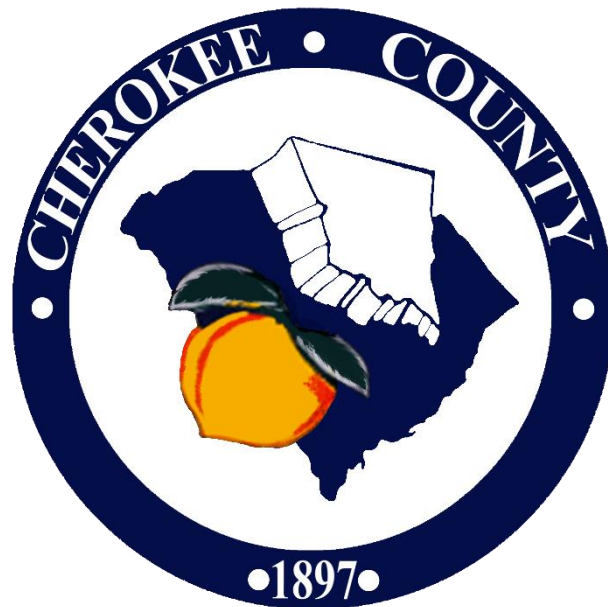

Cherokee County South Carolina



Request for Proposal

#2023-18

**Next Generation Public Safety
Radio System**

February 10, 2023

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GENERAL REQUIREMENTS

1.1 Introduction

- 1.1.1 Cherokee County is soliciting proposals for a Public Safety Radio System to meet the future needs of the COUNTY's Public Safety Emergency Services Providers. The system shall include a county-wide VHF analog paging system (already existing) and a solution for a County Wide UHF or 700/800Mhz Trunked system.
- 1.1.2 The COUNTY requires the system to provide 95% portable, on-the-hip, with speaker microphone over the entire county, providing a minimum DAQ (delivered audio quality) of 3.4. This is to be achieved without the use of in-vehicle repeaters. The system shall have the capacity to support multiple Law, EMS and Fire County and Municipal agencies.
- 1.1.3 It is required that vendors will provide the COUNTY with a design and corresponding pricing for their recommended system. All designs will use modern technology. All system components must be general availability – no Beta systems or associated components will be accepted. Vendors are responsible for the integration of their equipment into all proposed network elements. Vendors must submit a turnkey solution for all elements described within this RFP. Vendors must be able to warranty and provide maintenance on all elements proposed.

1.2 Background

- 1.2.1 Cherokee County is in the northeast part of the state of South Carolina. As of the 2020 census, its population was 56,216 and covered 397 square miles. It contains the incorporated areas of Gaffney and Blacksburg and also Limestone University.
- 1.2.2 The COUNTY's public safety first responders are utilizing in most instances 1990s technology to communicate.
- 1.2.3 The goal of this project is to replace the existing COUNTY radio system with the most technologically advanced communications system that meets the COUNTY's needs in the most cost-efficient way and provides for interoperability among all system users.

1.3 Project Plan

- 1.3.1 It is the intent of the COUNTY to establish a mutually beneficial relationship with a single Vendor who is committed to providing turnkey solutions to meet all our requirements. The COUNTY prefers to purchase the components of this RFP—hardware, integration, training, documentation, and any other support services—from a single Vendor.
- 1.3.2 The selected Vendor shall act as a prime contractor and integrator and will have total responsibility for the project. The Vendor shall assign a project manager (PM) who will oversee all deliverables and resources for the length of this project. The project manager (PM) cannot be changed without the express written consent of the COUNTY. The COUNTY will assign a contact person. The Vendor's PM will provide ongoing progress reports to the COUNTY throughout the life of the project.
- 1.3.3 If a proposal represents multiple offerings, or is provided by different firms or organizations, the COUNTY will do business with one designated responder only and will require the offering Vendor to assume responsibility for the total project throughout the entire contract period. Joint proposals may be accepted, but all parties must sign the proposal and contract, and they will be jointly and severally responsible.
- 1.3.4 The Vendor will maintain the primary responsibility for the successful completion of the work. This responsibility includes the coordination of all subcontractors and personnel

involved with the project. Vendor will relieve the COUNTY of the need to monitor any activities that are not directly reportable to the COUNTY, so that a single point of contact can keep the COUNTY completely informed on all issues. Vendor retains all responsibility for the successful completion of the work in conjunction with the cooperation of the COUNTY. The Vendor's role of providing this direction is as outlined below:

- **Leadership:** The PM will provide the leadership required to complete the project. This will include directing the activities of all personnel as appropriate. The nature of this leadership will be such that potential conflicts are avoided, and the most efficient use of all project resources is realized.
- **Coordination:** The PM will be responsible for coordinating the activities to minimize disruptions to service. This coordination will include equipment deliverables to COUNTY facilities, access for project personnel, and other authorizations such as change order management as may be required to complete the work.
- **Reporting:** The PM will report directly to the designated COUNTY contact person on a regular basis through a process to be mutually agreed upon by both parties. These reports will address progress, planned and completed activities, as well as identify any issues that require resolution. Should a conflict arise that the PM is unable to reasonably resolve, the matter will be referred to the COUNTY in a timely manner.
- **Authority:** The COUNTY and Vendor will mutually determine the extent of the authority required for the PM to complete the work. The COUNTY will then advise the COUNTY personnel of this authority.
- **Standards:** The COUNTY will advise the PM of any standards other than good industry practices, that may apply to the work. The PM will be responsible for ensuring that all work performed under the contract is in accordance with the COUNTY and industry standards.
- **Implementation:** The PM will be the primary point of contact between Vendor personnel, all subcontractors, and the COUNTY for the coordination of the implementation phase of the project. This will include notification of affected personnel, coordination of access, determination of operational impacts and identification of risks associated with the work.
- **Project Manager:** Vendor shall select an individual best qualified for assignment as PM for the COUNTY's radio project. The final selection of the PM will be completed upon contract award.

1.4 Evaluation / Selection Process

The criterion upon which the evaluation of the proposals will be based includes, but is not limited to, the following:

- 1.4.1** Submission of a proposal implies the Vendor's acceptance of the evaluation criteria and Vendor recognition that subjective judgments must be made by County.
- 1.4.2** A proposal that does not conform to the instructions contained in this document or that does not address all questions and/or requirements as specified may be eliminated from consideration. However, the COUNTY reserves the right to accept such a proposal if it is determined to be in the COUNTY's best interest.
- 1.4.3** The COUNTY may initiate discussions with Vendors during the evaluation process and reserves the right to request an on-site presentation/demonstration by the Vendor. Modifications to proposals will be accepted during this period but only when such modifications are requested by the COUNTY. Vendors may not initiate discussions and/or presentations. The COUNTY expects to conduct any discussion sessions with Vendor personnel authorized to contractually obligate the Vendor with an offer.

1.4.4 The award of the contract shall be made to the Vendor whose proposal best meets the goals and objectives of the COUNTY as set forth in the RFP. The evaluation criteria shall take all of the following into consideration: hardware, software, and/or services, warranty, monitoring, maintenance, system refresh, support, pricing, and other factors set forth in the RFP.

1.4.5 The COUNTY may hold negotiating sessions with the successful Vendor. If the COUNTY and the selected Vendor are unable to agree to contract terms and conditions, the COUNTY reserves the right to terminate contract negotiations with the Vendor and initiate negotiations with another Vendor(s).

1.4.6 The COUNTY will select the Vendor who, in the opinion of the COUNTY, has made the best overall proposal and shall award the contract to that Vendor. The final selection will be made by the COUNTY. The COUNTY may reject any or all proposals.

1.4.7 EVALUATION CRITERIA ARE AS FOLLOWS:

Technical Compliance - To the degree that the functional requirements of this RFP are met, the evaluation shall include the ease of system use and application to operational needs, as well as the effect (if any) on any present communication system.

Maximum Score: 20

Acquisition, Maintenance, System Refresh, and Operational Costs – Shall include a spreadsheet identifying all system costs during warranty, 1, 3, and 5-year service period.

Maximum Score: 20

Project and Support – Shall include the reliability of the turnkey systems: 1) project requirements; 2) adequacy of system maintenance; 3) support parts availability; 4) location, staffing level, and technical training of support staff; and, 5) service to meet the special needs of public safety operations.

Maximum Score: 20

Vendor References – Shall include Vendor's experience and qualifications with turnkey County Agency Owned Trunked/Repeated, projects for public safety operations. The vendor shall include a list of recent projects, professional references of all working communication systems, and an organizational list of all key personnel in this project (prime and subcontractors), defining their tasks.

Maximum Score: 20

Project Implementation Schedule – Vendor's ability to outline schedule for the installation process, testing process, subscriber distribution, and 911 integration.

Maximum Score: 20 **Total Evaluation Score: 100**

1.5 Proposal Format

1.5.1 Proposal must be typed on standard 8-1/2" x 11" paper, indexed, and bound. All items proposed, required, and optional must be priced separately. All documents included in the proposal and the outside of the envelope and/or box must be labeled with the Vendor's name and the title that corresponds to this RFP.

1.5.2 Proposal shall include responses to each section, sub-section, and all questions listed in the RFP, using the RFP sequence and format. Vendors shall follow the proposal sequence and format, stating the question or specification followed by the response. The questions are structured to allow the Vendor to explain the benefits of the system being proposed. Vendors should carefully consider all technical responses, as they are critical to the evaluation process. The evaluation process shall take into account the adequacy and completeness of responses. While the COUNTY appreciates a brief, straightforward, concise reply, the Vendor must fully understand that the evaluation is based on the

information provided.

- 1.5.3 Accuracy and completeness are essential. Omissions and ambiguous or equivocal statements may be construed against the Vendor. The proposal response may be incorporated into any contract resulting from this RFP. Vendors are cautioned not to make claims or statements to which they are not prepared to commit contractually.
- 1.5.4 Failure by the Vendor to meet such claims may result in a requirement that the Vendor provide resources necessary to meet submitted claims.
- 1.5.5 Vendor is expected to examine all documents, forms, specifications, standard provisions, and all instructions. Failure to do so will be at Vendor's risk.
- 1.5.6 The proposal shall contain the following sections, each clearly labeled with the section number at the top of the page, in the specified order:

Section 1	Transmittal Letter
Section 2	Executive Summary
Section 3	System Description
Section 4	System Diagrams
Section 5	Technical Responses
Section 6	Exceptions/Clarifications/Substitutions
Section 7	Pricing
Section 8	Statements of Work
Section 9	Corporate References
Section 10	Product Literature and Brochures
Section 11	Attachments

1.5.7 SECTION 1: TRANSMITTAL LETTER

Responses shall contain a transmittal letter that must be typed on the Vendor's 8-1/2" x 11" stationery and include the following information:

- The identity of the Vendor submitting the proposal;
- The name, title, phone, email and fax numbers of the person or persons authorized to contractually obligate the Vendor on this proposal;
- The names, titles, email and phone numbers of the persons to be contacted for clarifications;
- An indication of acceptance of the general requirements and contract terms as described within this RFP;
- An acknowledgment of receipt of all amendments to this RFP.
- A person who is authorized to obligate the Vendor in a contract offer must sign the letter.

1.5.8 SECTION 2: EXECUTIVE SUMMARY

Proposal shall include a general overview of the Vendor's planned solution. This summary should consist of a narrative that outlines the hardware, software, technology, and application that will be needed to implement the proposed system.

1.5.9 SECTION 3: SYSTEM DESCRIPTION

Proposal shall include a detailed functional description of the proposed system that shall include, but not limited to:

- Hardware
- Software
- Antennas

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- Associated wiring (cabling)
 - Grounding
 - Mounting hardware
 - Operational Requirements
 - Radio network architecture
 - Tower site(s)
 - Frequency band of operation
 - Base radio hardware
 - Over-the-air protocol
 - Expansion capabilities
 - Additional radio sites/channels
 - Additional mobile / portable units
 - Warranty
 - Monitoring
 - Maintenance
 - Support

1.5.10 SECTION 4: SYSTEM DIAGRAMS

Proposal shall include diagram(s) illustrating the following:

- General overview of the hardware (system) configuration
- General overview of the RF (system) configuration
- Propagation studies showing proposed system coverage.

1.5.11 SECTION 5: TECHNICAL RESPONSES

Vendors shall provide a complete, point-by-point, technical response to the RFP indicating compliance, exception, clarification, or substitution. Where numeric specifications are involved, state the exact specification of the product proposed. References to product specification sheets are not acceptable. Any exception, clarification, or substitution requires a complete description.

Identify each item clearly, where necessary, by referencing the RFP section number, subsection number, item number or letter and, if necessary, bullet, paragraph, or line number.

Vendor Response Definitions – the following definitions are to be used when Vendor makes point-by-point responses:

- Compliant- Meet or exceed the RFP specification as stated. The feature, functionality, service, or requirement will be provided exactly as required. No further explanation or response is required. However, by identifying a feature, functionality, service or requirement as COMPLIANT, Vendor acknowledges that the COUNTY will not agree to System Acceptance until the feature, functionality, service or requirement is met.
- Exception- The feature, functionality, service or requirement will not be provided for the following reason.
- Clarification- The feature, functionality, service or requirement will be provided given the following understanding.
- Substitution- The feature, functionality, service or requirement will be provided in another manner as described.

1.5.12 SECTION 6: EXCEPTIONS, CLARIFICATIONS, AND SUBSTITUTIONS

- List all Exceptions, Clarifications, and Substitutions (E/C/S) to any of the sections and/or subsections of this RFP.
- Identify each E/C/S by clearly referencing the page number, section number, subsection number, item number or letter, and, if necessary, bullet, paragraph, or line number.
- When identifying E/C/S, it is not necessary to include the entire text of a particular section or subsection; however, for ease of reference, you may use portions of the

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- RFP text, if helpful in explanation.
 - For clarifications or substitutions, provide an explanation of the difference between what the RFP requested and what will be supplied by the proposed system.
 - The COUNTY is open to other means of accomplishing the requested functionality. Vendors should explain why they believe their method of accomplishing the requested functionality will be equal to or better for the COUNTY.
 - For exceptions, provide the reason.

1.5.13 SECTION 7: PRICING

Detailed price and delivery quotations shall address the following areas:

- Hardware, to include subscriber units (mobiles, portables, base stations, etc.)
- Software
- Installation
- Warranty
- Project Management
- Technical Services
- Monitoring
- Maintenance
- Support
- Options

Use Proposal Form for overall proposal price covering minimum specifications of the RFP. Use Supplement Proposal Form for price breakdown and options.

Completed Cost Sheets with comprehensive, itemized pricing for each element of the Vendors system and a summary of the total cost for all proposed elements including both non-recurring and recurring costs shall be listed in your proposal.

1.5.14 SECTION 8: STATEMENTS OF WORK

- Preliminary Statements of Work for each party (i.e., COUNTY, the primary Vendor, application Vendors and/or any other subcontractors) shall also be included.
- Proposed services, including data conversion and migration, implementation, documentation, and training. Ongoing technical support, warranty, maintenance, and system upgrade support services.
- Vendor must provide a detailed plan indicating information on the servicing agency that will maintain the system, an outline on the organizations capabilities and a plan to provide the required responses to service requirements.
- Vendor must provide a list of all service aids, software, training, and maintenance support to be provided to Agency personnel.
- Delivery and implementation schedule, to include all phases of the project.

1.5.15 SECTION 9: TERMS AND CONDITIONS

- To the extent permitted by law, Vendor may request in writing non-disclosure of confidential data. Such data shall accompany the proposal, be clearly identified, and readily separated from the proposal.
- Proposals are open to negotiation until a contract is executed.
- The COUNTY will not be liable for any costs incurred by the Vendor in preparing a response to this solicitation. Vendors will submit proposals at their own risk and expense.
- The COUNTY makes no guarantee that any software, equipment, or services will be purchased as a result of the solicitation and reserves the right to reject any and all proposals. All proposals and their accompanying documentation will become the property of the COUNTY.
- No award or acquisition can be made until authorized officials of the COUNTY approve such action.
- The COUNTY will not be obligated to the Vendor for hardware, software and/or services until the completion of a signed contract approved by authorized officials of

the COUNTY and issuance of a purchase order.

- This solicitation in no manner obligates the COUNTY to the eventual rental, lease, or purchase of any hardware, software, or service described, implied or which may be proposed, until confirmed by a written contract. Progress toward this end is solely at the discretion of the COUNTY and may be terminated at any time prior to the signing of a contract.

1.5.16 SECTION 10: CORPORATE INFORMATION

The successful Vendor must be a reputable, established, and financially stable provider of radio systems. The COUNTY requires assurance that the Vendor has a high probability of remaining in business during the useful life of the proposed equipment.

Proposal shall contain a section that includes the following information:

- The legal name of the responding Vendor.
- The address of the Vendor's headquarters.
- The name(s) of Vendor personnel who may be contacted for further information about the Vendor or proposal.
- Resumes of key staff involved in the design, implementation, and management of the project.
- A brief history of the Vendor, including such things as age, number of years in the business of supplying radio systems, growth, et cetera.
- Dun & Bradstreet Number, Federal IRS Number, and Financial (Bank) Reference.

1.5.17 SECTION 11: CORPORATE REFERENCES

- Proposal shall include a section that provides references of current agency owned, Trunked, Repeated systems. All references shall include agency name, address, telephone number, name and title of contact person, as well as a list of the hardware and software operational at the site and the date of installation.

1.5.18 SECTION 12: PRODUCT LITERATURE AND BROCHURES

- Proposal shall include a section that contains literature describing each of the Vendor's equipment items; however, the literature will be supplemental and will not be considered to meet any of the requirements of this RFP.

1.5.19 SECTION 13: APPENDICES

- Proposal may include a separate section entitled “Appendices” containing any information not specified in the above format.

RADIO MANUFACTURERS SPECIFICATIONS

2.1 General Hardware Specifications

- 2.1.1** The COUNTY shall accept proposals with only new equipment and the latest version of firmware, software and/or operating systems. If at any time during the contract period (contract signing to final system acceptance) a newer version of firmware, software and/or operating system becomes available, the COUNTY, at its sole discretion, can elect to have the vendor provide and install them at no additional costs to the COUNTY.
- 2.1.2** Proposed used, reconditioned, refurbished and/or remanufactured equipment will not be accepted without prior approval. All system components must be general availability – no Beta systems or associated components will be accepted.
- 2.1.3** All equipment and materials shall be new and free of corrosion, scratches and other defects. New shall mean the proposal equipment shall be assembled using exclusively new, first time usage parts.
- 2.1.4** The equipment shall not contain rebuilt or remanufactured parts or any used parts, which have been rebuilt to new specifications. The COUNTY reserves the right to require a sworn statement from the manufacturer guaranteeing the proposal equipment shall meet all requirements of these specifications.
- 2.1.5** All equipment must be of current design and manufacture. CURRENT MANUFACTURE shall mean the most recent line of the proposal items made available by the manufacturer. Recommended equipment cannot have a planned end-of-life declaration.
- 2.1.6** All equipment requiring Federal Communications Commission (FCC) type approval, acceptance or certification shall have approval, acceptance or certification at time of shipment.
- 2.1.7** All equipment shall meet or exceed the applicable standards of the Electronic Industries Association, the FCC, and shall conform to the specifications of the local telephone company with respect to audio levels, frequencies and control voltages to be impressed upon telephone lines.
- 2.1.8** Equipment design and construction shall be consistent with good engineering practice and shall be executed in a neat and workman-like manner.
- 2.1.9** Appropriate lightning / surge protection / grounding will be provided for all installed hardware as applicable.

2.2 Implementation Services

- 2.2.1** Advise the COUNTY of the number and location of transmitter sites that will be required to meet the minimum acceptable RF coverage levels. Transmitter sites, tower locations, and towers are the responsibility of the vendor.
- 2.2.2** Vendor is required to obtain all FCC licensing for their design and prepare all FCC license applications, including any modifications to existing licenses, if applicable.
- 2.2.3** Provide a complete documentation package to the COUNTY. The package shall include system diagrams, interconnection drawings, parameter lists, installation photographs, optimization procedures, and a technical support contact list.
- 2.2.4** Prepare and execute a detailed system acceptance test plan, including detailed system acceptance test procedures.
- 2.2.5** Provide operational and maintenance training to appropriate COUNTY personnel.
- 2.2.6** Install the radio equipment at the tower site(s) and antenna system; interconnections between the base station shelf and backhaul equipment; and all mounting hardware, including equipment racks and cabinets required for the complete installation of all supplied equipment and materials.
- 2.2.7** All equipment shall be installed in a neat and workmanlike manner and follow best practices of R56 grounding standards.
- 2.2.8** All installation services will comply with all warranty provisions and warranty contract maintenance services in accordance with these specifications.
- 2.2.9** All installation services must comply with all local, state and federal building, electrical and construction codes, and industry best practices.

SYSTEM REQUIREMENTS

3.1 Systems

- 3.1.1** Vendors should provide a narrative on the system they are proposing along with a description of the technology and their experience in designing substantively similar systems. References should be provided along with contact information.
- 3.1.2** Vendors should take this opportunity to describe their system benefits and reasoning behind the design decisions made and what this means to the COUNTY if they elect to purchase this system from you.
- 3.1.3** Vendors may be required to make a final presentation with detailed engineering and systems descriptions. This session would be designed to finalize the system, its specifics and technical aspects, operating features and final capabilities.
- 3.1.4** Diagrams defining the system and its configuration with components are required for the system. Detailed information on the systems' hardware and configuration are required.
- 3.1.5** Coverage descriptions and propagation studies for each site and composite coverage studies must accompany the proposal along with detail on how you plan to guarantee the coverage you are offering.
- 3.1.6** Describe fully how you propose to test coverage after installation and what documentation you are offering to verify coverage.

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- 3.1.7 The successful vendor must provide a detailed acceptance test plan, which must be approved by the COUNTY.
 - 3.1.8 The COUNTY reserves the right to select locations within the areas that you guarantee coverage to complete a practical test for talk out and talk back with units to be used in the system, in addition to the points the vendor uses to validate coverage.
 - 3.1.9 The vendor will be responsible for providing hardware “radio equipment that is substantially the same as will be used on the system” to conduct the testing.
 - 3.1.10 Systems and components provided should not include any proprietary systems which the backbone / core of the system cannot support.
 - 3.1.11 Systems and components, including subscriber units must be encryption capable.
 - 3.1.12 Chosen system must be ISO compliant with respect to radio system ratings.
 - 3.1.13 Chosen system must have maintenance availability 24/7/365.

RF INFRASTRUCTURE

4.1 Coverage Area

- 4.1.1 The Vendor must strive to achieve this goal with the proposed coverage design and with coverage reliability as specified in the following sections. Areas that may have reduced coverage must be specifically and separately identified in the coverage map for consideration by the COUNTY. It is acceptable for Vendors to provide one or more alternative coverage designs.

4.2 Coverage Reliability

- 4.2.1 The COUNTY’s goal is to achieve a minimum of 95% coverage, 95% of the time portable radio, on-the-hip, with speaker microphone, over the entire county, providing a minimum DAQ (delivered audio quality) of 3.4. It is required that vendors will provide the COUNTY a design and corresponding pricing for their recommended system. All designs will use state-of-the-art technology.
- 4.2.2 Vendors are responsible for integration of their equipment to all proposed network elements. Vendors must submit a turnkey solution for all elements described within this RFP. Vendors must be able to warranty and provide maintenance on all elements proposed.
- 4.2.3 The system shall be designed to achieve successful communications in 95% of the COUNTY’s service area as referenced above. The Vendor shall submit a detailed coverage map(s) of the proposed site(s) that illustrates a coverage estimation of the proposed infrastructure.

4.3 Coverage Calculations and Documentation

- 4.3.1 Vendor must submit supporting documentation and methods of calculation to verify its ability to provide the desired radio coverage. This documentation shall include a detailed description of range and reliability calculations, including all assumptions. Coverage maps that show reliability for the entire COUNTY’s service area should be included.

4.4 Verification of Coverage

- 4.4.1** It shall be the responsibility of the Vendor to verify successful communications at locations to be mutually selected by the COUNTY and the Vendor. The successful Vendor shall submit a detailed coverage test plan.

4.5 Tower Site Selection

- 4.5.1** The Vendor's responsibilities shall include selection and acquisition of the specific tower site(s) needed to meet the minimum system coverage requirements.
- 4.5.2** The Vendor will provide licensed microwave connectivity to all tower sites required by the successful Vendor. It shall be the responsibility of the Vendor to coordinate such requests with the COUNTY in a timely manner.

4.6 FCC Licensed Frequencies

- 4.6.1** All FCC licensing applications will be the responsibility of the Vendor.
- 4.6.2** Cherokee County is to be the License holder of all applicable frequencies required for system and microwave operation.

4.7 System Capacity

- 4.7.1** The system shall have the capacity to support a minimum of 3,000 subscribers with the minimum of 50 simultaneous talk paths.

5.0 RADIO EQUIPMENT - SPECIFICATIONS

5.1 Field User Subscriber Equipment

- 5.1.1** The COUNTY is requesting pricing for the following numbers of portables, mobiles and control station radios:

5.1.1.1 Portable Radios 550

5.1.1.2 Mobile Radios 325

5.1.1.3 Control Stations to be listed as an add on price to upgrade mobile radio with antenna, power supply and necessary installation brackets. Assume 50ft of coax per installation also assuming some installations may be less or more.

- 5.1.2** Vendors must guarantee fixed pricing on all field user subscriber equipment for 5 years from date of final system acceptance. Any restrictions such as quantity of simultaneous purchase that the Vendor wishes to enforce should be detailed in depth in their proposal.

- 5.1.3** Vendors must include installation costs for the mobile radios and control stations.

5.2 P25 Digital, Trunked, Conventional and Analog

- 5.2.1 Equipment is required to be capable of operating in the conventional analog, trunked, and digital phase 1 and phase 2 P25 formats, support of DMR and NXDN technologies are optional, but preferred.

5.3 Performance Capabilities

5.3.1 *Mobile Radios*

- 5.3.2 Mobile radios should have the following features and capabilities.

- 5.3.2.1 Mobile Radios should have a minimum of 500 channels/talk groups or more and be capable of operating in analog, conventional, trunking, and P25 digital phase 1 & 2 modes, DMR or NXDN, with the capability of tone coded squelch and digital coded squelch in the same unit.
- 5.3.2.2 Alpha Numeric display
- 5.3.2.3 Channel Spacing 6.25 / 12.5 / 25 KHz
- 5.3.2.4 Dual Priority Scan with adjustable scan rate
- 5.3.2.5 Frequency Stability – 2.5 ppm
- 5.3.2.6 Data Capable (**Optional**)
- 5.3.2.7 MDC1200 or Equivalent PTT ID Encode / Decode functionality
- 5.3.2.8 DTMF encode/decode functionality
- 5.3.2.9 Quick Call or Equivalent (Two Encode / Decode) functionality
- 5.3.2.10 Programmable buttons
- 5.3.2.11 Monitor
- 5.3.2.12 Date and 12 / 24 hour clock
- 5.3.2.13 Emergency key
- 5.3.2.14 MIL-STD 810 C/D/E/F
- 5.3.2.15 GPS receiver capable (Built In)
- 5.3.2.16 Encryption capable
- 5.3.2.17 OTAP (Over-the-Air Programming)
- 5.3.2.18 Over-the-air remote disabling
- 5.3.2.19 Reverse compatibility with Phase I / II and analog conventional systems
- 5.3.2.20 Dash and Remote mounting (capable)

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- 5.3.2.21 Hand-Held Control head optional
 - 5.3.2.22 Multi-band with simultaneous band receives capability
 - 5.3.2.23 Dual control head capable
 - 5.3.2.24 Mounted radios to be installed in apparatus
 - 5.3.2.25 Playback feature

5.3.3 *Portable Radios*

5.3.4 Portable radios should have the following features and capabilities.

- 5.3.4.1 Portable radios should have a minimum of 500 channels/talk groups or more and be capable of operating in analog, conventional, trunking, and P25 digital phase 1 & 2, DMR or NXDN modes. With the capability of tone coded squelch and digital coded squelch in the same unit.
- 5.3.4.2 Channel Spacing 6.25 / 12.5 / 25 KHz
- 5.3.4.3 Man down feature
- 5.3.4.4 Emergency key (with a distinct color)
- 5.3.4.5 Low battery indicator
- 5.3.4.6 Low battery alert
- 5.3.4.7 Dual Priority Scan with adjustable scan rate
- 5.3.4.8 Frequency Stability – 2.5 ppm
- 5.3.4.9 Data Capable (Optional)
- 5.3.4.10 MDC1200 or Equivalent Call Alert Encode / Decode functionality
- 5.3.4.11 DTMF encode/decode functionality
- 5.3.4.12 Quick Call or Equivalent (Two Encode / Decode) functionality
- 5.3.4.13 Direct channel access
- 5.3.4.14 Programmable buttons
- 5.3.4.15 Monitor

- 5.3.4.16 Alpha-numeric display (Front mounted)
- 5.3.4.17 MIL-STD 810 C/D/E/F
- 5.3.4.18 GPS Capable (Built In)

5.3.4.19	OTAP (Over-the-Air Programming)
5.3.4.20	Over-the-air remote disabling
5.3.4.21	Reverse compatibility with Phase I / II and analog conventional systems
5.3.4.22	Individual rapid charger (per radio) with intelligent charging.
5.3.4.23	Remote speaker microphone capable
5.3.4.24	Lithium ion battery composition only.
5.3.4.25	Associated antenna and belt clip
5.3.4.26	Spare battery, per unit
5.3.4.27	Playback feature

5.4 Environmental Requirements

- 5.4.1** Portable radios must meet the Mil-STD-810C-D-E and F, and IP68 as a minimum requirement. The units should be capable of operating in an outdoor environment for extended periods in all weather conditions with minimal degradation. Extended period is defined as any period of time a user would be expected to perform his or her duties with the radio outside their clothing exposed to the elements for this period.

5.5 GPS Capable

- 5.5.1** It is recommended that the units furnished should be capable of generating a useable GPS signal decodable with standard non-proprietary open format systems. This feature must be a factory installed option.

5.6 Optional Additional Equipment

Radio Dispatch Console

- 5.6.1** The proposed system must tie into the County's existing logging recorder system (Eventide).
- 5.6.2** The proposed system must will be fully compliant with Zetron Dispatch Max system. The vendor should also be certified as a Zetron Service Tech prior to installation.
- 5.6.3** The proposal should include the installation/conversion of all related 911 PSAP equipment.

Over the Air Programming

- 5.6.4** Vendor should provide the necessary software, hardware, and licensing requirements to perform Over the Air Programming (OTAP). This should support network level connections to conduct operation and have the capability of supporting a minimum of 3,000 subscribers.

GPS Tracking Software

- 5.6.5** Vendor should provide optional pricing on software to track GPS-Enabled subscribers on the system. The software should support up to 3,000 units and be connected to the network of the radio system.

5.7 Response

- 5.7.1** A clear response to each of the above requirements is required for this section. A statement accepting or rejecting, and a clear response stating how each stipulation would be achieved is required in the RFP Response.

6.0 SYSTEM INSTALLATION, TESTING, AND ACCEPTANCE

6.1 Delivery

- 6.1.1** In their proposal the vendor should in detail outline the delivery schedule that they propose, along with estimated timelines for each task that they anticipate deploying the system.
- 6.1.2** Vendors should note that these commitments will be part of a performance evaluation program, therefore we encourage realistic timelines. The quality of the technical solution, depth of understanding of the opportunity and solutions to the problems in deploying this system will outweigh delivery dates.

6.2 Installation

- 6.2.1** Vendor shall submit a sample implementation plan, which will include a detailed description of all installation and implementation tasks.
- 6.2.2** All work must comply with local, state, and federal codes.
- 6.2.3** No equipment cabinets are to be used in this system, all equipment must be rack mounted and grounded to the specifications detailed in the implementation section that follows.
- 6.2.4** Vendor shall be responsible for the removal and disposal of all trash.

6.3 Implementation Services

- 6.3.1** Implementation of the system will consist of the following:
- 6.3.2** Hardware – The successful Vendor will install all necessary hardware (radios, racks, coaxial feedlines, filters, combiners, receiver multi-couplers, antennas, jumpers, grounding kits, lightning/surge suppressors, mobile control stations, power supplies, UPS', workstations, servers, monitors, printers, keyboards, mouse pointers, racks, GPS, timing sources, etc.) and all associated cabling including power, grounding, signaling, etc.
- 6.3.3** Successful vendor shall be responsible for providing lightning and surge suppression on incoming, RF coaxial, telephone and power lines per R56.
- 6.3.4** Successful vendor shall work with the COUNTY's designated electrical contractor to

coordinate connection to a single point earth ground as well. All grounding must meet or exceed R56 specifications. All installations shall be completed in a neat and workman-like manner. All cables shall be labeled, and color coded per the COUNTY's standards.

- 6.3.5** Software – The vendor will install, configure, initialize, and test all software modules / systems.
- 6.3.6** Data Conversion and Migration – The vendor will be responsible for the conversion and migration of all applicable data in the COUNTY's current systems to the new systems.
- 6.3.7** System Integration – The vendor shall be responsible for integrating all subsystems / components internal to the systems described in this RFP. In addition, the vendor shall be responsible for integrating these systems with all systems external to those systems.
- 6.3.8** The implementation / cutover shall consist of a phased-in approach to be determined by the COUNTY.
- 6.3.9** The vendor will provide a schedule and project management plan for the implementation phase of this project including a personnel plan with resumes of key project personnel to be submitted.
- 6.3.10** The vendor shall also provide a complete set of as-built documentation including system/sub-system block diagrams, cabling diagrams, circuit ID's, etc.
- 6.3.11** Implementation of the communications system upgrade will be coordinated by the COUNTY's designated Project Manager. It is anticipated that for purposes of this RFP, the successful vendor shall have to deliver the components to the tower sites and perform the offload and installation.
- 6.3.12** The successful vendor will have to closely coordinate delivery schedules and offload requirements with the COUNTY's Project Manager.
- 6.3.13** All installation services will comply with all warranty provisions and warranty contract maintenance services in accordance with these specifications.
- 6.3.14** All installation services must comply with all local, state and federal building, electrical and construction codes.
- 6.3.15** Vendor must provide a full transition plan from the current analog system to the new system, with no downtime.

6.4 Antenna Installation

- 6.4.1** All feed line should be installed using clip-on standoff mechanical attachments; no twist or pull ties.
- 6.4.2** Three (3) manufacturers supplied grounding kits (top, bottom at sweep and shelter entry point). A minimum of #4AWG green insulated grounding cable shall be run from the top of the tower and connected through a bottom ground bus bar to the single point earth ground on the exterior bus bar.
- 6.4.3** Weatherproofing kits for all outside connectors, all three coaxial cable grounding points and any building/shelter/cabinet cable entry ports.
- 6.4.4** Take sufficient photographs of the antenna installation, weatherproofing, and grounding installation to be forwarded to the project manager or appointed designee.

6.4.5 Each antenna and line shall have a sweep test (open, short, load) and return loss analysis performed to verify minimum reflected power (VSWR<1.5) and to catalog the frequency response and performance, with the results submitted to the COUNTY as part of system acceptance.

6.4.6 A drip dip should be part of the installation at the bottom to alleviate water tracking to the entry point of the structure.

6.5 Systems Testing and Acceptance

6.5.1 Acceptance of the final components shall be based upon satisfactory performance in the actual COUNTY system operating environment using local data. The Vendor shall perform the testing and acceptance procedures described below.

6.5.2 At least sixty (60) days prior to the commencement of the acceptance testing, vendor shall prepare a comprehensive acceptance test plan to clearly and definitively demonstrate to the COUNTY that the entire system meets all specifications and contractual commitments. The test plan will be subject to approval by the COUNTY.

6.5.3 Final system acceptance begins after all implementation phases are completed.

6.5.4 The acceptance test plan shall include:

- Test procedures for each phase
- All equipment and system acceptance criteria and parameters
- Any specific resources required to be provided by the Vendor or COUNTY for completion of all acceptance tests and inspections
- The test plan shall document how each functional specification is to be tested, the method of testing, and the anticipated results.

6.5.5 After the COUNTY has approved the acceptance test plan, the Vendor shall prepare detailed test procedures, which will also be subject to approval by the COUNTY. These test procedures shall outline all system acceptance tests and inspections that are to be strictly adhered to by the Vendor and monitored by the COUNTY. The procedures will be used as the basis to determine acceptability of the entire system, in accordance with the system specifications, the approved test plan, and all contractual commitments.

6.5.6 The detailed test procedures shall include all factory acceptance tests for all radio equipment. As a part of the test procedures, the Vendor shall hold a demonstration for the COUNTY in order to show that the radio communications system meets all contractual specifications.

6.5.7 The Vendor shall demonstrate every element of the hardware configuration and shall exercise every assembly or sub-assembly in the course of the test. The intent of the functional acceptance test is to ensure that every circuit is activated and demonstrated to be operational.

6.5.8 The Vendor shall demonstrate every functional attribute of any included software, operating system, utilities, and all ancillary application program modules.

Tests will include, but shall not be limited to the following and the results included in the test report:

- Verification of all radio channel transmit, receive, paging, dispatch and recording functional specifications.
- Verification of all basic component functions operating normally.

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- Verification of all alarm monitoring and reporting functional specifications.
 - Verification of all commands to external systems.
 - Verification of all hardware performance according to manufacturer's specifications.
 - Verification that all installed hardware and cabling meet all applicable safety related codes and functional specifications.
 - Verification that all hardware is properly grounded to a low impedance (< 5 ohms) single point earth ground.
 - Automatic backup switching and recovery of any redundant subsystems or components under failure.

 - Demonstration of all management information requirements.

6.5.9 All test plans and procedures approved by the COUNTY shall not be revised without the prior approval by the COUNTY and the Vendor.

6.6 30-Day Testing and Acceptance

6.6.1 After the system has been installed, has passed acceptance testing and is ready for the final 30-day testing phase, the Vendor shall notify the COUNTY in writing. The test period will commence with the COUNTY's approval.

6.6.2 A test period of thirty consecutive calendar days shall be conducted to demonstrate that all equipment is in good operating condition and meets the specifications of the manufacturer. This shall consist of normal utilization of the entire system. During this period the components shall experience no major failures and no major software malfunctions.

6.6.3 The COUNTY reserves the right to select at least 6 locations within the areas that you guarantee coverage to complete a practical test for talk out and talk back with units to be used in the system, in addition to the points the vendor uses to validate coverage. The vendor will be responsible for providing hardware "radio equipment that is substantially the same as will be used on the system" to conduct the testing.

6.6.4 In the event the Vendor alerts the user in advance that the system will be experiencing a specific software degradation for a particular period (for example, while implementing new software revisions or troubleshooting for problems that have not yet exhibited themselves in operation), the 30-day operational test may be suspended for the duration of that period, then re-established.

6.6.5 In the event that the network components experience an unanticipated hardware or software failure, the vendor shall correct the failure, after which a new 30-day test period shall be initiated.

6.6.6 If the test fails due to Vendor-provided equipment, it shall be the responsibility of the Vendor to correct any deficiencies that may have caused the test failure. A new 30-day test period will be initiated after correction of the system failure.

6.6.7 All defective devices will be repaired under warranty. The COUNTY representatives shall witness all phases of acceptance testing.

6.7 Test Standards

6.7.1 Throughout the 30-day test period, all equipment must meet the following standards:

- No system or component shall experience major failure during the test period. System failure is defined as any problem that prevents multiple communication.
- No disruption of day-to-day operations may occur during implementation of this project.

- The system shall meet the specifications provided in the contract or design document.

7.0 TRAINING

7.1 The Vendor will provide four (4) types of training for the new system.

- 7.1.1** The first phase of training will consist of training the 911 dispatch center's system administrators. This type of training will consist of hands-on instruction incorporating all aspects of operation and administration of the system.
- 7.1.2** The second phase of training will be conducted on site at the COUNTY by the designated Vendor trainer. This training will be targeted towards Telecommunications staff with an emphasis on day-to-day operational requirements.
- 7.1.3** The third phase of training will include end user training for user agencies, to include Law, Fire, EMS, and EMA agencies.
- 7.1.4** The fourth phase of training shall provide technical training to technical staff members from the COUNTY to Tier 1 level support. Vendor must also supply all training manuals, specialty service aids, programing cables, key codes, equipment and passwords required to routinely service and maintain the equipment directly to the COUNTY.
- 7.1.5** The successful vendor must provide the requisite documentation in the form of training and/or operator's manuals for each component to allow the COUNTY personnel or vendor's local service representative can adequately maintain the components on both a routine and corrective basis.
- 7.1.6** Training shall include a description of the theory of operational and practical maintenance procedures for the radio system.
- 7.1.7** Upon completion of the course, the County will be qualified to perform setup, configuration, maintenance, and troubleshooting of the radio (system) equipment.
- 7.1.8** Instructional material shall be included as part of the training package.

8.0 WARRANTY AND MAINTENANCE

8.1 Warranty

- 8.1.1** Vendor's warranty period begins upon final system acceptance.
- 8.1.2** Vendor is to clearly identify in a synopsis the details of the manufacturer's warranty for component items. A description of this warranty for each component that has a stand-alone warranty is to be included. All service labor is to be included in warranty period.
- 8.1.3** The COUNTY as an option is requesting pricing for Tier 2 and Tier 3, 24 x7 service with all labor included beyond the manufacturer's warranty. Maintenance pricing is for a period of one year, three year and 5 years from the time of final system acceptance after warranty expiration. An option for parts inclusion will be accepted.

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- 8.1.4** This service will be on site for all fixed equipment and in the vendor's service facility for all other equipment.
- 8.1.5** The vendor will provide guaranteed two (2) hour response time for service at the center and at remote facilities.
- 8.1.6** The vendor will provide pickup and delivery services of equipment as part of this pricing.
- 8.1.7** Additionally, the vendor should provide a guaranteed response time for the pickup and delivery.
- 8.1.8** Vendor shall identify all costs associated for spare parts that will be inventoried specifically for the COUNTY radio system, with guaranteed quantity.
- 8.1.9** The COUNTY reserves the right to accept or reject these quotations at the time of award of the overall contract.
- 8.1.10** The vendor shall provide a 24-hour toll-free number for service and support to meet above requirements.
- 8.1.11** Vendor's warranty, maintenance and refresh costs must include all firmware, software and flash code updates.

8.2 Maintenance

- 8.2.1** Vendor must provide a detailed ongoing maintenance plan to ensure that the COUNTY's equipment is maintained in a satisfactory fashion. This plan is to include the following:
- Description of Vendor's Service Shop capabilities.
 - Details of plan on providing 24 by 7 service to the COUNTY.
 - Identification of equipment and specific individuals available and qualified to service the centers equipment. Include key personnel resumes for those individuals that will be assigned maintenance duties.
 - Response time guaranteed commitment to service on site radio equipment.
 - Commitment of spare equipment on shelf for maintaining the COUNTY's network.
 - Description of the experience dealing with equipment like the proposed equipment by Vendor's personnel.
 - Self-diagnostic and VPN or dial-up modems for diagnostic troubleshooting are anticipated.
 - Following corrections of system failures, Vendor shall provide the COUNTY with a written report identifying the nature of the failure, corrective action taken, and the length of time required to restore normal equipment operation.
 - Vendor shall ensure the local (authorized) service representatives have sufficient parts inventory, equipment, and certified employees to maintain systems.
 - Vendor shall provide a listing of its program management and technical support personnel available to support the project during the warranted period. This will include office telephone numbers, emergency telephone numbers, pager, and cellular phone numbers.
 - Vendor shall maintain the County's VHF fire paging system in addition to the new system being proposed.

9.0 SYSTEM DOCUMENTATION

9.1 Contact List

Vendor shall provide the COUNTY with a list of technical support contacts, including the following:

- Project Manager
- Authorized third-party maintenance providers (i.e., local radio vendors)

9.2 System Configuration

The documentation package shall contain a block diagram and system description of the configuration, including the following:

- General overview of the hardware (system) configuration
- General overview of the RF (system) configuration
 - To include propagation / engineering studies
- General overview of the software (system) configuration
- General overview of the tower / transmitter site(s) configuration
 - Antennas
 - Associated wiring (cabling)
- Operational Requirements
- Radio network architecture
- Frequency band of operation
- Expansion capabilities

9.3 Technical/User Manuals

The documentation package shall contain the following:

- Operations manuals
- Technical / Service manuals

10.0 COUNTY CONTACT INFORMATION

Proposals are due to County Administration by May 1 at Noon. Proposals must be in a sealed package. Proposals will be opened publicly at the Cherokee County Council meeting on May 1, 2023 at 5pm.

Questions regarding this RFP should be addressed to rfp@cherokeecountysc.com and should include the RFP number in the subject line, and must be received by April 15th at 5pm. All questions and answers will be posted on the County's website under this RFP solicitation.

Bid packages can be obtained on our website <https://cherokeecountysc.gov/finance-purchasing/> under the "Cherokee County Bids/Specs" tab.