

BID SPECIFICATIONS
WIRELESS NETWORK REPLACEMENT FOR

Hardeman County Schools

General: Hardeman County School District is requesting bid proposals under the E-Rate category of "Internal Connections" and "Basic Maintenance". An approved contract should cover the period between July 1, 2019 and September 30, 2020. Purchases are dependent upon E-Rate assistance, Director of Schools approval of the contract, and final approval by individual end users. Prospective vendor **MUST** perform walk-thru at site prior to bid date in order to ensure a working solution with existing network infrastructure regardless of details outlined in this RFP. Scheduled walk-through will take place on Monday, March 4, 2019. Call for details.

Bidding Instructions/Deadline: Bidders must clearly, and independently, identify all fees associated with their services including items such as maintenance, insurance, and any optional/extended services. Questions regarding bid specifications, or requirements, should be directed to Mrs. M. Johnson, Coordinator of IT (Phone: 731-658-3228). Bids should be clearly identified on the outside of a sealed envelope as "Bid-Wireless – Hardeman County Schools, ATTN: Jimmy Sain/M. Johnson" and received no later than 10:00 a.m. central standard time, on Tuesday, March 19, 2019 at the following address:

The County Mayor's Office
100 N. Main, P.O. Box 250
Bolivar, Tennessee 38008
Attention Jimmy Sain/M. Johnson

VENDOR REQUIREMENTS/TERMS OF CONTRACT:

1. **PUBLIC CHAPTER 587.** Vendors are required to comply with Tennessee Code Annotated, Section 49-5-413 enacted on September 1, 2007, which states that all employees who will have access to the grounds of a school must supply verification documentation for each employee that a background check has been performed by Tennessee Bureau of Investigation and the Federal Bureau of Investigation, prior to access to the school.
2. **BID BOND/PERFORMANCE BOND** Proposal must be accompanied by a **10% Bid Bond**. The 10% Bid Bond will be held from the selected Vendor as a guarantee of performance. Cost of the Bid Bond is the responsibility of the Vendor. ***Any bid submitted without these Bonds will be rejected.***
3. **FINANCIAL RESPONSIBILITY:** Any expenses incurred in preparation of proposals to this RFP, including bid bonds or performance bonds, are the sole financial responsibility of the vendor.
4. **MANDATORY WALK-THROUGH:** Scheduled for Monday, March 4, 2019. Call 731-658-3228 for further information. **Vendors are required to complete a walkthrough at each jobsite before bidding on proposed project.** This will insure that the prospective vendor and Hardeman Co. Schools agree on what the exact specifications must be in order to ensure a working solution with existing network infrastructure, regardless of details outlined in this RFP.
5. **CONTRACTORS LICENSE** Vendors are required to have a current contractor's license from the State of Tennessee if any network cabling is involved in this bid. Enclose a copy of contractor's license and/or copy of the subcontractor's license with the bid return. Any work that will be subcontracted should be clearly marked in the bid. The vendor is responsible for any fees and/or costs incurred by all subcontracted work. The vendor is also responsible for correcting any sub-par work performed by the subcontractor at the expense of the vendor. If the contractor fails to fulfill its obligation under this contract in a timely or proper manner, or if the contractor violates any terms of this contract, the Hardeman County School System shall have the right to immediately terminate the contract and withhold payments in excess of fair compensation for completed services. Notwithstanding the above, the contractor shall not be relieved of liability to the State for damages sustained by virtue of any breach of this contract by the contractor.

TENNESSEE CONTRACTOR LICENSE NUMBER-_____

*****Any bid submitted without contractor's license number a will be rejected.*****

6. **SUBCONTRACTING/ASSIGNMENT**--consent required. The provisions of this contract shall insure to the benefit of and shall be binding upon the respective successors and assignees of the parties hereto. Except for rights to money due to Contractor under this contract, neither this contract nor any of the rights and obligations of Contractor, hereunder shall be assigned, or transferred in whole or in part without the prior written consent of the director of Hardeman County Schools. Any assignment or transfer shall not release Contractor from its obligations hereunder. **NOTICE OF ASSIGNMENT OF ANY RIGHTS TO MONEY DUE TO CONTRACTOR UNDER THIS CONTRACT, MUST BE SENT TO THE ATTENTION OF: Accounting Department, Hardeman County Board of Education, 10815 Old Highway 64, Bolivar, TN 38008.** If such subcontracts are approved by the local government entity, they shall contain, at a minimum, sections of this Contract pertaining to Conflicts of Interest and Nondiscrimination (Sections 6 and 7) and comply with Public Chapter 587 (Section 1).

VENDOR REQUIREMENTS/TERMS OF CONTRACT CONTINUED:

7. **CONFLICTS OF INTEREST/CONTINGENT FEES/GRATUITIES AND KICKBACKS.** The Contractor warrants that no part of the total Contract Amount shall be paid directly or indirectly to an employee or official of the local government entity as wages, compensation, or gift in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Contractor in connection with any work contemplated or performed relative to this Contract. It shall be a breach of ethical standards for any person to offer, give, or agree to give any employee, or former employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specifications or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for any ruling, determination, claim or controversy or other particular matter, pertaining to any program requirement of a contract or subcontract or to any solicitation or proposal therefore. It shall be a breach of ethical standards for any payment, gratuity or offer of employment to be made by, or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or a person associated therewith, as an inducement for the award of a subcontract or order. Breach of the provisions of this paragraph is, in addition to a breach of this contract, a breach of ethical standards, which may result in civil or criminal sanction and/or debarment or suspension from being a contractor or subcontractor under local government entity contracts.
8. **NONDISCRIMINATION.** The Contractor hereby agrees, warrants, and assures, that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Contract, or in the employment practices of the Contractor, including promotion, demotion, employment, dismissal, or laying off of any individual, on the grounds of handicap and/or disability, age, race, color, religion, sex, national origin, or any other classification protected by Federal, Tennessee State constitutional, or statutory law. The Contractor shall upon request, show proof of such nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.
9. **HOLD HARMLESS:** The Contractor agrees to indemnify and hold harmless the local government entity as well as its officers, agents, and employees from and against: (a) any and all claims, liabilities, losses, and causes of action which may arise, accrue, or result to any person, firm, corporation, or other entity which may be injured or damaged as a result of acts, omissions, bad faith, negligence, or willful misconduct on the part of the Contractor, its officers, its employees, or any person acting for or on its or their behalf relating to this Contract; and (b) any claims, damages, penalties, costs and attorney fees arising from any failure of Contractor, its officers, employees, and/or agents, including its sub- or independent contractors, to observe applicable laws, including, but not limited to, labor and minimum wage laws. The Contractor further agrees it shall be liable for the reasonable cost of attorneys for the State in the event such service is necessitated to enforce the terms of this Contract or otherwise enforce the obligations of the Contractor to the State. In the event of any such suit or claim, the Contractor shall give the local government entity immediate notice thereof and shall provide all assistance required by the local government entity in its defense. The local government entity will not indemnify, defend or hold harmless in any fashion the Contractor for any claims, regardless of any language in any attachment or other document that the Contractor may provide. Contractor shall pay the local government entity any expenses incurred as a result of Contractor's failure to fulfill any obligation in a professional and timely manner under this Contract.
10. **TECHNICAL SUPPORT/VENDOR OFFICE OR TECHNICIANS:** Vendors are required to have an office or representatives that are located within a 250 mile radius of Hardeman Co. Schools. This will insure that the vendors will be able to provide the needed service in a timely manner. Vendor must provide an 800 line for technical support at no additional charge to the school system during the warranty period if out of the local calling area. Vendor is required to provide 48-hour response time on any problems that may occur with network or computer equipment. Please list all technicians, their locations, and experience. Please note if any of your technicians have Microsoft Certification, Network Cabling, or Fiber Optic, Cisco or MESH Technology certifications.

OFFICE OR TECHNICIANS ADDRESS-_____

TOLL FREE TECHNICAL SUPPORT NUMBER-_____

VENDOR REQUIREMENTS/TERMS OF CONTRACT CONTINUED:

11. **E-RATE AUTHORIZED SPIN NUMBER** Vendors are required to have a valid authorized E-RATE Spin Number from USAC and that the vendor's SPAC is up-to-date with USAC. This will allow Hardeman Co. Schools. Schools to purchase products with the E-Rate discount.

E-RATE SPIN NUMBER-_____
*****Any bid submitted without ERATE spin number will be rejected.*****
12. **INSURANCE REQUIREMENT** Bid must be accompanied with Certificate of Insurance. Vendor must carry a minimum of \$1,000,000 Liability Coverage and Workers Compensation on all employees that will work in Hardeman Co. Schools
*****Any bid submitted without a certificate of insurance will be rejected.*****
13. **CLIENT/REFERENCE LIST** Vendor must provide a list of School References (Min. of 5) where similar networks and hardware have been installed as proposal (List Contact Name and Telephone Number, preferably within the State of Tennessee.)
*****Any bid submitted without a client reference list will be rejected.*****
14. **FINANCIAL STABILITY** Vendor must be willing to provide financial statements and bank references if required to show financial stability to a school system.
15. **CODES, STANDARDS, AND REGULATIONS** All FCC regulations governing Wireless Telecommunications must be followed. All network/telecommunication cabling must comply with applicable Tennessee building and fire codes. All electrical codes, standards and guidelines govern the installation practices and materials used. The minimum standards will meet ANSI/TIA/EIA-526-7, 568, 569, 570, 598, 606, 607, 758, ANSI/NEMA Standards Publication No. WC 66-2001, ANSI-J-STD-607-A and addenda, TIA-455, TIA/EIA TSB-67, 72, 75, TSB-140, 155, 184., 190 Other considerations concerning 802.11 deployment must be met, which includes IEEE 802.11i, IEEE 802.11e, IEEE 802.1X, Wi-Fi certification, WMM certification, IEEE 802.11a, IEEE 802.11.b, IEEE 802.11g., IEEE 802.11n, IEEE 802.11ac, IEEE 802.11ac, IEEE 802.11i, Layer-3 mobility, IEEE 802.3-2012, and IEEE 802.3af. Also, see Compliance Standards located under Scope of Work.
16. **PRICE PROTECTION** All prices must be Free On Board (F.O.B.) to Hardeman Co. Schools. Prices quoted must be good for one year from the date of award. Vendor must deliver, setup, install, and test every system on the network. Delivery and installation of these systems into the network must be completed within 45 days of obtaining the purchase order. **Vendor must provide on-site services after the warranty period.** If network cabling is involved, the warranty provided must be a minimum of 3 year from installation date. Hardeman County Schools participates in the Buyboard Cooperative Purchasing program.
17. **RIGHT TO REJECT PROPOSALS** Hardeman Co. School System reserves the right to reject any or all proposals, to waive technicalities or informality and to accept any proposal deemed to be in the best interest of the county. Hardeman Co. Schools prefer to award to a single vendor for entire job proposal. **All proposals must include SKU AND FULL MAKE AND MODEL with the bid.**
18. **RIGHT TO PURCHASE SELECTED ITEMS ON BID** Hardeman Co. School System reserves the right to purchase selected items on this bid. If funds to purchase entire bid are not available, Hardeman Co. School System may purchase selected items at this time and the balance within the next school year. Because of rule changes in the E-Rate program, in particularly the 5-year school budget constraints, the winning vendor will be expected to work with the Hardeman Co. School System to determine which items would be purchased through the E-Rate program.
19. **DISCOUNTED BILLING** The vendor must agree to provide discounted billing to the District, whereby the vendor will submit a Form 474 invoice to USAC to seek reimbursement for the discounted share of the eligible costs. The vendor must ensure that ineligible charges are not submitted to USAC, and all E-rate program rules and regulations are followed.

20. **WORKMANSHIP** *All work areas will be swept and work materials picked up before leaving the premises at the end of the workday.* Equipment will be moved, if possible, or if not possible, **covered** when any drilling must be done through the walls or ceilings. Tables will be covered at both sides of the work area where drilling will take place. During the school day, all cell phones should be turned off, or placed on silent mode when inside school buildings.
21. **JOB COMPLETION:** Vendor must ensure that all substituted products are approved by Hardeman County Schools prior to ordering. Upon job completion, all hardware installations and network drops must be tested, and a hardcopy of test results must be provided to the Hardeman County School System. An electronic document/worksheet with all devices installed must be provided to the IT department and should include the following items: make, model, product description, installed location (school and room number), IP address if static, mac address, and serial number of the device.
22. **COMPATIBILITY** All proposed additions of network infrastructure must be compatible with previously installed equipment. Although a specific manufacturer may be listed in the RFP, Hardeman County Schools will consider and evaluate equivalent in quality and functionality. Equivalent manufacturers must include in their proposal manufacturer proof, such as manufacturer’s specifications, or other similar documentation showing that the equipment is equivalent in quality and functionality.
23. **WARRANTY:** Hardware and installation should be for a minimum of three (3) years.
24. **SEVERABILITY:** If any terms and conditions of this Contract are held to be invalid or unenforceable as a matter of law, the other term and conditions hereof shall not be affected thereby and shall remain in full force and effect. To this end, the terms and conditions of this Contract are declared severable.

I agree to all of the above terms and guarantee to meet all said terms, unless otherwise noted, to the satisfaction of the school district.

Name _____ Title _____

Company _____

Signature _____ Date _____

Scope of Work

Hardeman County Schools will be replacing existing controllers and access points at Bolivar Elementary, Grand Junction Elementary and Hornsby Elementary, replacing at least two network closet racks at Bolivar Elementary, and possibly replacing the Cisco Secure ACS located at the Hardeman County Schools Operations Center. Hardeman County Schools expect a turnkey solution where the selected vendor is responsible for managing the entire project from design phase through user acceptance, to include any necessary on-going support and maintenance. Responsibilities include, but are not limited to, site surveys, wireless security analysis and recommendations, real-time heat mapping, structured cabling, electrical and equipment recommendations, testing of all equipment, and any other associated tasks required for a successful wireless implementation. Access Points should support 802.11ac and clean air technology. We will not accept products that are currently in end of life product or are scheduled to be end of life within 5 years. Warranty of installation and hardware should be for 3 years. The wireless solution will be part of a centrally managed solution, being able to co-exist and comply with existing wireless in the district. Authentication is currently through a Cisco Secure ACS-3415 Appliance, which will need to be upgraded. The current failover controller is a Cisco 5508 Series WLAN controller ver. 8.0.143.0, which will need to be replaced. In the table listed below is a list of locations showing the model of each controller located at the school, and the model of the APs located in the school. The failover controller will need to be able to support the APs listed. Proposed network must configure Bolivar Elementary, Grand Junction Elementary, and Hornsby Elementary wireless network to use the failover controller located at Hardeman County Schools Operations Center. Although it is unlikely that Hardeman County Schools will be able to replace the 5508 controller in each of the schools listed below, please include as an option replacing the controllers listed in Table A. All newly installed controllers will need to have their firmware updated to the latest version as long as the newest firmware version will continue to work with the current APs installed. Table B, lists remaining locations/schools that require the UPS to be replaced. Table B outlines the school, the network closet, and number of switches. The UPS should be rack mounted unless otherwise indicated at the scheduled walk-through.

If Cisco products are not proposed, then a similar solution that can manage existing Cisco products currently deployed in the school district, as well as the proposed product, must be implemented. As part of the solution, on-site training over the use and management of the wireless network infrastructure, along with a complete listing of hardware, including serial number, IP address, mac address and installed location is expected as part of the user acceptance condition. If additional network drops are required for APs, then the cable runs should be Cat6 and green at Bolivar Elementary and Hornsby Elementary, and Cat6 and blue for Grand Junction Elementary. It will be necessary to replace the existing switches to accommodate 802.11ac technology. The switches will need to be rack mounted, and not to exceed the depth dimension of 24.1cm. The existing racks are only open faced at Hornsby Elementary. Bolivar Elementary and Grand Junction Elementary have enclosed racks. Each network closet in Bolivar Elementary, Grand Junction Elementary and Hornsby Elementary will require a new UPS for the switches. This wireless proposal will need to have the ability to be scalable as network access expands. The wireless network must meet specifications or all money will be refunded. Following outlines the existing wireless infrastructure currently in place, and a few scenarios that are taking place at each site. Please focus on your overall strategy and approach. Highlight critical issues you believe would need to be addressed/resolved for each one.

Bolivar Elementary

The wireless infrastructure should encompass 75 classrooms (includes library, gym area, portables), which include two buildings. The student population is 685. Although there is not a one-to-one mobile device environment in place, there are five mobile carts containing 25 to 30 Chromebooks in the school, and there are several mobile devices (iPads, laptops, and Surface Tablets) present throughout the school. If network drops need to be installed for **APs**, then the cable runs should be Cat6 and GREEN.

Please include as an option to wire one lab located in ABC RM 52 – which would include an additional 1 switch and 26 Cat6 network drops feeding to IDF7. The network drop runs for the computers will be colored grey or white.

Location	Device	Model No.	No. of APs to closet	Replace Rack	No. of Switch in closet for UPS
RM 14 (MDF)	Controller	AIR-CT5508-K9 WLC	5		7
RM 14 (MDF)	Switch	SG-300-28P PoE			
RM 19 (IDF1)	Requires switch		3		1
RM 12 (IDF2)	Switch	Catalyst 2960-S PoE	3	YES	2
RM 5 (IDF3)	Switch	WS-C2960S-24TS-L	5	Replace fan	3
WORK AREA (IDF4)	Requires switch		6		4
GYM OFFICE (IDF5)			2	YES	1
ABC Break RM (IDF6)	Switch	Catalyst 2960-S PoE	6	YES ¹	8
RM 23 (IDF7)			7	Possibly ²	5
Total of APs currently	37 Access Points	LAP1142N, CAP3702I			

Notes:

1. Currently, closet is not able to close properly. Possibly if rearranged, might be able to still use network closet, otherwise, require an enclosed cabinet rack that will be able to lock.
2. If the option to wire ABC RM 52 is implemented, then a larger enclosed rack will need to be installed in IDF7 because there would not be enough room to add another switch, and the enclosed rack in IDF7 can be moved to IDF2.

Grand Junction Elementary

The wireless infrastructure encompasses classrooms (including library, gym area, offices,), which is one building and two portables. The student population is 120. Although there is not a one-to-one mobile device environment in place, there are mobile devices present in the school, including 1 cart containing 30 iPads, and two carts that contain anywhere from 15 to 25 Chromebooks each. If network drops need to be installed for APs, then then the cable runs should be Cat6 and BLUE.

Location	Device	Model No.	No. of APs to closet	No. of Switch in closet for UPS
Library (MDF)	Controller	AIR-CT5508-K9 WLC	11	7
Library	WLC AP manager			
Library	Switch	SG-300-28P PoE		
Portable 2 (IDF1)	Switch	ESW-540-8P-K9 POE	1	2
Total of APs currently	12 Access Points	LAP1142N		

Hornsby Elementary School

The wireless infrastructure encompasses classrooms (includes library and gym area), and to include one portable. The student population is 171. There are currently two mobile wireless carts in place containing classroom sets of Chromebooks, and 1 cart with some laptops. There are also other mobile devices present in classrooms throughout the school. If network drops need to be installed for APs, then the cable runs should be Cat6 and GREEN.

Please include as an option to wire one lab located in RM 19 with 26 ea. Cat6 network drops colored white or grey. Note: The school currently has Cat5e deployed.

Location	Device	Model No.	No. of Switch in closet for UPS
Library/RM 12 (MDF)	Controller	AIR-CT5508-K9 WLC	6
Library/RM 12 (MDF)	AP Manager		
Library/RM 12 (MDF)	Switch	Catalyst 3560 PoE	
Total of APs currently	18 Access Points	LAP1141N, LAP1142N, LAP1262N, CAP1702i	

Following is a table outlining areas that will not have the APs replaced, but possibly will need to have the Controller replaced and configured for the failover controller. **Note: all software versions are currently at 83.143.0.

Table A – Controller replacement

Location	Model of controller	Model of AP in school	No. of APs
Hardeman Co Ops Center	5508 (overage controller)	CAP3502I, CAP2702E, CAP1532I	100
Bolivar Middle	5508	CAP1702I	41
Middleton Elem	5508	CAP3702I, CAP1532I, CAP3702E	22
Whiteville Elem	5508	CAP1702I, CAP2702E	35
Hardeman County BOE	2504	CAP1702I	12

Table B - UPS Replacement –shows number of switches/controller that will be plugged into UPS

(Note: UPS information for Bolivar Elementary, Grand Junction Elementary and Hornsby Elementary already listed above)

Location	MDF	IDF1	IDF2	IDF3	IDF4	IDF5	IDF6
Bolivar Central	6	6	5	7	5	1	1
Bolivar Middle	4	2	5	2	n/a	n/a	n/a
BOE	8	n/a	n/a	n/a	n/a	n/a	n/a
HC Learning Ctr	3	n/a	n/a	n/a	n/a	n/a	n/a
Middleton Elem	5	3	2	n/a	n/a	n/a	n/a
Middleton High	4	3	2	3	2	n/a	n/a
Toone Elem	5	4	n/a	n/a	n/a	n/a	n/a
Whiteville Elem	7	3	n/a	n/a	n/a	n/a	n/a

Scenario No. 1: Staff/Teachers bring personal mobile devices (whether it is a laptop, Kindle/Nook, Android, or iOS device) onto the campus. It is unknown what level of antivirus security, and/or patch management/firmware upgrade is on the mobile device. It is unknown what kind of WLAN client or driver is installed. While protecting access to our network environment, the ability to access the Internet will be granted, without granting Internet access to the general public by proximity. Currently, this is done through guest access requiring a username and password provided through the AD server for web authentication through a Cisco Secure ACS 3415 Appliance. Students will be prohibited from attaching to the wireless network with personal mobile devices. Must also keep in mind Scenario 8 during design and implementation.

Scenario No. 2 Guest speakers on campus will be allowed Internet access without granting Internet access to the general public by proximity as well, while also protecting network infrastructure from guest equipment. This solution should show ease of access. This should be also easy to administer and change by non-technical personnel. Currently, this is done by creating a username and password for web authentication through the school's local wireless controller for the guest SSID. Temporary usernames/passwords are created by library personnel.

Scenario No. 3 Although a controller will be deployed at each school site, central management of the wireless network should be implemented. We will need to be aware of trouble spots and view/manage all APs in the school district, not just on-site. We will also need to detect and contain rogue access points within the school district. At any time, there may be up to 5 concurrent administrators logged into the management system. We will need the ability to temporarily setup an access point in a conference/classroom if needed without the AP being identified as a rogue access point.

Scenario No. 4 At times, it may be necessary to elevate Internet/network priority among the wireless traffic. This would be dependent on application/network access, i.e. teacher inputting grades at the end of a grading period within the student management system.

Scenario No. 5 Although VoIP is not deployed at this time, the proposed wireless solution must keep in mind that at some point VoIP may become a reality.

Scenario No. 6 Whether it is a guest speaker, personal mobile device, or campus owned wireless device, no one should be able to attach to neighboring WiFi networks while on campus. Because of CIPA regulations (Federal regulations), all Internet traffic on school owned campus/building site goes through a filter.

Scenario No. 7 Currently, district-owned devices attach to the wireless two different ways. Devices that are attached to the domain server, authentication is accomplished through the AD server by way of the ACS 3415 Appliance. District-owned devices that do not attach to the domain server (i.e. Chromebooks, iOS devices, etc.) are authenticated through the ACS 3415 Appliance by each device's unique MAC address. Many teachers may be using both a district-owned device and a personal device. Personal devices will not have access to the district's internal network. At all times, guest equipment should only be given Internet access, and not have access to district network, i.e. servers, printers, etc. Must keep in mind Scenario No. 8 during design and implementation.

Scenario No. 8 There are 3 schools in the district with a Cisco-Meraki solution on campus, but are still configured to use the ACS 3415 for authentication described in Scenario 1 and Scenario 7. A new solution would require the Cisco-Meraki schools to be included in the configuration.

Please note: On the bid return, all costs must be separated by each school.

Wireless Specifications

A. Wireless Access Points (WAP) must meet the following criteria:

- a) Must have Wi-Fi Alliance certification.
- b) The wireless environment must support simultaneous 802.11a and 802.11ac capability.
- c) Must separate 802.11a and 802.11ac traffic so that 802.11a connectivity will not interfere with 802.11ac speed.
- d) Must implement WPA2 compliancy or latest security encryption protocol for campus owned devices, while allowing guest access to the Internet only.
- e) Must accept IEEE 802.af standard.
- f) Must support multiple VLANs on same access point.
- g) Support for multiple SSIDS may be implemented on same access point.
- h) Must be centrally managed.
- i) Must integrate with Wi-Fi Alliance certified wireless network interface cards. Must support the following platforms: Apple OSX, Linux, Windows 7, Windows 8, Windows 8.1, Windows 10, Android devices, iOS devices.
- j) Must possess Layer-3 mobility.
- k) Must comply with IEEE 802.11e/WMM.
- l) Must have ability to auto provision and support dynamic load balancing.
- m) Use of directional antennas instead of omni antennas used when applicable.

B. NETWORK SWITCHES, RACKS, PATCH PANELS AND EXPANSION CABLES- (Installed)

- a) Vendor must deliver test and install each rack, patch panels, switches and expansion cables on the network.
- b) A hard copy of the testing results must be provided to Hardeman County Board of Education upon completion of job. It is vendor's responsibility to provide literature and documentation that products meet or exceed specifications if quoting brands other than what has been specified.
- c) All proposed equipment must be compatible with currently installed products/hardware.
- d) All cables will be clearly marked at demarcation point in wiring closet as to its destination.
- e) All cable (both ends), faceplate, and patch panel labels will be provided by the contractor, and shall be either typed or machine generated.
- f) Where slack cable is prescribed, cable should be neatly coiled, bound, and stored in the ceiling if applicable in compliance with ISO/IEC 11801-6 standards and ANSI/TIA standards.
- g) Vendor must use current wall penetrations where available. If new wall penetrations are required, all building and fire codes must be adhered to.
- h) Plenum-rated Cat6 cabling should be used, if compatible to proposed AP solution.
- i) All APs will be connected to a new Ethernet layer-3 switch with PoE capabilities.
- j) The controller will be installed in the MDF closet, unless vendor can indicate a better solution.
- k) For listing of other codes/standards/regulations, please refer no. 15 on page 4 of RFP.

C. AP/RF Management criteria

- a) WAPs must be able to handoff seamlessly from point to point or multi-point to point, and must have roaming profile, mobile user profile, and mobility groups capabilities.
- b) Support for location and mapping services, including MESH pathway.
- c) Must have a security and authentication control system. If using WPA2 encryption, describe the solution that will provide for a Radius Server.
- d) Support for rogue detection with wireless intrusion detection system. Included with detection must be the ability investigate, isolate the physical location, and when appropriate, interfere with communication of the rogue. Include ability to assimilate adhoc devices.
- e) Proposal should include at least use of two VLANs, one being used for AP management. Solution must explain access differentiation according to user class, i.e., Office, Teacher, Student, Guest/Visitor.

AP/RF Management criteria continued

- f) Must have the ability to globally change configuration parameters for APs, allowing for validation of configuration changes and software/firmware updates, while allowing for roll-back if problems are detected.
- g) System allows for dynamic power level adjustment with alarm notification delivery system.
- h) Allow for different levels of administrative control to include lower level administrative function that allows for viewing of local site activity and management.
- i) Management should be GUI interface, preferably web-based and support centralized management. Training is expected upon completion.
- j) Ability to generate and view historical and real time statistics. Provide sample reports..
- k) A hard copy of all testing should be received by the Hardeman County School System upon completion of job. See number 21, Job Completion, on page 5 for further information.
- l) An electronic document/worksheet with all devices installed must be provided to the IT department and should include the following items: make, model, installed location (school and room number), IP address if static, mac address, and serial number of the device. See number 21, Job Completion, on page 5 for further information

D. Other Optional Devices

- a) Mobile WLAN analyzer with import/export capabilities in order to share data with the wireless intrusion detection system.
- b) Outdoor MESH WAPs where needed.

HARDEMAN COUNTY SCHOOLS

BID RETURN FORM NETWORK WIRING

VENDOR'S NAME _____ TELEPHONE _____
CONTACT PERSON _____ FAX NO. _____
ADDRESS _____ EMAIL _____

SIGNATURE OF/FOR VENDOR

DATE

PROVIDE YOUR BID TOTAL AFTER CONSIDERING ALL SPECIFICATIONS HEREIN: Must separate total cost by school. Pricing must be good throughout the entire E-Rate project request of July 1, 2019 through September 30, 2020. Please include support documentation with bid packet to include quantities, and make/model numbers of devices.

Total Bid for updating Bolivar Elementary

Option to wire Bolivar ABC RM 52 computer lab:

Total Bid for updating Grand Junction Elem:

Total Bid for updating Hornsby Elementary:

Option to wire Hornsby RM 19 computer lab:

Cost to replace and configure the controller at the following locations:

Board of Education:

Bolivar Middle School:

HCS Operations Center:

Whiteville Elementary:

Cost to replace UPS at the following locations: Note: UPS replacements for Bolivar Elem, Grand Junction Elem., and Hornsby Elem, should be included in the total bid for each school listed above.

Bolivar Central	_____	Middleton Elementary	_____
Bolivar Middle	_____	Middleton High	_____
Board of Ed	_____	Toone Elementary	_____
HC Learning Center	_____	Whiteville Elementary	_____

Appendix A: Access Point Model Information Sheet

*Note: Vendor must complete the following grid for each access point model recommended.

Model # _____

Requirement	Standard Feature	Extra Cost Feature	Not Provided
Plenum rated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Layer 3 mobility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dynamic load balancing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auto provisioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Centrally managed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support IEEE 802.11a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support IEEE 802.11ac	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Integrate with Wi-Fi Alliance certified wireless network interface cards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support multiple VLANs on same access point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support multiple SSIDs on same access point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accepts IEEE 802.3af	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accepts different type external antennae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Access point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IEEE 802.11e compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Centralized controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Separation of IEEE 802.11a and IEEE 802.11ac traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Schedule A. Solution Pricing Template

All hardware pricing should include a 3-year warranty. Optional warranty would encompass additional years above the 3-year period.

Enterprise Access Point Pricing

Mfg/Model No.	List Price	Discount off List	Discount Price	Optional Warranty	8:00 a.m. to 5:00 p.m. full technical support	Clarifying Comments

External Antennae Pricing

Mfg/Model No.	List Price	Discount off List	Discount Price	Optional Warranty	8:00 a.m. to 5:00 p.m. full technical support	Clarifying Comments

Controller or Wireless LAN switching price

Mfg/Model No.	List Price	Discount off List	Discount Price	Optional Warranty	8:00 a.m. to 5:00 p.m. full technical support	Clarifying Comments

Schedule A. Solution Pricing Template continued

Management Software

Mfg/Model No.	List Price	Discount off List	Discount Price	Recurring Annual Fee	8:00 a.m. to 5:00 p.m. full technical support	Clarifying Comments

Management System Hardware Requirements

Mfg/Model No.	List Price	Discount off List	Discount Price	Optional Warranty	8:00 a.m. to 5:00 p.m. full technical support	Clarifying Comments

Miscellaneous Software – If applicable, vendor must price a site license covering all operations of Hardeman County School System.

Mfg/Model No.	List Price	Discount off List	Discount Price	Recurring Annual Fee	8:00 a.m. to 5:00 p.m. full technical support	Clarifying Comments

Schedule A. Solution Pricing Template continued

Miscellaneous Parts

Mfg/Model No.	List Price	Discount off List	Discount Price	Optional Warranty	8:00 a.m. to 5:00 p.m. full technical support	Clarifying Comments