

INTERNAL CONNECTIONS BID#005 WIRELESS NETWORK LAWRENCE COUNTY SCHOOL DISTRICT

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Lawrence County School District Wireless RFP

INTRODUCTION

Lawrence County School District (“LCSD”) serves approximately 2,100 students at one elementary school, one middle school, two K-8 schools, one Technical and Career Training Center and one high school. The school district has approximately 300 employees located at seven campuses (six schools and the central office.)

1.0 Objective

LCSD is seeking proposals from qualified vendors to replace and/or upgrade the existing wireless network and related network infrastructure for the Lawrence County School District as described in this Request for Proposal (“RFP”). The locations, addresses and drawings for each campus will be provided. The upgraded wireless network shall be a controller based, enterprise class wireless network. The purpose of this RFP is to explore the various options currently supported through and dependent on Internal Connections funding.

2.0 Background

The network infrastructure of LCSD is less than five years old and is capable of supporting the anticipated demands for high-densities of Wi-Fi enabled devices, though some updated switches and Battery Backup UPS devices will be required. Existing Cisco POE switches will be used. Additional switches compatible with and capable of being managed by the existing Cisco network may be required. LCSD is currently standardized on Microsoft Active Directory.

The LCSD network infrastructure consists primarily of Cisco Catalyst 2960X switches, but network hardware and software from other manufacturers will be considered, provided they match or exceed the capabilities of the existing Cisco switches. The district consists of buildings built with a variety of construction materials and methods including concrete block and steel.

LCSD currently operates a Ruckus wireless network with approximately 105 wireless access points. This network will be controlled by a new Ruckus Virtual SmartZone Controller. New devices should be interoperable and capable of being managed by this Ruckus Virtual SmartZone Controller.

A description of the current network and drawings will be provided to vendors at the required onsite review/survey.

2.1 Scope of Service

- 1) Vendor must attend a mandatory onsite walkthrough to complete a review/survey to determine the placement of access points within the specified time frame as indicated in section 2.5 below.
- 2) All currently wired locations must continue to be provided wired service.
- 3) The wireless network shall be designed by the Vendor to support at least thirty high-speed wireless devices in each classroom. Computer Labs and Libraries shall be designed to support at least fifty devices. Cafeterias and the multipurpose building shall support up to 200+ devices. These devices should be equivalent to the Ruckus R610 access point or better.
- 4) Switch ports shall be added to each MDF/IDF hosting access points using switches equivalent to or better than the Cisco Catalyst 2960X switch. The switch must include POE ports. LCSD should be able to manage and stack these switches with the existing Cisco 2960X switches.

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- 5) Rackmount Battery Backup UPS devices will be added to each MDF/IDF. These should include network management cards.
- 6) Vendor is responsible for configuring all devices needed to implement the new wireless network. LCSD technical staff shall be consulted prior to making any and all changes to any LCSD system.
- 7) The wireless network shall be configured to integrate with and utilize the District owned Cloudpath System for device onboarding during installation and setup. LCSD Staff will be responsible for installing any services needed on LCSD servers, and will be consulted prior to Vendor configuring those services.
- 8) The Vendor shall provide all physical installation.
- 9) Vendor shall work with LCSD staff to configure a Guest VLAN and SSID that provides limited network access.
- 10) A complete post-installation site survey shall be completed to show that all educational and office spaces have a minimum RSSI of -72 dBm (in both the 2.4 GHZ and 5 GHZ bands) in all locations of those areas. This survey shall be provided to the district once complete.
- 11) All work not found in conformance with the intent of the proposal shall be repaired promptly at no additional charge to LCSD.
- 12) The Vendor must provide a guarantee that the system will operate and perform as advertised when students and staff fully utilize the system. This includes minimum RSSI of -72 dBm (in both the 2.4 GHZ and 5 GHZ bands) in all designated spaces. The Vendor will be required to provide the appropriate devices at no charge if spaces are found that do not meet the requirements.
- 13) Vendor will provide any additional and/or replacement wiring, patch panels, terminators and/or patch cables as needed to complete this project.
- 14) Vendor is responsible for all project management; this is to be a turn-key solution with involvement of LCSD staff limited to specification of network security parameters, VLAN definition, and installation of any needed services on LCSD-owned servers.

2.2 Specifications

- 1) Equipment must meet or exceed the 802.11 a/b/g/n/ac standards.
- 2) The system must be Wi-Fi Certified for 802.11 a/b/g/n/ac.
- 3) Each access point must support 802.11ac MU-MIMO.
- 4) Each access point must support WPA2 Personal/Enterprise authentication and AES/CCMP encryption.
- 5) Each access point must support 802.11ac [chip based] Transmit Beamforming.
- 6) Each access point should provide adaptive directional/sectorized antenna patterns for high density deployment, where the network capacity is the key. This technology must be available to focus the energy on the destination device and minimize radio interference surrounding the Access Point. Further:
 - a. The vendor should specify if the activation of such feature is still compatible with 802.11ac spatial multiplexing. If respondent supports chip based beamforming, spatial multiplexing (MIMO B) must also be supported.
 - b. Specify the number of adaptive directional antenna elements supported by the Access Points.

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- c. Specify if the adaptive antenna is capable of selecting between or using a combination of horizontally and vertically polarised antenna elements to best match the client device antenna orientation.
 - d. The antenna system should provide at least 3dBi of physical antenna gain and at least 10dB of interference mitigation.
- 7) Each access point should support the following advanced radio technologies:
 - a. Polarization Diversity with Maximal Ratio Combining (PD-MRC) to improve performance robustness regardless of client device orientation.
 - b. Maximum Likelihood Decoding (MLD) to improve client uplink performance.
 - c. Low Density Parity Check (LDPC) to improve client uplink performance.
 - d. Space Time Block Coding (STBC) to improve client downlink performance.
 - e. Packet Aggregation to improve client downlink performance.
- 8) Each access point must support DFS (Dynamic Frequency Selection) in the respective 5 GHz bands and should be at least EN 301 893 v1.6.1 compliant.
- 9) Security mechanisms must be in place to protect the communication between the Access Point controller and the Access Points.
- 10) Each access point must support band steering of 802.11a/n/ac capable clients to the 5 GHz band when appropriate. Further:
 - a. The band steering client RSSI threshold should be configurable to dictate at which minimum signal strength a client is band steered.
 - b. They should support Band-Balancing threshold to prevent the 2.4 GHz band becoming starved of clients at the expense of overloading the 5 GHz band.
- 11) Each access point must support an “air-time fairness” mechanism to prevent slower transmitting Wi-Fi client devices from unfairly penalizing clients that are capable of faster transmission/throughput i.e. 802.11b/g/a client devices penalizing the performance of 802.11n/ac devices.
- 12) Each access point must support client load balancing to fairly distribute clients between APs in high density deployments. Further:
 - a. The feature should support configurable client RSSI thresholds dictating the signal strengths when clients should or should not be load balanced.
- 13) Each access point must support 802.1q VLAN tagging and tagging of each WLAN individually. Further:
 - a. There should be a mechanism to over-ride a WLANs configured VLAN tag per Access Point.
- 14) Each access point must support up to 500 concurrent device associations subject to conditions and configuration. Please state any limitations.
- 15) Each access point should support insertion of DHCP option 82 information to aid location specific services.
- 16) Each access point must support multicast to unicast traffic conversion for reliable delivery of multicast packets to clients.
- 17) The administrator must be able to turn off the AP LEDs.
- 18) For troubleshooting purposes the administrator must have the ability to remotely capture 802.11 and/or 802.3 frames from an access point without disrupting client access.
- 19) Each switch proposed must be compatible with and have equal or greater capabilities to the Cisco Catalyst 2960X.

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- 20) Each switch will have sufficient gigabyte ports to meet the two to one requirement for switch ports.
- 21) Each switch will have sufficient power over Ethernet (POE) ports to meet the two to one requirement for switch ports.
- 22) Battery Backup UPS devices should provide a minimum run time of 10 minutes with adequate outlets to support the number of switches in the rack.
- 23) Any area that does not have a drop ceiling will require a wall mount bracket or other mounting option and suitable wiring raceways and moldings to achieve a finished installation appearance.
- 24) LCSD prefers new network cabling drops using Category 6 cable (or higher) be installed for each connection. Use of long patch cables is prohibited. Vendor will be responsible for any additional or replacement cabling.

2.3 Warranties

All warranties by Vendor and manufacturer on both products and labor must be specified in the proposal. The Vendor's warranties shall commence with acceptance of/or payment for the work in full. Minimum acceptable warranty on hardware, parts, and labor is three (3) years.

2.4 Service

The Vendor must provide terms of service should repair become necessary and the work and materials needed that are not covered under warranty.

2.5 Vendor Site Visits

Vendors may arrange a site visit to be conducted between the hours of 9 AM and 3 PM beginning January 22, 2019 and continuing through February 8, 2019. To schedule a site visit, you must contact Mr. Bobby Dawson at (601) 587-2506 or email (bobby.dawson@lawrence.k12.ms.us) to arrange a time and date no less than two (2) business days prior to the desired visit.

3.0 Evaluation Methodology

Each proposal will be evaluated based on criteria and priorities as defined by LCSD, who will choose the submission that, taken as a whole, and in LCSD's sole opinion, is in the best interest of the organization. Proposals should address the evaluation criteria itemized below.

The evaluation criteria include, but are not necessarily limited to, the following:

- Price for all parts, labor, design, project management, programming, and shipping and handling.
- The proposal's alignment with the desired solution as described in section 2, above.
- The Vendor's overall performance record, including responsiveness and reputation based upon feedback from available references.
- The perceived quality of the Vendor's response, including completeness, accuracy and appropriateness.
- Stability/risk of Vendor, including assessment of risk that they may not be able to fulfill responsibilities.
- Vendor location for base of operations and support personnel.

3.1 Evaluation Criteria

- Price – 40%

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- Service and Support location and experience – 30%
- Trainer Qualifications and Experience – 15%
- Quality of References – 15%

TERMS AND CONDITIONS OF REQUEST FOR PROPOSAL (RFP)

4.0 Response Submission

Responses to this RFP must be submitted and delivered to LCSD as “sealed bids” no later than 10:00 AM on Friday, February 15th, 2019 (“Final Submission Date”). Proposals must include a digital copy on CD or flash drive. Acceptable digital formats include Word, RTF or PDF. It is the sole responsibility of the respondents to ensure that their responses arrive in a timely manner. LCSD will reject all late arrivals. Envelopes containing responses to this RFP shall be so marked as to be easily identified as containing RFP proposals. The outside of the envelope shall be identified as follows:

“Wireless Network Proposal”
Internal Connections Bid #005
Lawrence County School District
Attn: Bobby Dawson
346 Thomas E Jolly Drive
Monticello, MS 39654

Oral, telephone, electronic mail or fax bids shall not be considered, nor will modifications of proposals by such communication be considered. The completed proposal shall be without erasures or alterations. Delivery of the proposals will be considered authorized by the service provider to make a contract, if awarded.

Any questions should be made in writing via e-mail to Mr. Bobby Dawson, bobby.dawson@lawrence.k12.ms.us, Network/Systems Technician.

4.1 Costs Associated with Preparation of the Vendor’s Response

LCSD will not be liable for any cost incurred by the respondents in preparing responses to this RFP or negotiations associated with award of a contract.

4.2 Proposal Binding Period

All prices quoted in The Vendor’s response will remain in effect for a period of 180 days from the issuance date of the vendor’s response. LCSD reserves the right to accept such pricing at any time during that 180 day period.

4.3 Bid Opening Procedure

All bids will be opened at 11:00 AM on Friday, February 15th, 2019, and all bidders and other interested persons are invited to be present. Bid opening will take place at the Lawrence County School District Board of Education Office at 346 Thomas E Jolly Drive, Monticello, Mississippi.

Vendors are welcome to attend, but attendance is not mandatory. Lack of attendance will NOT be construed to indicate lack of interest nor will it reflect negatively on Vendor during review of proposals.

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4.4 Omissions

Omissions in the proposal of any provision herein described shall not be construed as to relieve the Vendor of any responsibility or obligation to the complete and satisfactory delivery, operation, and support of any and all equipment or services.

4.5 Evaluation of Responses

LCSD may at its discretion and at no fee to LCSD, invite any Vendor to be available for questioning during the response evaluation for the purpose of clarifying statements in the response. Further, LCSD may, at Vendor's expense, request Vendor to meet with LCSD for a personal interview.

4.6 Right to Reject

LCSD reserves the right to accept or reject all proposals or sections thereof and when the rejection is in the best interest of LCSD and reserves the right to award without further discussion. LCSD reserves the right to waive minor irregularities of any proposal and to negotiate the terms of any proposal.

4.7 Basis of Award

LCSD will award a contract based on the following terms:

- 1) E-rate approval by USAC.
- 2) Must have current USAC SPAC.
- 3) Approval by the Mississippi PPRB (Public Procurement Review Board).
- 4) References of at least three (3) installations of similar application size and complexity. (All references should include: a contact person, dates of work, mailing address and telephone numbers.)
- 5) Proof of certifications and qualifications for all engineers and installers associated with this project.
- 6) Issuance of a Purchase Order will be contingent upon USAC acceptance and funding of the project.

4.8 Insurance Requirements

Within ten (10) days after notification of award, The Vendor shall furnish to the Lawrence County School District a Certificate of Insurance showing compliance within the following limitations:

- 1) The Vendor agrees to comply with the provisions of Worker's Compensation Laws of the State of Mississippi.
- 2) It shall be stated on every policy or Certificate of Insurance, as the case may be, that "The insurance company agrees that the policy shall not be canceled, changed, or allowed to lapse until ten (10) days after the Lawrence County School District has received written notice as evidenced by the return receipt of registered mail, and it is agreed further that as to lapsing, such notice will not be valid if mailed more than fifteen (15) days prior to the expiration date shown on the policy."
- 3) The Vendor shall maintain other insurance (with the limits shown below) that shall protect The Vendor and the Lawrence County School District from any claim for property damage or personal injury, including death, which may arise out of operations under this contract, and the Vendor shall furnish the Lawrence County

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School District with certificates and policies of such insurance as follows.

Below is a list of the insurance coverage that must be procured by The Vendor at his own expense. The Vendor agrees to follow instructions indicated in each case:

The Lawrence County School District Protective Liability Insurance:

- Personal injury, including death, limits of \$1,000,000.00 for each person and \$1,000,000.00 for each accident.

Vendor's Public Liability Insurance:

- Personal injury, including death, limits of \$1,000,000.00 for each person and \$1,000,000.00 for each accident.
- Property Damage limits of \$100,000.00 for each accident and \$500,000.00 for the aggregate.

4.9 Governing Law

All RFPs and related documents submitted to the Lawrence County School District by the Vendor are governed under the laws of the State of Mississippi.