**

Current wireless technology does not provide adequate means to route calls to the correct PSAPs. This results in response delays because of transfers. Traditional MSAGs work to a degree but we want to have GIS (X-Y coordinate) routing to assure all calls, wherever possible, are answered at the correct PSAP.

2.2.8 **Turnkey solution:**

We are looking for a comprehensive turnkey solution that provides functionality: call delivery, call handling, map display, landline and wireless caller location and

management information. We also need project management, training and ongoing operational support.

2.3 **Project monitoring:**

The winning bidder will be required to appoint a project manager accountable to our project manager. In the planning and deployment phases of the project, your project manager will have to be available for weekly status meetings. After deployment, status meetings will be held less frequently.

2.3.1 **Narrative and diagrams:**

Your proposal must include a detailed narrative description of your proposed system. Your proposal must support the narrative descriptions with detailed diagrams.

2.3.2 **Bandwidth:**

It is a requirement that your proposal list the minimum bandwidth required to ensure acceptable performance and sound quality. Describe the requirements for each section of the network, i.e. between the data centers, between the data centers and the call-takers, etc.

3 **System-wide functionality:**

3.1 **System sizing:**

The system must be sized to handle two and one-half (2.5) times the maximum call volume seen on the current system.

3.1.2 **Five-nines reliability:**

It is a requirement that your proposed system must provide 99.999% reliability. The system must be able to deliver calls, as designed (i.e. with mapping, ALI, recordings, etc), 99.999% of the time. Individual components do not have to provide 99.999% uptime as long as the system as a whole is able to do so.

3.1.3 **No scheduled downtime:**

It is a requirement that your proposed system not require down time for routine or anticipated maintenance. Individual components may have downtime for routine maintenance; however, the system as a whole must remain operational and able to deliver calls as designed.

3.1.4 **Redundancy:**

It is a requirement that any redundant components in your proposal must provide redundancy automatically, without human intervention. You must provide a documented method to periodically test redundancy. Describe how your proposed system will meet this requirement.

3.1.5 **Diversity:**

It is a requirement that, to the degree possible, your proposed system must take advantage of facility diversity. Describe how your proposed system will meet this requirement. You must identify areas where diversity is recommended, but not provided, either because it is not available or for other reasons.

3.1.6 **Single points of failure:**

It is a requirement that your proposed system eliminate single points of failure that would prevent delivery of incoming 9-1-1 calls to a call-taker. Describe how your proposed system will meet this requirement.

3.1.7 **Fail-over:**

It is a requirement that your proposed system must be able to maintain normal operations in a fail-over scenario. For example, if you plan to meet the requirements with the use of two data centers, then the entire system must be operational with a single data center. It is not acceptable to have a portion of the call-taking capacity dedicated to one component with the intent of operating with reduced capacity if that component fails. Describe how your proposed system will meet this requirement. Your description must describe what would happen to calls in progress in fail-over scenarios.

3.2 **Information assurance and security framework:**

Describe how your solution will meet the following requirements.

3.2.1 **User management:**

It is a requirement that your proposed system must centralize user management, ideally by interfacing with commonly available directory services such as Microsoft Active Directory, or LDAP. Users must have a single login throughout the system. The system must maintain a historical record of all logins.

3.2.2 **User authentication:**

It is a requirement that your proposed system must uniquely identify all users. All users must be authenticated with a password, at a minimum. The use of strong authentication, such as one-time passwords, tokens, biometrics, etc. is encouraged.

3.2.3 **Passwords:**

If you are proposing the use of passwords, it is a requirement that your proposed system must store passwords in a manner that does not allow for decryption (hashed). You must provide a method to allow users to change their own passwords. You must provide a method to set and enforce a password policy, i.e. length, complexity, aging, etc. Your system must not transmit passwords in clear text.

3.2.4 **Data protection:**

It is a requirement that your proposed system must provide adequate safeguards to ensure that data will not be lost.

3.2.5 **Least privilege:**

It is a requirement that your proposed system must support the concept of “least privilege.” This means that system administrators must be able to set up access controls so that user access can be restricted to the minimum required.

3.2.6 **Role based access control:**

It is a requirement that your proposed system must provide role based access controls (RBAC). With RBAC, groups are created and users are placed in groups to control their access. Permissions applied to system objects and resources such as functionality (i.e. the ability to perform a manual query) or data (i.e. the recording of a specific call) allow or deny access to an object or resource for groups and users. There must be the capabilities throughout the system to selectively allow or deny users, or groups, the ability to perform certain functions such as monitor users, change settings, access logs and recordings, etc. This is similar to the access control methods used in the Windows, UNIX, and Linux operating systems.

3.2.7 **Traffic engineering:**

It is a requirement that your proposed system must provide robust network security that limits network traffic to only that which it is engineered for and expected. Traffic which is not expected, i.e. protocols that are not necessary to provide the required functionality or traffic between devices which have no need

to communicate with each other, must be blocked. This is intended to defend against a day-one attack, as well as to ensure system performance and reliability.

3.2.8 **Monitoring:**

It is a requirement that your proposed system must incorporate monitoring that will detect abnormal traffic indicative of a security problem, such as a breach or compromised system. Describe how your proposed system will meet this requirement.

3.2.9 **Encryption:**

It is a requirement that data in transit over WAN connections must be protected by 128 bit or higher AES encryption. It is desirable that your proposed system encrypt all data communications, including data at rest.

3.2.10 **Malware protection:**

It is a requirement that your proposed system must address threats from malware.

3.2.11 **External access:**

It is a requirement that your proposed system must provide secure external access over the Internet. This will be used for system administration and call-taker access.

3.2.12 **Backups and emergency power:**

It is a requirement that your proposed system must include provisions to regularly backup system data and system configurations. It is a requirement that your proposed system must remain operational in the event of power outages of unknown length.

3.3 **Services:**

3.3.1 **Time synchronization:**

It is a requirement that every device in your proposed system that has time keeping functionality must be synchronized to a common time source.

3.3.2 **Centralized control:**

It is a requirement that every device in your proposed system must be manageable from a central location.

3.3.3 **Dashboard:**

It is a requirement that your proposed system must include some type of dashboard which provides real time information on system activity. At a minimum, the dashboard must provide information on call volume and staffing levels.

3.3.4 **Change management:**

It is a requirement that your proposed system must include comprehensive change management processes to ensure that all changes made to the system are engineered, tested and documented.

3.4 **Call-taking functionality:**

3.4.1 **Interfaces to the PSTN:**

Describe how your proposed system will interface to the PSTN. Currently calls are delivered into the system over CAMA trunks. Your proposed system must accept call delivery over CAMA trunks. We anticipate that other options will be available in the near future. Your proposed system must also be able to accept call delivery via SS7 and PRI. List any other interfaces to the PSTN that your proposed system can handle.

3.4.2 **i3 compliance:**

Your proposed system must accept calls via an IP connection that is compliant with the version of the NENA i3 standard in effect at the time of system implementation.

3.4.3 **Call flow:**

You must provide a detailed description of call flow through your proposed system. Describe how calls enter the system, how the correct PSAP/position is selected and how the call is delivered to the proper location. Provide details on whether PSAP/position selection is table based or GIS based, or both.

3.4.4 **Virtual PSAPs:**

It is a requirement that your proposed system must support virtual PSAPs. A virtual PSAP is one where call-taking positions can be grouped regardless of their physical location.

3.4.5 **Call routing:**

It is a requirement that your proposed system must provide multiple methods to select the proper destination for incoming calls. Land line calls should be routed by ESN to the correct PSAP. Wireless and VoIP calls should be routed by latitude-longitude to the correct PSAP. Intelligent software should be programmed to choose the next best PSAP if all circuits are busy at the correct PSAP. Unanswered calls should roll over to the next PSAP in the table until they are answered.

3.4.6 **Connectivity to call-takers:**

It is a requirement that you must provide a method to deliver calls to call-takers. Currently, we have twenty-eight active PSAPs. Describe in detail the infrastructure you would put in place for this purpose. Include anticipated call delivery times. Call delivery time will be the greater of the time to make the voice connection and the time to provide the ANI/ALI data. These will become part of a service level agreement in the contract with the winning bidder. It is important that you address resiliency and reliability.

3.4.7 **Call handling equipment:**

It is a requirement that your proposed system must include equipment for call-takers to use when answering 9-1-1 calls. Describe in detail the equipment that you are proposing for this purpose.

3.5 **System requirements:**

The following sections deal with requirements for the system. Describe how your proposed system will meet these requirements.

3.5.1 **Interoperability:**

We anticipate using an automated emergency procedure knowledge base to provide instructions for call-takers. It is a requirement that your proposed system must co-exist with this type of software.

3.5.2 **Sound quality and adjustments:**

It is a requirement that your proposed system must accurately reproduce the sounds transmitted by the devices connected to the call. The system cannot introduce echo, static, interference, delay or anything else that reduces the ability of the parties on the call to communicate with each other. We recognize that there may be external influences to sound quality such as PSTN circuits, cordless phones, cell phones, etc.; however, your proposed system must provide a method to determine that a reduction in sound quality is caused by an external source. It

is a requirement that your proposed system must allow call-takers to easily adjust both transmit and receive volume.

3.5.3 **Instant recall recorder:**

It is a requirement that your proposed system must provide call-takers with a method to play back the recording of any call, provided they have the proper permissions. They must be able to play back a call that is still in progress.

3.5.4 **Interface customization:**

It is a requirement that a user with proper permissions must be able to customize the user interface. These permission settings should follow the user wherever he or she logs on.

3.5.5 **Answering calls:**

It is a requirement that the call handling application in your proposed system must provide both audible and visual methods to notify the call-taker of an incoming call. Call-takers must be able to hear the audible alert with or without a headset on. Call-takers must be able to answer a call with either a mouse or a keyboard. Any calls in queue shall be easily identified and retrieved. There must be no possibility that a call can be in a queue if there is an available call-taker anywhere in the system. By default, answering a call shall result in the oldest call being picked up.

3.5.6 **Call transfer:**

It is a requirement that your proposed system must allow a call to be transferred to any other PSAP in the system. It is a requirement that your proposed system must include a contact list that lets call-takers with proper permissions to dial numbers with a single action. The list must allow the call-taker to sort and filter the list in various ways to allow for the rapid selection of the proper contact.

3.5.7 **Manual dialing:**

It is a requirement that your proposed system must provide a method to allow a call-taker to manually dial any number. The capability to dial a number while on a call must be available (for example: to navigate through auto-attendant options).

3.5.8 **ANI-ALI display:**

It is a requirement that your proposed system must provide a NENA compliant ANI/ALI display.

3.5.9 **Forced disconnect:**

It is a requirement that your proposed system must allow call-takers to release any call at any time.

3.5.10 **Dial back:**

It is a requirement that your proposed system must include a way to dial back a disconnected caller with a single action.

3.5.11 **Comments by number:**

It is a requirement that your proposed system must allow call-takers to enter comments that will be stored by call back number. It should provide an easy to use method for viewing the comments displayed when an additional call is presented from that number.

3.5.12 **History by number:**

It is a requirement that your proposed system must maintain call history by call back number and provide an easy to use method for viewing the history data.

3.5.13 **Manual ALI query:**

It is a requirement that your proposed system must support manual (reverse) ALI queries based on the user's permissions. All manual queries must be logged.

3.5.14 **Call history display:**

It is a requirement that your proposed system must maintain a log of all calls. The call log must allow call-takers to recall and redisplay the ANI/ALI information of any call.

3.5.15 **Automatic ALI rebid:**

It is a requirement that your proposed system must provide automatic ALI rebid on wireless calls. The rebid timer must be configurable.

3.5.16 **Monitoring and barge-in capabilities:**

It is a requirement that your proposed system must include provisions for the silent monitoring of workstation audio from another workstation. If necessary, the monitoring workstation must be able to barge-in and enter into a 3-way conference.

3.5.17 **Muting:**

It is a requirement that your proposed system must allow call-takers to block the caller from hearing the remaining parties on the call. The call-taker should have the ability to selectively mute any party on a call.

3.5.18 **Conferencing:**

It is a requirement that your proposed system must allow each call-taking position to be able to conference in up to five additional parties for a total of seven (five, plus caller and call-taker). The call-taker must be able to selectively drop conferenced parties. The call recording functionality must capture the audio of each party.

3.5.19 **Auto answer:**

It is a requirement that your proposed system must support pre-recorded greeting and auto answer features.

3.5.20 **Hold:**

It is a requirement that your proposed system must support placing calls on hold. There must be some sort of reminder that alerts the call-taker after an administrator-configurable timer has expired when a call is on hold. Describe how your proposed system will meet this requirement. Callers who are on hold should hear a message periodically reminding them that they are on hold and that they should stay on the line. When a call on hold disconnects, there should be an alarm to alert the call-taker. The alarm should display the call back number.

3.5.21 **TTY:**

It is a requirement that your proposed system must fully support all ADA laws with integrated TDD/TTY features at each call-taking position. TDD/TTY calls must have the same level of functionality as voice calls. TDD/TTY detection must be automatic. The entire conversation must be logged and easily retrieved. The TDD/TTY interface must support the creation and use of pre-programmed messages. The system must be Hearing Carry Over (HCO) and Voice Carry Over (VCO) compliant.

3.5.22 **Broadcast messaging:**

It is a requirement that your proposed system must provide a method for call-takers to communicate with each other through some sort of broadcast messaging system.

3.5.23 **Future issues:**

It is a requirement that your proposed system must be designed to accommodate future forms of emergency calling. These may include: SMS messaging, instant messaging, cellular text messaging, streaming video, satellite personal locator beacons and future development in TTY/TDD type devices.

3.5.24 **Abandoned call handling:**

It is a requirement that your proposed system must alert call-takers to abandoned calls and allow callback with a single action.

3.5.25 **Discrepancy handling:**

Your proposed system should allow call-takers to create ALI and RNF discrepancies electronically. Describe how your proposed system will facilitate this.

3.5.26 **Call logging:**

It is a requirement that your proposed system must provide extensive logging of call-handling activities. The logs must be accessible from a centralized location. At a minimum, logs must include the following: event start date/time, event end date/time, ANI, if applicable, ALI, if applicable, where the call was transferred to, position, logged in user.

3.5.27 **CAD interface:**

It is a requirement that your proposed system must support the transfer of ANI/ALI information to external systems, such as CAD systems. This requirement includes providing a method to transfer the data in a standard format to multiple locations based on the destination of the call transfer.

3.5.28 **Mapping:**

It is a requirement that call-taking positions must provide a map display that is integrated with the call-handling software. Any call that has location information must be displayed on the map. The map display must allow the call-taker to zoom, pan and search.

3.6 **Data requirements:**

It is a requirement that your proposed system must be able to use or import our existing GIS data. Some of our systems currently maintain GIS data in ESRI's ArcGIS 9.x/ArcEditor, others use Arcview 3.x shape files.

3.6.1 **Search functionality:**

It is a requirement that your proposed system must provide robust search functionality in the mapping display. At a minimum, call-takers should be able to search based on address, landmarks, intersections and geographic coordinates.

3.6.2 **Selective transfer information:**

It is a requirement that your proposed system must let call-takers access selective transfer information from the map display.

3.6.3 **Discrepancy handling (GIS):**

Your proposed system should allow call-takers to create GIS discrepancies from the map display.

3.6.4 **Phase 1 wireless:**

It is a requirement that your proposed system must be able to map Phase 1 wireless calls and provide a visual indication of the area that the caller is calling from.

3.6.5 **Phase 2 wireless:**

It is a requirement that your proposed system must be able to map Phase 2 wireless calls and provide a visual indication of the area that the caller is calling from, based on confidence and reliability factors.

3.7 **Reporting:**

In general, all reports must be available both in hard copy and in commonly used electronic formats.

3.7.1 **Call-taker activity:**

It is a requirement that your proposed system must include a call-taker activity report. The report must be filterable and sortable by relevant fields such as date/time, PSAP and call-taker ID. The report must be able to show all call-taker activity, such as login, logout, busy, not busy, on a call, etc.

3.7.2 **Operations:**

It is a requirement that your proposed system must include a comprehensive operations report. The report must be filterable and sortable by relevant fields such as date/time, PSAP, class of service, etc. The report must be able to show all system activity including calls by PSAP, calls by class of service, calls by date,

calls by time, calls by day of week, etc. Statistics such as average time to answer and average call length must be available.

3.7.3 **Call-takers on duty:**

It is a requirement that your proposed system must include a call-taker on duty report. The report must be filterable and sortable by relevant fields such as date/time, PSAP and call-taker ID. The report must be able to show staffing levels and call-takers on duty for a given time period.

3.7.4 **Event log:**

It is a requirement that your proposed system must include an event log report. The report must be filterable and sortable by relevant fields such as date/time, PSAP and call-taker ID. The report must be able to show recorded events.

3.7.5 **Ad hoc reporting:**

It is a requirement that your proposed system must include a comprehensive ad hoc reporting tool.

3.8 **Database management:**

It is requirement that your proposed system must allow CSI 9-1-1 staff the ability to manage the database.

3.8.1 **Database functionality:**

It is a requirement that your proposed system must provide ANI/ALI database functionality to maintain the records associating each landline telephone with a valid address. The ALI database must provide for automatic (hands-off) import of files from the telephone service providers. All errors in customer files must be transmitted automatically and electronically to any affected telephone service provider. The system must be able to process updates within 4 hours of receipt. Your proposed system must integrate the ANI/ALI database with the CSI GIS data. Your proposed system must be capable of supporting i3 requirements.

3.8.2 **Response time:**

It is a requirement that your proposed system must provide sub-second response time to database queries.

3.8.3 **Error checking:**

It is a requirement that your proposed system must have mechanisms to ensure the validity of the data in the system. All ALI information must be verified against

the MSAG. Additionally, the DBMS must verify and synchronize with the GIS system. Explain how your system will integrate with the GIS data.

3.8.4 **MSAG:**

It is a requirement that your proposed system must include a Master Street Address Guide (MSAG) to allow for the validation of records in the database. The MSAG must be linked to our GIS data in some manner.

3.8.5 **Data integrity and availability:**

It is a requirement that your proposed system must store data in a robust DBMS appropriate for a mission critical application to ensure its integrity and availability.

3.8.6 **Coordination with Telcos:**

It is a requirement that your proposed system must support an internet-based method for telecommunications providers to query, view and download NENA standard files relative to the MSAG.

3.8.7 **Data import and export:**

It is a requirement that your proposed system must be able to both import and export data in NENA standard formats.

3.8.8 **Private switch ALI:**

It is a requirement that your proposed system must include support for PBXs and MLTS.

3.8.9 **Wireless:**

It is a requirement that your proposed system must be able to pull the wireless ALI directly from third party database providers. The system must meet or exceed all relevant NENA standards in place at the time of implementation with a commitment to comply with future standards. The ALI database must be able to provide ALI steering to remote databases by entering into a table the identity of the entity where the remote ALI database is located and the associated ESRDs, ESQs and ESRKs.

3.8.10 **ALI updates:**

It is a requirement that your proposed system must support automated ANI/ALI updates in NENA standard formats. All updates must automatically detect and import customer records. All updates must be able to import ESNs. The import

process must automatically create error files for reporting to telephone service providers. The update process must be captured in logs and reports. CSI staff must be able to configure which errors are acceptable for the records imported to the customer table and set up import rules based on each telephone service providers' service orders. CSI staff must be able to strip out street suffix and post directional from the telephone service provider's street field and place them in the appropriate NENA standard field(s). CSI staff must be able to make a substitution (alias) in the street suffix field (for example - substitute AVE for AV). The system must be able to perform a NPAC comparison of records being migrated, orphaned migrates unlocked, and foreign exchanges.

3.8.11 User access to data:

It is a requirement that your proposed system must let properly authenticated users query and display ALI records based on the following: NPA, NXX, telephone #, town, county, state, street, name, ESN, Telco, type and class of service.

3.8.12 Telco access to data:

It is a requirement that your proposed system must be able to let the Telco query only their ALI records and view same by fields. Telcos should have a limited view of other data in the database.

3.8.13 Bulk modifications:

It is a requirement that your proposed system must allow for bulk modifications to data stored in the database.

3.8.14 Number portability:

It is a requirement that your proposed system must support number portability.

3.8.15 Database reports:

In general, all reports must be available both in hard copy and in commonly used electronic formats.

3.8.16 ALI audit:

It is a requirement that your proposed system must provide a daily ALI audit report.

3.8.17 **RNF:**

It is a requirement that your proposed system must provide a report that lists RNFs. The report must be filterable and sortable by: date/time, Telco, PSAP, call-taker, repair code, cause code.

3.8.18 **ALI discrepancies:**

It is a requirement that your proposed system must provide a report that lists ALI discrepancies. The report must be filterable and sortable by: date/time, COID, PSAP, creator, repair code, cause code, Telco, COS.

3.8.19 **SO exceptions:**

It is a requirement that your proposed system must provide a report that lists service order exceptions.

3.8.20 **ALI/GIS site audit:**

It is a requirement that your proposed system must provide a report that compares TN records with GIS data and reports TNs that do not have a match in the GIS data. The report must be filterable and sortable by: date, town, COS, ESN, street name.

3.8.21 **ESN:**

It is a requirement that your proposed system must provide a report that lists ESN records and displays the ESA data. The report must be filterable and sortable by: town and ESN.

3.8.22 **TN reports:**

It is a requirement that your proposed system must provide a report that lists all TNs. The report must be filterable and sortable by: town, town with unpublished numbers omitted, street, street with unpublished numbers omitted.

3.8.23 **MSAG:**

It is a requirement that your proposed system must provide a report that lists MSAG records. The report must be filterable and sortable by: town, street, ESN.

3.8.24 **MSAG audit:**

It is a requirement that your proposed system must provide a report that lists MSAG records with overlapping ranges and other range errors. The report must be filterable and sortable by: town, street, ESN.

4 **Implementation:**

4.1 **Project management:**

It is a requirement that your proposal must include a comprehensive project management plan for the entire project. Your project management team will be responsible for the successful completion of all phases of this project, including, but not limited to:

- Responsibility for contractor's project personnel;
- Contractor's project team organizational structure;
- Controlling project activities and costs;
- Project tracking, using Microsoft Project, or equivalent project management software, including any applicable achievement milestones, and action items;
- Providing status reports to CSI

The tasks to be managed include, but are not limited to system engineering; equipment installation; testing; training; operations; maintenance. Initially, the vendor's project management team will be required to meet weekly with the CSI project team.

4.1.1 **Project management team:**

Provide details on the qualifications of the project management team you will assign to this project.

4.1.2 **Project plan:**

It is a requirement that your proposal must include a project plan. The plan must include a detailed schedule, listing all major tasks and milestones that will allow for project completion within the specified timeframe.

4.1.3 **Migration plan:**

It is a requirement that your proposal must include a detailed plan to migrate from the current system to your proposed system. It must include a comprehensive risk analysis and mitigation plan. It must include provisions to roll-back if problems occur during the transition.

4.1.4 **Installation coordination:**

The winning bidder must coordinate with telecommunication companies and the current system providers during deployment. This coordination must occur prior to and during deployment to ensure that the cutover takes place without any 9-1-1 downtime. Describe how you will meet this requirement.

4.1.5 **Data migration:**

The winning bidder will be responsible for migrating data from the current system into the new system. Describe how you will meet this requirement.

4.1.6 **Staging:**

The winning bidder will be required to pre-stage and test any required equipment. Installation must follow a detailed plan to ensure consistency and quality. Ad hoc installation practices will not be tolerated.

4.1.7 **Installation standards:**

The winning bidder will be required to follow best practices in installation. This includes, but is not limited to, installation that conforms to engineered plans; all wiring and connections must be labeled; as-built documentation must be provided; wire management must be used; cables must be secure.

4.2 **Testing:**

4.2.1 **Pre-cutover:**

It is a requirement that your proposal must include a pre-cutover test plan. CSI expects assurances that the cutover will occur flawlessly. Final details of the pre-cutover acceptance test plan will be developed in the negotiation phase.

4.2.2 **Certification:**

The winning bidder will be required to perform their own acceptance testing. Once the contractor is satisfied that the system meets all requirements and is installed as agreed upon, the contractor must certify the system as complete. This will serve as notification that CSI can begin acceptance testing.

4.2.3 **Acceptance testing:**

CSI and the winning bidder will develop a comprehensive acceptance test plan during the negotiation phase. In general, the test plan will ensure that the completed system meets the requirements in this RFP, as well as the winning bidder's representations in their proposal. Final payment will not occur before the system successfully passes all acceptance tests and operates as designed for a minimum of 30 days.

4.3 **Training:**

4.3.1 **Train-the-trainer training:**

The winning bidder will be required to implement a train-the-trainer plan for both call-takers and PSAP administrators. Describe how you will meet this requirement.

4.3.2 **Technical staff training:**

The winning bidder will be required to train CSI technical staff. Describe how you will meet this requirement.

4.4 **User documentation:**

The winning bidder will be required to provide an electronic copy of documentation suitable for call-takers and grant CSI permission to make minor modifications, if necessary, to reflect local policies and procedures, and to make up to fifty copies of the documentation for distribution to the PSAPs. The winning bidder will be required to provide documentation suitable for the CSI technical staff.

4.4.1 **Manuals:**

The winning bidder will be required to supply all equipment manuals for all components in library format, as a complete collection of printed materials, and in electronic format, as PDF files, unless documentation is not available from the manufacturer in electronic format. A simple HTML web page must be created that lists the technical support and documentation URLs for each component in the system, where available.

4.5 **Ongoing operations:**

4.5.1 **Technical support:**

It is a requirement that your proposal must include a detailed narrative that describes how you plan to meet the support requirements. Include a description of your support infrastructure, including the qualifications of the support staff. List any third party maintenance agreements you foresee.

4.5.2 **Support personnel:**

It is a requirement that individuals who provide service and support must have proper training, certifications and /or supervision to ensure that manufacturer guidelines are followed. Our PSAPs are located in secure facilities and most, if not all, require that support personnel undergo a fingerprint supported background check.

4.5.3 **Single point of contact:**

It is a requirement that the system operator must provide a single point of contact for all problems. This must be provided both through a toll-free number and an on-line (email or web page) help desk. This must be in place prior to system installation.

4.5.4 **24x7 support:**

It is a requirement that the system operator must provide live 24x7 technical support for the entire system. Due to the criticality and 24-hour nature of 9-1-1, there can be no discernable difference in support due to day or time. First tier technical support call-takers must be capable of assisting users with common problems and not just act as an answering service for on-call technicians.

4.5.5 **Subcontracting:**

The system operator may sub-contract any or all support functions to subcontractors; however, the contractor must provide a single point of contact and be pre-approved by CSI.

4.5.6 **Third-party support contracts:**

It is a requirement that the system operator must maintain support contracts with third party vendors and manufacturers if these contracts are necessary to properly support the system. This would include support with hardware and software manufacturers that provide routine updates. If contracts can be procured through existing State contracts at lower costs, it is acceptable to do so; however, maintenance and support must be handled by the system operator.

4.6 **Response time:**

It is a requirement that all calls for support must be responded to within thirty minutes. If it is necessary to provide on-site support, the response time is three hours. Once alerted to a problem, the contractor must make reasonable efforts, appropriate for a mission critical system, to remedy the problem in as short a period of time as possible. Describe how you will meet this requirement. Describe your escalation process for problems which are not quickly resolved.

4.6.1 **Pre-emptive support:**

It is a requirement that the system operator must respond to any issues that they are aware of, through any manner, as if a call was placed by a system user. This applies to security issues.

4.6.2 **Spares:**

It is a requirement that the system operator must maintain spares for any device that is critical to the system operation for which replacements are not readily available.

4.6.3 **Support logging:**

It is a requirement that the system operator must maintain a help desk software application that will track and log all calls for support. CSI must have access to this application.

4.6.4 **Preventative maintenance:**

It is a requirement that the system operator must provide preventative maintenance on all components supplied under the contract resulting from this RFP at least once per year.

4.6.5 **Declaration of support:**

It is a requirement that your proposal must contain a declaration of support that details your support policies, including minimum advance notice given for End of Life and End of Support status for any components that you have developed. It is not necessary to provide minimum notice for EOL and EOS for common and readily available items such as PCs, servers and operating systems.

4.6.6 **Bug fixes:**

Unless otherwise agreed upon, it is a requirement that bugs and defects found in software applications developed by the winning bidder, or a subcontractor, must be repaired in the same release of the software in which the bug was found. It is not acceptable to defer bug fixes to a future release of the software. It is acceptable to install new executable files to fix a bug; however, this cannot change the user experience or system operation to the degree that additional training is necessary.

4.6.7 **Patches and upgrades:**

It is a requirement that the system operator must provide patches and upgrades for all components supplied under the contract resulting from this RFP. Patches that address serious security vulnerabilities must be applied within 48 hours of patch release, unless other mitigation measures can address the security vulnerability.

4.7 **Network management:**

It is a requirement that the system operator must provide comprehensive network management that is able to alert the staff when conditions develop that jeopardize the reliable delivery of calls or data. The network management infrastructure must provide reports on important metrics such as bandwidth utilization and connectivity.

4.7.1 **Warranty:**

All components must be covered by a warranty that begins at the time of delivery and extends for two years from the acceptance date. During this period, the system must function properly in accordance with the RFP, proposal and contract. The winning bidder must remedy any defects or malfunctions at no charge to CSI.

4.7.2 **Out of warranty items:**

Describe the process, procedure and costing factors used if a repair is not covered under warranty or maintenance, as in the case of water damage, for example.

5 **Cost proposal:**

You are required to provide a detailed cost proposal. This should be clearly identified and easily found upon opening the bid. You must break down your cost proposal so that the evaluators can determine how you arrived at your total cost. Federal grant funds are involved and we must be able to identify each expense by line item. For example, \$15,000 per dispatch position is not acceptable. We need to be able to identify each hardware and software component to meet grant requirements.

You are required to provide a 5-year cost for your proposed system. Ongoing costs such as software support and maintenance, network charges and database management fees are very important to the viability of our project. We also have to determine which costs are shared by the Association and which ones are born by the individual 911 Systems and its PSAPs.

We understand that not every vendor will propose the same type of solution but we want to be able to compare apples-to-apples. Don't itemize the pricing then knock twenty percent off the total price without showing where the discount is coming from. Also, don't show below cost prices on items then tack on an ambiguous vague charge or fee to make up the difference. We are dealing with federal grant money. Please break down the pricing into the categories below, if possible. The more difficult it is to understand your pricing, the less likely that your proposal will be accepted. Please also identify line items that you are willing to provide that are non-proprietary and that CSI could purchase less expensively off of the State Bid List.

As requested in section 5, please provide detailed and specific pricing for the categories listed below:

- 5.1.1 Call-handling hardware at the data centers:**
- 5.1.2 Call-handling software at the data centers:**
- 5.1.3 Database management hardware at the data centers:**
- 5.1.4 Database management software at the data centers:**
- 5.1.5 Network hardware at the data centers:**
- 5.1.6 Network software at the data centers:**
- 5.1.7 Auxiliary software at the data center not included in the call handling, database or network sections. Could include such things as anti-virus, firewall, reporting, remote management software, etc.:**
- 5.1.8 Auxiliary hardware items at the data center. Could include racks, UPS, time synchron, cables, adapters, etc., not previously listed:**
- 5.1.9 Services at the data center including configurations, installation etc.:**
- 5.1.10 Services provided at the 28 PSAPs such as installation, configurations, interfaces with existing CAD and PBX systems:**
- 5.1.11 Hardware at the 28 PSAPs such as work stations, printers, monitors, cabling, headsets, phones, routers, switches etc.:**
- 5.1.12 Software at the 28 PSAPs such as 911 call-taking, map display, etc.:**
- 5.1.13 Training including dispatcher, train the trainer, and technical staff:**
- 5.1.14 Project management costs including travel, testing, meetings with CSI etc.:**
- 5.1.15 Ongoing system operational costs such as database management, software upgrades, network fees, hardware maintenance etc.:**
- 5.1.16 Pricing plan for future expansion:** There are three counties surrounded by CSI member counties that do not have enhanced 9-1-1. We plan to be able to answer the wireless calls from those counties in our PSAPs. In the future, we may be able to answer landline 9-1-1 calls from those counties. We may also consider adding adjacent counties to CSI such as Marion County, Edwards County and Lawrence County. Please explain, as an option, how adding additional counties would be possible and how the pricing would be determined.