



Forsyth County

**Request for Proposal
For
BoCC Technology Refresh Project**

**Proposals Will Be Received Until
12:00 Noon, Wednesday, November 1, 2017**

in

City/County Purchasing Department

City Hall Suite 324, 101 North Main Street, Winston-Salem, NC 27102

**MANDATORY PRE-PROPOSAL CONFERENCE WILL BE HELD
9:00 AM, Wednesday, October 25, 2017**

Meet inside the main lobby entrance of Government Center – 201 North Chestnut Street, Winston-Salem, NC 27101 to be escorted to the room location.

ADVERTISEMENT FOR BIDS

BoCC Technology Refresh Project

Sealed proposals endorsed **BoCC Technology Refresh Project** to be furnished to Forsyth County will be received by the City/County Purchasing Department in Suite 324, City Hall Building, 101 North Main Street, Winston-Salem, N.C. **until 12:00 Noon, Wednesday, November 1, 2017.** To obtain the complete proposal document or receive instructions for submitting proposals contact Jerry Bates via email jerryjb@cityofws.org, phone 336-747-6939, or visit the Purchasing Department at same location from 8:00 A.M. to 5:00 P.M. Monday through Friday. The County reserves the right to reject any and/or all proposals, bids, to waive informalities in the bids, and to choose the bid that is in the best interests of the County.

A **MANDATORY** pre-proposal Conference will be held at **9:00 AM, Wednesday, October 25, 2017. Meet inside the main lobby entrance of Government Center – 201 North Chestnut Street, Winston-Salem, NC 27101 to be escorted to the room location.** The purpose of this conference is to explain the scope of work involved and to give prospective proposers the opportunity to discuss the existing conditions and work parameters. Staff will be present to answer questions. Forsyth County will not entertain Proposals from firms who do not have a representative attend this meeting. A sign-in sheet will serve as the attendance record. All bidders will be limited to two representatives.

Jerry Bates
Purchasing Director

This document IS NOT the complete proposal. To obtain the completed proposal specifications contact Jerry Bates via email jerryjb@cityofws.org, by phone 336-747-6939, or visit the Purchasing Department, City Hall Building, Suite 324, 101 North Main Street, Winston-Salem, NC during regular office hours.

Forsyth County BoCC Technology Refresh Project

TECHNICAL SPECIFICATIONS AND REQUIREMENTS

Introduction

Forsyth County Management Information Services (MIS), by way of this specification and scope of work, requires the contractor to provide a turn-key audiovisual system installation including, but not limited to, all cabling, loudspeakers, projection equipment, mounting hardware and electrical components including the necessary equipment, interconnections, transducers, labor, and services required to meet the functional requirement outlined in this RFQ.

Project Overview

The Forsyth County Commissioners' Meeting Room located on the fifth floor of the Forsyth County Government Center at 201 N. Chestnut Street, Winston-Salem, NC is in need of audiovisual upgrades. These upgrades and contract requirement are described below.

1. Audio Systems

- a. The audio system will consist of 14 existing gooseneck microphones. These microphones will serve the 7 commissioners and 2 staff members at the dais, 4 staff positions on two tables, and 1 microphone at the lectern. In addition, one wireless microphone is located on the lectern. These microphones have existing master mute controls at the chairman and clerk locations which should be maintained. These microphones will also have a master mute control on the touch panel. A separate mute control for the lectern will be included on the touch panel.
- b. A new wireless handheld microphone will be added in addition to the existing Shure SLX4 microphone. A Shure UA844 antenna distribution system will be added. Two microphone stands should also be included.
- c. An additional low profile boundary microphone should be mounted to the top ledge of the lectern. This microphone will be controlled from the touch panel, it should mute with the gooseneck at the lectern and will not be used for voice reinforcement. It will be routed through the DSP to supplement the audio feed to the production system.
- d. The current hard of hearing system will be replaced with a new RF system with 8 rechargeable receivers and a charging tray.
- e. Audio from all microphones will be routed through a digital signal processing (DSP) unit that will provide voice reinforcement through the existing amplifier and loudspeakers.
- f. The DSP will be programmed to allow for proper gain before feedback and maximize intelligibility.
- g. The DSP will also receive program audio from a separate AV switcher and mix program audio with voice reinforcement to the ceiling speakers. Separate program volume controls and audio selection will be provided on the touch panel.
- h. The DSP will have the capability of providing VOIP conferencing capability with control from the touch panel.

- i. The DSP will have an available input and output for future video conferencing capabilities.
- j. The DSP will provide audio to the video production system for broadcast as well as 6 press feed audio outputs at the existing wall plate.

2. Video System

- a. The video system will have 6 sources. These sources will be a Clerk PC(OFE), a Manager PC(OFE), dais laptop(OFE), a new WolfVision 8Plus document camera located at the lectern, a lectern PC(OFE), and a feed from the TriCaster for Skype calls. All PC and laptop connections will be via a video over twisted pair transmitter capable of receiving HDMI and VGA inputs with audio. The transmitters should be auto switching and routed to a matrix video switcher. Each source except the TriCaster will also be individually routed to the production video system.
- b. The video system will contain 5 separately routable outputs that will provide video to the dais monitors, staff monitors, lectern monitor, audience monitors, and program audio output.
- c. The dais monitors will replace the existing 9 monitors that are located under the desk. The monitors should be 16:9 ratio, mounted under the desk and be as large as possible while still providing a clear view through the glass worktop. All of these monitors can be routed through a distribution amplifier to provide the same source view and should go to standby when no source is present and the system is powered off. Sources to the dais monitors will be routed from the touch panel.
- d. There will be 4 desktop monitors located at the two tables for the staff. These monitors should be of equal ratio and resolution as the dais monitors and will display the same source as the dais at all times.
- e. The laptop at the lectern will be replaced with an OFE desktop PC. The contractor shall provide two monitors mounted on the existing lectern. One monitor (touchscreen) will be used as the primary monitor for the PC and the second monitor (may be smaller) will be used as a room source display that will match the dais. These monitors should be mounted with as low a profile as possible to maximize working space on the lectern and not impede the view of the presenter from the dais. The existing laptop interface at the lectern should be covered with a blank black plate.
- f. The two existing projection screens will be replaced with new 116"x65" electric screens. The screens will be mounted in the existing locations with all necessary sheetrock work and matching paint included to finish the installation. Two new 5000 lumen laser projectors will be installed in the existing locations. The projectors will be fed through a video over twisted pair receiver from the video matrix switcher. Both projectors will display the same source at all times. Screens and projectors will be controlled through the control system.
- g. The video matrix switcher will be capable of routing all room sources (not including cameras) to the displays listed and provide control where applicable over twisted pair cable. The matrix switcher will also be capable of providing a selected program audio feed to the DSP.

3. Video Production System

- a. The video production system will provide a means to broadcast all proceedings in

high definition to the local cable TV provider via a TriCaster TC1 video production switcher. Coordination with Spectrum will be required in order to provide the proper signal format to their equipment. All broadcasts and archived video files should be capable of 1080p video. Depending on availability from Spectrum and limitations of Channel 13, broadcast may be required to be scaled down to NTSC.

- b. The system will also have the ability to live stream the proceedings as well as archive the meetings on a local hard drive.
- c. The production switcher will receive feeds from 4 new HD room pan/tilt cameras as well as a feed from all room video sources.
- d. The production system will be housed in a new production desk in the existing production room. This desk should allow for two operators to work comfortably.
- e. The production system will contain two properly sized video monitors mounted to adjustable arms for display of the TriCaster multi view and editing and two desktop power speakers mounted on stands at ear height for audio monitoring with a small mixer to select source and volume to audio monitors.
- f. The system will have 4 new integrated HD pan/tilt cameras that will replace the existing cameras. Each camera location should have a minimum of 1 SDI cable for video, 1 CAT6 for control, and 1 CAT6 spare.
- g. The system will have an independent pan/tilt controller capable of controlling all 4 cameras.
- h. The system will provide two Program out SDI feeds to the existing Press Output plate.
- i. The production system will contain an independent power switching system so that it may be operated while the meeting room is not in use.

4. Control System and Power

- a. The contractor shall provide all control system programming to provide a fully functioning system. At least 8 hours of additional programming time should be allowed for modifications to the control system after initial training.
- b. The control system will include a 10” or greater panel located at the clerk’s desk.
- c. A keypad for lighting presets will be provided (location TBD).
- d. The control system will interface with the existing DMX512 lighting system and will be programmed so as not to drop lighting levels if the control system is reset.

i. Control Details

1. The touch panel should contain a logo screen to be displayed when the system is powered off.
2. Upon touching the logo, the touch panel should change to a main page, the rack should power on, and default audio levels should be set.
3. Main Page- A list of available sources should be provided and upon selecting a video source it should be routed and all displays should be powered on, including the projectors.
4. Main Page- Program volume controls including mute.
5. Main Page- Audio conferencing with dial controls, caller volume, and privacy separate from room microphone mute, this may be done through a pop up page if needed.
6. Main Page- Lighting controls, this may be done through a pop up page if needed.

7. Main Page- Power button that brings up a confirmation page to power the system down and return to the logo page.
8. Tech Page- Mute for dais microphones, volume with mute for lectern microphone, projection screens raise/lower, and individual power controls for the two Laser Projectors.
9. All touch panel pages will be presented to the customer for approval before installation begins so that changes can be made if necessary.

5. Lectern

- a. The existing lectern will be reused in the system.
- b. A new document camera will be located at the lectern.
- c. Monitors and microphones located at the lectern are described above.

6. Power

- a. The system will contain a power conditioner/sequencer to power down equipment in the main equipment rack. The existing ETA power conditioner may be used.
- b. Equipment power should be sequenced as to prevent damage to systems so that the amplifier is powered on last and powered off first.
- c. The contractor will provide power strips in the rack to allow for 20% spare capacity for future equipment.

7. Racks

- a. The contractor may repurpose the existing Middle Atlantic rack.
- b. All rack wiring shall be neatly arranged and strapped with all wires machine labeled to correspond with as built drawings.

8. Cable

- a. General
 - i. Conductor jackets shall be color-coded to enable consistent polarity.
 - ii. All cables shall be labeled to match final as-built drawings.
 - iii. Use plenum rated cable where required by code.
 - iv. Cables noted are referenced for minimum level of quality.
- b. Audio
 - i. Microphone: Shielded, stranded 22 AWG-1 pair. (Belden 8451)
 - ii. Line Level Cable: Shielded, stranded 22 AWG-1 pair. (Belden 8451)
 - iii. 70V Speaker: Stranded 16 AWG - 1 pair. (Belden 6200UE)
- c. Video
 - i. SDI: RG-6/U Type, 18 AWG solid. (Belden 1694A)
 - ii. HDMI: 24k gold plated 18 Gbps bandwidth (Crestron Certified HDMI)
 - iii. Twisted Pair: 4 pair Category 6 (color green). (Belden 7882A)
- d. Data/Control
 - i. Control System Cable: 18AWG/22AWG 2 pair. (Liberty AXLINK/CRESNET)
 - ii. Data Cable: 4 pair Category 6 (color green). (Belden 7882A)
 - iii. RS232 cable: Shielded, stranded 22 AWG-1 pair. (Belden 8451)

9. Scope

- a. Contractor shall provide a turn-key installation including, but not limited to, all cabling, projection equipment, mounting hardware, furniture and electrical components including the necessary equipment, interconnections, transducers, labor,

and services required to meet the functional requirement outlined in this document unless otherwise stated as permissible to reuse existing or owner furnished equipment.

- b. The Contractor will be held responsible to have examined the site and premises and satisfied them self as to existing conditions under which they will be obligated to perform their work.
- c. The Contractor shall obtain all necessary permits for the execution of their work.
- d. Patch, repair, finish and paint any surfaces that are damaged or demolished for access during this work and return all room finishes to their initial condition.
- e. Verify all power requirements for each equipment location and notify the owner immediately if additions or changes need to be made.
- f. Deliver to the owner all documentation as described in this document.
- g. Provide all training as described in this document.
- h. All components provided are to be new, unused, and free from any defects, there shall be no exceptions without the owner's written approval.
- i. The contractor shall provide and install all of the required material whether specifically addressed in this specification or not to provide a complete and working system.

10. Documentation

- a. Equipment Manuals
 - i. All manuals should either be neatly bound in a 3" 3 ring binder or provided on a CD together with any and all printed manuals.
- b. Software
 - i. All system information shall be included on a CD-ROM to be presented to the owner at signoff. This shall include:
 - 1. An excel spreadsheet listing all equipment included in the system including Manufacturer, Model number and serial number in an excel spreadsheet format.
 - 2. All system as built drawings shall be included in a dwg format.
 - 3. All final source code will be provided to the customer on disk in an editable format at the conclusion of this contract. All source code is to be licensed to the owner for this project. The contractor will maintain the copyright of the source code. The owner will have the ability to modify the source code with the understanding they are responsible for any effects caused by these modifications.
 - 4. Any DSP program used for audio setup.
 - 5. Any quick reference guides or system instructions in a word document format or PDF document format.
- c. Drawings
 - i. One set of B sized as built drawings showing all signal routing and components shall be mounted in a plastic sleeve inside the rack.
 - ii. One set of D sized as built drawings showing all signal routing and components shall be turned over to the owner.
- d. Instructions
 - i. A quick reference guide for simple instruction on how to operate the system shall be provided. This guide should be used during training and remain on

site in a laminated format.

- e. Forsyth County project will not be considered complete and closed out until all required documentation is provided to Forsyth County MIS as specified and all specifications are met.

11. Training

- a. A minimum of 8 hours of training should be included in this contract. The field engineer and programmer should be present for training on the control system and the use of the main room in the event that modifications need to be made to the system. The remaining training time will be for training on use of the TriCaster with production personnel.
- b. A representative should be onsite for the first two uses of the system.

12. Warranty

- a. All manufacturer's and subcontractor's warranties should be transferred to the owner at the conclusion of work.
- b. Guarantee all installation work to be free of faulty system-wide workmanship. All purchased equipment under this Contract shall be free from defects for a period of 12 months from date of acceptance by owner.
- c. Guarantee the replacement of faulty equipment and workmanship within 72 hours of notification at no cost if failure occurs within warranty period.
- d. Register all manufactures warranties in the owner's name for any warranties that exceed the warranty in this contract.
- e. All existing equipment used for this contract should be covered for replacement under the same warranty period and terms as described above.

13. Maintenance

- a. With this bid, submit a service and maintenance contract under the same conditions as this contract that that will cover the system for an additional 2 years beginning at the conclusion of the original one year system warranty.

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14. Submittals

- a. Contractor shall comply with the General Requirements and General conditions of this specification.
- b. Bid Submittals: The contractor shall supply the following documents with the bid proposal.
 - i. Firm description of the contractor and a copy of the contractor's license.
 - ii. Four examples of similar jobs within the past 2 years.
 - iii. A list of major equipment components to be used in the system by manufacturer and model number including existing equipment to be reused with line item cost.
 - iv. **Breakout pricing per Appendix B.**
 - v. WMBE - If applicable the contractor shall provide a Letter of WMBE Certification.
- c. Construction submittals: The contractor shall provide the following for approval

before work begins:

- i. One line diagrams of all system connections with wire labels.
- ii. Main rack layout diagrams and a layout diagram of the production desk.
- iii. Touch panel layouts.
- iv. County required certificate of insurance documentation per Appendix A.
- v. Provide list of all installers, project managers, foremen, etc., that will be working on this project including their names and a copy of their training documentation from the manufacturer. The contractor will update this information during course of the project if there are any personal or training certification changes.
- vi. Submit appropriate written specifications for components, if required by owner.
- vii. Work will not proceed without the Owner's approval of the submitted items.
- viii. The contractor must receive written approval from the Owner for any substitutions of materials.
- ix. The contractor, his employees, and any contractor sub-contractors will abide at all times by all OSHA regulations and the owners safety protocols and procedures.
- x. Fire Stop Codes and Standards: Sealing of openings between floors, through rated fire and smoke walls, existing or created by the contractor for cable pass through shall be the responsibility of the cabling contractor. Sealing material and application of this material shall be accomplished in such a manner that is acceptable to the local fire and building authorities having jurisdiction over this work. Creation of such openings as necessary for cable passage between locations shall be the responsibility of the cabling contractor's work. Any openings created by or for the contractor and left unused shall also be sealed as part of this work.
- xi. It is the expectation of Forsyth County that the contractor will comply, and the contractor agrees to comply, with all applicable federal immigration laws in its hiring and contracting practices relating to the services covered by this contract involving County funds, as outlined in the Resolution adopted by the Forsyth County Board of Commissioners.

15. Contract Option #1 (per Appendix B)

- a. The contractor shall provide an option #1 to the proposal for a portable production system as follows.
 - i. TriCaster Mini HD-4i bundle with control surface and travel case.
 - ii. GeChic 2501C Monitor.
 - iii. Qty 2: Shure FP25/SM58 wireless microphone system.
 - iv. Behringer QX1002USB audio mixer.
 - v. Sony MDR7506 Headphones.
 - vi. Qty 2: Sony HXRNX100 Camcorder.
 - vii. Qty 2: Magnus VT-4000 Camera Tripod.
 - viii. All cables and connectors to make a complete system. Camera HDMI cables should be a minimum of 20 feet in length.

16. Project Schedule

PROJECT START DATE - Upon Executed Contract (anticipated 11/30/2017)
PROJECT COMPLETION DATE - 12/31/2017

The contractor will complete the project as defined in this specification and scope of work in its entirety and on schedule. The contractor is required to meet Forsyth County's schedule for completion.

17. Change Orders

All change orders, changes to the scope of work, or specifications, are to be approved in writing before they are made and can only be approved by the Forsyth County MIS department. All changes orders will be issued as an Addendum and shall be signed by the owner and the contractor before any changes are made.

18. Changes and Alternates

- a. Forsyth County MIS will consider any changes or deviations from specifications defined in this document as non-responsive.
- b. Forsyth County MIS will consider any changes or deviations from the pricing formats as defined in this document as non-responsive.
- c. Forsyth County MIS will consider any changes or deviations from the Bid Schedule or Project Schedule as defined in this document as non-responsive.
- d. Any item of equipment or material not specifically addressed on the drawings or in this document and required to provide a complete and functional cabling installation shall be provided in a level of quality and cost consistent with other specified items.

19. Disclaimer

Nothing contained herein (specifications) allows the contractor to perform in a manner deficient of providing Forsyth County with a complete and accurate job. Any errors or omissions contained herein do not preclude the contractor from installing a functional system. If such an omission is apparent to the contractor upon review of this specification and scope of work, the contractor bears responsibility to inform Forsyth County so adjustments can be made. Any clarifications or modifications affecting the specifications and scope of work of this project will be provided by the County and sent via email to the contractor in the form of an addendum. This process places the burden of such omissions and errors upon the contractor, and discharges Forsyth County of its responsibility for a complete and functionally correct system installation.

20. Contractor Qualifications

- a. Responsible for workmanship and installation practices in accordance with AVIXA Best Practices. <https://www.infocomm.org/cps/rde/xchg/infocomm/hs.xsl/index.htm>
- b. The contractor will have demonstrable design and installation training with certifications of competence. Certified training will be industry recognized and at least equal to:
 - i. Avixa CTS-D
 - ii. Avixa CTS-I
- c. Provide a full time on site foreman who has been certified as described.
- d. Contractor shall provide a project manager who will act as a single point of contact between contractor and the owner. This project manager must attend meetings as required and have the authority to make decisions regarding project implementation. Additionally, the chosen project manager must have a proven track record of managing installations of similar size. Forsyth County reserves the right to have the assigned project manager removed and a new project manager assigned.
- e. Installers will be specifically qualified for each system being installed under this section. Provide certification documentation for each installer to the customer before starting work on this project.

21. Site and Workplace Meetings

- a. It is the responsibility of the contractor to attend all mandatory meetings regarding this project.

22. Subcontractors

- a. The contractor will notify Forsyth County MIS of any subcontractors that may be used for this project and will define the scope of work to be performed by the subcontractor.
- b. If the subcontractor fails to perform the specified scope of work, Forsyth County shall have the right to remove subcontractor from the project. In no way will this release the contractor from his obligations under the contract. Contractor shall hold harmless and indemnify Forsyth County against any claims, suits, liens or other actions made by subcontractor due to this agreement.

23. Delivery, Storage, Handling, Protection, and Debris Removal

- a. Contractor is responsible for the handling of all materials and all costs associated with material handling. It is the contractor's responsibility to coordinate delivery schedules with the project schedule.
 - i. Delivery and Acceptance Requirements:
 - ii. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- b. Storage and Handling Requirements:
 - i. Store and handle materials in accordance with manufacturer's instructions.
 - ii. Keep materials in manufacturer's original, unopened containers and packaging until installation.
 - iii. Store materials in secure, clean, dry area indoors.
 - iv. Protect materials during storage, handling, and installation to prevent damage.
 - v. Protect installed communications horizontal and vertical cabling from damage during construction.
 - vi. It is the responsibility of the contractor to discard debris on a daily basis and to keep the work area clean.

24. Damages

- a. The contractor will be held responsible for any and all damages to portions of the building caused by it, its employees or subcontractors; including but not limited to:
- b. Damage to any portion of the building caused by the movement of tools, materials or equipment.
- c. Damage to any component of the construction of spaces "turned over" to the contractor.
- d. Damage to the electrical distribution system and/or other space "turned over" to the contractor.
- e. Damage to the electrical, mechanical and/or life safety or other systems caused by inappropriate operation or connections made by the contractor or other actions of contractor.
- f. Other damage to the materials, tools and/or equipment of Forsyth County, its consultants, general contractor, subcontractors, architect, other contractors, agents and leases.

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