



**Tri-County Academy
400 Cox Ferry Road
Flora, MS 39071**

**E-RATE 2019-2020 CATEGORY 2
REQUEST FOR PROPOSALS (RFP) FOR LAN/WIFI INFRASTRUCTURE
PROPOSAL DUE DATE:**

February 8, 2019 at 2:00 P.M. CST

BID OPENING 3:00 P.M.

**Tom Taylor Ph.D
Headmaster**

Tri-County Academy LAN/Wi-Fi Infrastructure RFP

Subject: Requests for Quotations/Proposals for installing switches, AP's, controllers, ups backups and related equipment for schools in the Tri-County Academy.

Purpose:

Proposals are being sought by The Tri-County Academy for the purpose of evaluating various solutions to provide new switching/Wi-Fi infrastructure with backup solutions and related cords and fiber modules to integrate with TCA's existing wireless equipment at the schools.

Background:

Our District's students, teachers, staff and administrators are using more and more resources that require Internet access, including wireless connectivity. The Tri-County Academy does not have a standardized networking platform; however, the Academy is looking at a new proposed solution, with a preference for Extreme switches, and wireless and from other manufacturers with proven evidence of equipment that is functionally equivalent or better. The purpose of this RFP is to explore the various options currently supported through the E-Rate program and its Category Two services.

General Requirements:

The Tri-County Academy is seeking quotations for complete solutions to install a LAN/Wi-Fi infrastructure to include replacing switches and Wi-Fi including GBIC modules, fiber and Ethernet cords, and ups battery backups for equipment infrastructure at each of the school buildings.

Terms used throughout this RFP

USAC – Universal Service Administrative Company
SPAC - Service Provider Annual Certification
TCA- Tri-County Academy

This RFP package consists of the following sections:

- I. General Conditions
- II. Detailed Specifications
 - a. LAN Infrastructure
 - b. Wireless Infrastructure
- III. District Responsibilities
- IV. The Service Provider's responsibilities
- V. Proposal Forms

Send proposals and supporting documentation to:

Tom Taylor, Headmaster
400 Cox Ferry Road
Flora, MS 39071

Do Not Fax or Email Proposals. Proposals will be received by TCA at the Office of Headmaster, 400 Cox Ferry Road Flora, MS 39071 until 2:00 PM **CST, February 8, 2019**. Proposals must be mailed to the address above in time for delivery before the closing date or hand delivered.

Schedule of Events:

Event	Date(s)	
Release of RFP to Service Providers	1-9-2019	
Site Visits (Mandatory)	1-24-2019	9:00 AM CST
Optional Site Visit (If Circumstances permit)	1-25-2019	9:00 AM CST
Deadline for Submission of Proposals	2-8-2019	2:00 PM CST
Opening of Proposals (@TCA)	2-8-2019	3:00 PM CST
Board Approval of Bids	TBA	TBA

Inquiries

All correspondence and inquiries regarding this RFP must be done via Email:

tom.taylor@tricountyacademy.org

If a Service Provider does not receive a response within 48 hours, it is the responsibility of the Service Provider to call Tom Taylor at 601-879-8517 and confirm that the email message was received.

All responses to inquiries will be emailed to the Service Providers.

Basis of Award:

1. E-rate approval by USAC
2. Provider must have current USAC SPAC and SPIN Number.
3. References of at least three installations of similar application size, complexity, infrastructure design and installation method as proposed.
4. Proposed network equipment's ability to meet current and future needs of TCA, including onsite support, training, and technical assistance.
5. Compatibility with existing wired and/or wireless infrastructure and existing CSpire VOIP Phone System.
6. Vendor's qualifications, knowledge, experience, past work and functionality of previous installations.
7. Overall cost and quality of proposal.
8. Service Provider MUST complete the MANDATORY walk through. NO BIDS WILL BE ACCEPTED FROM SERVICE PROVIDERS WHO DO NOT COMPLETE THE MANDATORY SITE VISIT.
9. Total number of LAN equipment will be determined during walk through.

The mandatory walk through will be on **January 24, 2019 at 9:00AM** at TCA. If extenuating circumstances prevent a vendor from attending on this date, a possible alternate date will be **January 25, 2019 at 9:00AM**. This date must be confirmed by Tom Taylor by phone at 601-879-8517 or by email at Tom.Taylor@tricountyacademy.org.

I. General Conditions

The following are the General Conditions for the work to be performed as outlined in the Detailed Specifications.

1. Location of Sites:

The location of the work is on property owned by the Tri-County Academy.

2. Scope of Work:

It is understood that, except as otherwise specifically stated in this RFP, the Service Provider shall provide and pay for all materials, labor, tools, equipment, transportation, temporary construction of every nature, and all other services and facilities of every nature whatsoever, necessary to execute, complete, and deliver the work within the specified time. Licenses necessary for the execution of the work shall be secured and paid for by the Service Provider.

Any work necessary to be performed after regular working hours, on weekends or legal holidays, shall be performed without additional expense to TCA, unless the weekend or holiday work is due to a delay caused by TCA and written consent is secured prior to the completion of said work by the Headmaster.

3. Protection in General:

The Service Provider shall protect all buildings, furniture, equipment, personal items, trees, shrubs, lawns and all landscaping on school property from damage. Any damaged property shall be repaired or replaced at the Service Provider's expense. Labor shall include all restoration (leveling, sod replacement) of grounds broken up during the installation of this network.

4. Change in Contract:

TCA will not be responsible for any change in the work involving extra costs unless approval in writing is furnished by the Headmaster before such work is begun.

5. Existing Conditions:

The Service Provider, in submission of this proposal, will have visited the premises and will be assumed to have taken into consideration all conditions which might affect this work. No consideration will be given to any claims based on a lack of knowledge of existing conditions. To schedule a site visit, contact Tom Taylor by phone at 601-879-8517 or by email at Tom.Taylor@tricountyacademy.org

If a Service Provider does not receive a response within 48 hours, it is the responsibility of the Service Provider to call Tom Taylor by phone at 601-879-8517 or by email at Tom.Taylor@tricountyacademy.org and confirm that the email message was received.

6. Insurance:

Within ten (10) days after notification of award, The Service Provider shall furnish to TCA a Certificate of Insurance showing compliance within the following limitations:

- 1) The Service Provider 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 TCA 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 Service Provider shall maintain other insurance (with the limits shown below) that shall protect The Service Provider and TCA from any claim for property damage or personal injury, including death, which may arise out of operations under this contract, and the Service Provider shall furnish TCA with certificates and policies of such insurance as follows.

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

TCA Protective Liability Insurance:

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

Service Provider'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.

7. Workmanship

All work shall be performed in a professional manner. Personnel from TCA may observe the work procedures and workmanship of the Service Provider, but such observation will not relieve the Service Provider from any responsibility of performance or constitute acceptance of the work performed. The Tri-County Academy has a rich tradition of excellence, which extends to all

employees both in and outside of the classroom. The Service Provider will instruct personnel to adhere to high standards of excellence in quality work, behavior, language, and appearance while performing the duties of this installation.

8. Proposed Services and Service Provider Qualifications

The Service Provider shall furnish a written document that describes the services proposed under these specifications. It is understood that the Service Provider is not responsible for the function of existing equipment already installed at the schools. However, limited troubleshooting of existing equipment will be provided by the Service Provider free of charge to determine if the existing equipment or cabling can be re-utilized. The Service Provider must also show proof that their employee(s) are certified to install the proposed components and electronic equipment.

9. Financing

The Service Provider will provide a binding contract to TCA for submission to the Schools and Libraries Division. After notification of award from the Schools and Libraries Division, the Service Provider will receive a Purchase Order for the products and services for which the Service Provider will be responsible as a result of this RFP. This Purchase Order will show the amount that is the responsibility of the local school system. The issuance of any purchase order will be contingent upon approval by USAC. Complete payment to the Service Provider will be subject to the rules of the Schools and Libraries Division (SLD). After notification by the Schools and Libraries Division (USAC Fund Administrator) of the acceptance of the Contract, the contingency will be removed and the Purchase Order will be submitted to the Service Provider in accordance with the rules and regulations of the SLD.

10. Application for Payment

All applications (invoices) for payment shall be submitted to TCA according to the USAC regulations. The Service Provider must submit a Service Provider Invoice for processing of the discounted portion of the bill.

11. Addenda

Any addenda issued after the issue of this RFP shall be delivered to all parties who complete or have completed the mandatory site visit within 24 hours of issuance or upon completion of the site visit.

If any questions arise within the RFP documents, the Service Provider may submit to TCA, written request for interpretation. Any interpretation of documents will be made by addendum to the RFP. Copies of any addendum will be emailed or delivered to each that has completed the mandatory site visit. TCA will not be responsible for any other explanation or interpretations. TCA reserves the right to reject any or all proposals, in whole or in part, and waive technicalities and informalities.

12. Proposal Submittal:

In order to be eligible for submission of a quote, the Service Provider must complete a site visit to all locations in the proposal. Any submissions submitted by a company that has not completed a site visit will be returned unopened.

One original and one copy of the proposal and two copies of the other required documentation must be sent in a sealed envelope clearly marked with the words "Tri-County Academy, TCA LAN/WIFI INFRASTRUCTURE 2019" to the address noted on page 2 of this document. All proposals will be opened at 3:00 PM CST on January 8, 2019, at TCA at 400 Cox Ferry Road Flora, MS 39071.

Due to the nature and diversity of the proposals, a significant amount of time may be required to determine which proposal provides the best option for TCA. The possibility is that the best option will involve district purchased equipment that may or may not be E-Rate eligible or may or may not be part of this proposal could significantly delay the evaluation process. The evaluation process will not be complete until TCA has determined the best proposal based on all factors.

13. Withdrawal of Proposal

A proposal cannot be withdrawn after it is filed, unless the Service Provider makes a request in writing to TCA prior to the time set for the opening of submitted proposals. TCA will accept no quotes after the deadline for submission of proposals.

14. The Service Provider's Qualifications

The Service Provider must provide proof of registration with the (SLD) for reimbursement under E-Rate guidelines for Category Two Services. If The Service Provider fails to file the appropriate forms with the SLD or fails to receive an SLD Service Provider Number, TCA is not responsible for the discounted portion of The Service Provider's bill. The Service Provider must generate an invoice for the USF portion of the bill in accordance with SLD regulations. The Service Provider is responsible for supplying SLD SPIN with the quote.

It is preferred that the Service Provider has been in business for at least 3 years and have an office in the state of Mississippi. A legible copy of incorporation papers must be attached and noted.

Service Providers must give examples of experience with installation of similar projects that have equal infrastructure equipment. Service Provider must give examples and contact information for at least three such installations.

A service provider's bid will be rejected also if the provider is not in good standing with USAC.

15. Stored Materials

Any materials stored on job site shall be the Service Provider's responsibility.

16. Specifications

Complete specification details for all products being proposed must be provided as part of the RFP response package (proposal).

17. Time of Completion

All work, on all TCA sites, must be completed and operational by **July 30, 2019**, presuming the funding has been approved by USAC and the Service Provider is selected, contract signed and E-Rate forms are submitted by TCA in a timely manner.

18. Accident Prevention

Precautions shall be exercised at all times for the protection of persons (including employees and students) and property and hazardous conditions shall be guarded against or eliminated. TCA or the building principal will determine what constitutes a hazardous condition on any campus and the Service Provider will be responsible for rectifying the issue to the satisfaction of TCA.

19. Contract Form

Upon Contract award and a binding contract signed, the standard written Purchase Order form will be issued to the successful Service Provider. Issuance of the Purchase Order will be contingent upon USAC acceptance and funding of the project.

20. Indemnification

The Service Provider agrees to hold TCA harmless and to indemnify TCA for every expense, liability or payment arising out of or through injury (including death) to any person or persons or damage to property (regardless of whom the owner may be of the property) of any place in which work is located arising out of or suffered through any act or omission of The Service Provider or Subcontractor.

21. The Service Providers' Representative

TCA reserves the right, with sole discretion, to refuse to allow any representative of The Service Provider to service the contract in any manner. In this event, The Service Provider shall furnish another representative that is acceptable to TCA. Examples of reasons for refusing to allow a Service Provider representative to service the contract include, but are not limited to:

- Use of profanity or abusive language around any school personnel or students.
- Unclean or unkempt appearance.
- Intoxication or obvious drug use.
- Threatening behavior towards any school personnel or students.

Should the Service Provider use subcontractors for portions of the work, TCA reserves the right to reject any subcontractor without explanations or recourse by The Service Provider or subcontractor.

22. TCA Regulations

The Service Provider and his representatives shall follow all applicable school district regulations while on TCA property, including the no smoking, no weapons, and drug free policies. No work shall interfere with school activities or environment unless the Headmaster or person in charge gives permission. All Service Provider personnel shall be easily identified by the use of identification badges and uniforms or shirts with The Service Provider's logo clearly visible.

23. Governing Law

All RFPs and related documents submitted to TCA by the Service Provider are governed under the laws of the State of Mississippi.

24. Comprehensive List of References:

All references should include: a contact person, dates of work, mailing address and telephone numbers. References must include three (3) or more references of installations of similar size and complexity within the USA.

25. TCA reserves the right to:

- a. Give full and proper consideration to the service, reputation, product knowledge, and experience of all companies presenting proposals, and to disqualify any such Service Provider it deems unqualified to provide the services requested.
- b. Reject any and all proposals, in whole or in part, if deemed necessary.
- c. Accept any alternative proposal believed to be in the best interest of TCA.

- d. Waive any formality in the quote submission.
- e. Cancel any awarded bid if the service proves unsatisfactory.

26. Price Quotations

Price quotations are to include the furnishing of all materials, equipment, maintenance, shipping costs, delivery, installation, drawings and the provision of all labor and services necessary or proper for the completion of the work as may be otherwise expressly provided in the contract documents. TCA will not be liable for any costs beyond those proposed herein.

In case of discrepancy in computed proposal prices, the unit price shall govern and the total price shall be revised accordingly.

27. Variation in Quantities and Configuration

TCA reserves the right to modify quantity and configuration requirements. The Service Provider agrees to sell TCA the revised quantity of items at the unit price stated in the proposal regardless of quantity changes.

28. Terms of Payment

The start of services for this project may not begin prior to **July 1, 2019**. TCA will, if possible, issue an SLD Form 486 on the day services begin. For the duration of the contract, payments will be made on the first Friday after the first meeting of The School Board after the submission of invoices from the Service Provider.

29. Turnkey Solution

All proposals are to provide a turnkey solution for installation and configuration of all switches and UPS battery backups to include configuration of all VLANs, VOIP and wireless equipment, fiber connections and provide a seamless integration into existing technical network and testing of equipment. Upon completion of project the Headmaster will be provided close out documents detailing the location and installation of all switches and UPS with a schema drawing of the infrastructure.

30. Term of Contract and E-Rate Subsidies

Payment for TCA's LAN/WAN infrastructure proposal is dependent on E-Rate subsidies. TCA will file for the E-Rate subsidies throughout the term of the contract. In the event that TCA E-Rate subsidies were to cease, TCA will notify the service provider as to the date of the cessation and TCA will be liable only for payment for services until the time of termination. If E-Rate subsidies stop, TCA will not be bound by the remainder of the contract.

II. Detailed Specifications

A. LAN

The specifications provided in this section are intended to convey the characteristics of a system to provide LAN infrastructure connectivity within Tri-County Academy.

Tri-County Academy is looking for quotations for a LAN infrastructure solution, priced by the number switches and ups battery backups indicated at each site.

TCA currently has NO standardized platform. TCA has a preference for an Extreme solution for switches and management software and APC UPS battery backups however TCA will entertain proposed solutions from other manufacturers if the vendor can show equal or better functionality. It is the vendor's responsibility and obligation to provide documentation and other evidence that a non-Extreme product is functionally equivalent or better. Without such documentation, TCA cannot accept the argument on functional equivalency or better based upon on cost alone.

The scope of the project will be as follows:

- Install and configure a wired solution of switches and battery backups including configuring VLANs to segregate data and voice traffic as needed. Vendor must be a participant in manufacturer's partner program. Vendor must have all engineers certified in the manufacturer's switches. Vendor must have the engineers with the skills to integrate the CSpire VOIP phone system at TCA into the new switch configuration as well as existing wireless access points and controller. All existing equipment in TCA must be functional after installation and configuration. TCA also requires enclosed network cabinets to house the new switches. ups. etc.
- Install Fiber connections between buildings.
- Provide training to TCA technical staff on the configuration and management of all devices. This training should include any and all aspects of configuring, installing, and managing the entire switch LAN infrastructure, including any management software for maintaining switching infrastructure and best practices. Training may be provided by the vendor or can be offered at an authorized training center.
- All equipment and material should be new. Used, refurbished or repurposed equipment or material will not be acceptable.
- Management and configuration tools to configure and manage the network devices are included in this project. This training should include any and all aspects of configuring, installing, and managing the entire LAN infrastructure, including best practices. Erate in-eligible software or equipment should be listed separately on proposal but included in the total cost of the bid.

Project must be field supervised by an Engineer with the appropriate manufacturer's

certification. (Please include information on who will perform this service.) Limited lifetime warranty for all LAN/WLAN components. Vendor must be able to provide quality in-house industry certified engineers for post-installation support.

Vendor must provide evidence of successful past performance of the installation and configuration of switches in a LAN in the MS K-12 environment.

Minimum Technical Requirements

In additions to the requirements listed above, the equipment included in the proposals needs to at least meet the following minimum requirements:

TCA requires switches to provide a managed, layer 3 or 4, gigabit switched LAN. We require that all proposed switch hardware to be compatible with existing wireless infrastructure and VOIP phone system to enhance support, insure end to end operability, provide a common feature set and enable unified LAN/WLAN management.

Proposed suggestions are stackable switches in the main wiring closets with POE+ functionality as needed for access points and Mini-GBIC modules as needed along with other switches in closets on the edge of the network. Included in the quote will be all fiber cables, stackable cables for switches, red 3 ft Cat6 Ethernet patch cables at patch panels and red 14 ft. or greater Cat6 Ethernet patch cables for every connected drop in the patch panel. In each wiring closet the appropriate UPS battery backup will be installed to protect all equipment. Please include model, make and quantity proposed for each wiring closet location.

Before preparing your RFP Response, please read carefully all sections of the RFP. Please respond with Comply or Does Not Comply and provide a supporting narrative response if necessary. If more than one product is being utilized to provide similar functions in each case, address the requirements below for each product quoted. We will consider any vendor not responding to each requirement for all products quoted to be non-responsive.

The proposed solution must provide a 10/100/1000Base-TX Ethernet switch solution that meets the requirements provided below. Your response should describe how your offering would meet these requirements. Vendors must provide clear and concise responses, illustrations can be provided where appropriate. Any additional feature descriptions for your offering can be provided, if applicable.

Example of Wired Switch Bid Specifications from Extreme

Extreme Summit G2 Series Stackable Switch

Must provide a stackable switch providing the following at a minimum:

- Must offer a modular switching solution that supports flexible port configurations providing the ability to support 10/100/1000Base-TX, 1000 Base-X SFP and 10GBaseX-SFP+ ports. Switches should be capable of supporting up to six 10GbE SFP+ ports. Please describe the available switch offerings including port densities and identify which switch models are recommended.
- 48 port switch must offer system performance of at least 336 Gbps switch bandwidth and 250 Mpps forwarding rate. Please describe the performance levels for the recommended switching solution.
- Must support cross-platform stacking capability offering the ability to stack with other switches from the same manufacturer. Please describe the stacking capability of the recommended switching solution and the ability to stack with other recommended switches
- Must support stacking of up to eight units in a stack.
- Must support flexible stacking options with an option for high speed stacking of up to 160 Gbps. Please describe the available stacking methods.
- It is preferred that the 10 Gigabit Ethernet modules will also be able to accept standard Gigabit SFP transceivers. Please describe the capability of your switch.
- Must support dual internal redundant power supplies that are hot-swappable.
- Must support 802.3af and 802.3at PoE+
- Must be capable of supporting up to 30 watts of PoE power per switch port. Please describe how the solution can achieve this.
- Must support a modular operating system that is common across the entire switching profile. Please describe the OS and advantages.
- Must support SNMPv1, SNMPv2c, and SNMPv3
- Must support RMON (Statistics, History, Alarms, Events)
- Must support routing protocols including: static routes, OSPF v2/v3, RIPv2, RIPv3, VRRP. Please describe if any licenses are required to enable these capabilities.
- Must support multicast protocols including: MVRP, IGMP v1/v2/v3, MLD v1/v2, PIM-SM, PIM-DM and PIM-SSM. Please describe if any licenses are required to enable these capabilities.
- Must support ingress and egress bandwidth policing/rate limiting per flow/ACL
- Must support egress bandwidth rate shaping per egress queue and per port
- Must support up to 8 QoS egress queues per port
- Must support high availability network protocols. Please describe any

- specific features supported by the switch to ensure high availability.
- Must support 802.1w Rapid Reconfiguration of Spanning Tree and 802.1s
- Multiple Spanning Trees
- Must support Port mirroring options (one-to-many, many-to-many)
- Must support 802.3ad Link Aggregation. Please specify the number of LACP groups.
- Must support LLDP and LLDP-MED
- Must support RADIUS Accounting and TACACS+
- Must support MAC security with lockdown and limit capabilities
- Must support line sFlow v5
- Must support Denial of Service (DoS) protection. Please describe the switch capabilities to protect against DoS attacks.
- Must be capable of implementing user policies that are independent of the VLAN assigned to the port.
- Must CLEAR-Flow, threshold-based alerts and actions.
- Must support the ability to authenticate multiple users on a single port via 802.1X, web or MAC at the same time.
- Must support a Lifetime Warranty that includes sustaining releases for software, phone support and advanced hardware replacement. Please describe the warranty that is provided.

Value-Added Considerations

Please outline value-added features based on product(s) and/or service(s) of your organization.

Vendor Response:

Extreme Summit X440 Series Switch

Before preparing your RFP Response, please read carefully all sections of the RFP. Please respond with Comply or Does Not Comply and provide a supporting narrative response if necessary. If more than one product is being utilized to provide similar functions in each case, address the requirements below for each product quoted. TCA will consider any vendor not responding to each requirement for all products quoted to be non-responsive.

Access

The proposed solution must provide a 10/100/1000Base-TX Ethernet switch solution that meets the requirements provided below. Your response should describe how your offering would meet these requirements. Vendors must provide clear and concise responses, illustrations can be provided where appropriate. Any additional feature descriptions for your offering can be provided, if applicable.

- Must offer a modular switching solution that supports 24 or 48

10/100/100Base-TX ports and the capability to support either four 1Gig SFP ports and/or two 10Gig SFP+ ports. Please describe the recommended switching solution.

- · 48 port switch must offer system performance of at least 136 Gbps switch bandwidth and 101 Mpps forwarding rate. Please describe the performance levels for the recommended switching solution.
- · It is preferred that the 10 Gigabit Ethernet modules will also be able to accept standard Gigabit SFP transceivers. Please describe the capability of your switch.
- · Must support the capability to support dual redundant power supplies
- · Must support 802.3af and 802.3at PoE+
- · Must support a modular operating system that is common across the entire switching profile. Please describe the OS and advantages.
- · Must support cross-platform stacking capability offering the ability to stack with other switches from the same manufacturer. Please describe the stacking capability of the recommended switching solution and the ability to stack with other recommended switches
- · Must support stacking of up to eight units in a stack.
- · Must support SNMPv1, SNMPv2c, and SNMPv3
- · Must support RMON (Statistics, History, Alarms, Events)
- · Must support routing protocols including: static routes, OSPF v2/v3, RIPv2, RIPng, VRRP. Please describe if any licenses are required to enable these capabilities.
- · Must support multicast protocols including: MVRP, IGMP v1/v2/v3, MLD v1/v2, PIM-SM, PIM-DM and PIM-SSM. Please describe if any licenses are required to enable these capabilities.
- · Must support ingress and egress bandwidth policing/rate limiting per flow/ACL
- · Must support egress bandwidth rate shaping per egress queue and per port
- · Must support up to 8 QoS egress queues per port
- · Must support high availability network protocols. Please describe any specific features supported by the switch to ensure high availability.
- Must support 802.1w Rapid Reconfiguration of Spanning Tree and 802.1s Multiple Spanning Trees
- · Must support 802.3ad Link Aggregation. Please specify the number of LACP groups.
- Must support LLDP and LLDP-MED
- · Must support RADIUS Accounting and TACACS+
- · Must support MAC security with lockdown and limit capabilities
- · Must support IEEE 802.1 Audio Video Bridging to enable real-time audio/video transmission over Ethernet. Please describe if any licenses are required to enable this capability.
- · Must support line sFlow v5
- · Must support Denial of Service (DoS) protection. Please describe the switch capabilities to protect against DoS attacks.
- · Must support a Lifetime Warranty that includes sustaining releases for software,

phone support and advanced hardware replacement. Please describe the warranty that is provided.

TCA requires a centralized managed solution to manage the switches, access points and controller for the wired and wireless environment to provide the ability to monitor the network, provide network security, provide remote management, and system wide deployment of services. Optional plug in would be a MDM mobile device management solution. If your solution has that option, please provide documentation of your managed solution and include costs of installation, licensing and training and how it would integrate into an existing Microsoft domain network. Cost of this management solution should be a separate quote and not included in the infrastructure bid as it is erate ineligible.

Example of Extreme Centralized Management Solution:

Extreme NetSight applications

Vendor should provide a management solution meeting the following requirements as a minimum:

- Must provide a system-level management tool.
- Must provide centralized management for wired and wireless devices
- Must allow system-level operations such as device discovery, event management, logging and application maintenance to be performed centrally.
- Must include several purpose-built plug-in applications that are integrated to provide specific, value-add capabilities to the management system.
- Must provide the capabilities to modify, filter, and create your own flexible views of the network.
- Must allow for graphing or viewing in table format and multiple OIDs that are user selectable.
- Must provide a tool to find the physical location of systems and end users, and where they are connected, quickly and easily.
- Must allow scheduled events or tasks that the user can perform behind the scenes or schedule an event for another time in the future.
- Must provide a utility to view and select MIB objects from a tree-based representation and include a compiler for new or third-party MIBs.
- Must provide a system wide deployment of VLAN configuration and monitoring capabilities.
- Must provide comprehensive remote management support for all proposed network devices as well as any SNMP MIB-I or MIB-II manageable devices.
- Must support RADIUS and LDAP Authentication for users of the application.
- Must support secure https switch management
- Should provide a solution that can be installed on a virtual appliance. Please detail the requirements for the virtual appliance.

- Should provide an optional server appliance with all applications pre- installed (activated via license keys)

Optional plug-in application must be available to define system-wide policy rules for users, applications, protocols, VLANs and ports. Supporting the following additional functionality as a minimum:

- Must support the ability to define policies once and enforced the policies automatically on the proposed wired and wireless devices.
- Must be able to define policies to rate-limit bandwidth, throttle the rate of new network connections, prioritize based on Layer 2 or Layer 3 QoS mechanisms, apply packet tags, isolate/quarantine a particular port or VLAN, and/or trigger pre-defined actions.
- Must be able to deploy policies network wide with a single click.
- Must provide automated functionality to ensure that appropriate services are available to each user, no matter where they log on.
- Must provide ease of implementation, administration and troubleshooting.
- Must provide an audit trail (event log).
- Must work with existing authentication practices
- Must support 802.1x, Radius and MAC authentication
- Must allow IT administrators to easily define a number of pre-configured network policies, and designate select personnel to activate/deactivate these policies as appropriate
- Must be able to instantly permit or block network activities including Web access, email or peer-to-peer file sharing
- Must be easy to configure and deploy providing a simplified, point-and- click Web-based management application
- Must not require any end-user client or software agent

Optional plug-in application must be available to provide comprehensive network inventory and change management capabilities. Supporting the following additional functionality as a minimum:

- Must provide a detailed inventory of products organized by device type.
- Must provide the ability to track device attributes such as serial number, asset tag, firmware version, CPU type, and memory.
- Must support the ability to present detailed configuration information including date and time of configuration saves, firmware version, and file size.
- Must record a history of device attributes, and reports any changes made to the device.
- Must be able to provide a history of firmware and configuration changes made to a device.
- Must provide a centralized history of inventory management operations.

- Must be able to generate valuable, in-depth reports for network inventory planning purposes.
- Must support the ability to download firmware to single or multiple devices simultaneously.
- Must be able to download boot PROM images to single or multiple devices simultaneously.
- Must be able to schedule routine device configuration back-ups.
- Must be able to download text-based (ASCII format) configuration templates to one or more devices.

Optional plug-in application must be available that intelligently interacts with advanced security applications to automate responses to security incidents meeting the following requirements as a minimum:

- Must provide a dynamic, configurable threat containment solution with a broad range of response, logging and auditing options
- Must instantly identify the physical location and user profile where an attack was sourced.
- Must be able to take action based on a predefined security policy, including the ability to notify the intrusion detection system of the actions taken via a SNMPv3 trap (inform).
- Must be able to automatically disable or isolate the source of illegal or inappropriate traffic that has identified from an IDS system.
- Must provide a granular control (per-user, per-application) over suspicious activities and unauthorized network behavior
- Must provide granular, port-level control based on threat and event type
- Must provide event log and reporting
- Must implement a “quarantine role” for the user connected to the port
- Must be able to isolated and quarantined the attacker without disruption to other users, applications and business critical systems
- Must dynamically deny, limit or change the characteristics of the user’s access to the network

Optional plug-in application must be available that provides a unified view of all applications meeting the following requirements at a minimum:

- Must provide a web interface that contains reporting, dashboards, troubleshooting and monitoring tools.
- Must provide web-based flexible view, device views, and event logs for the entire infrastructure.
- Must enable diagnosis of network issues and performance through real- time NetFlow analysis.
- Must provide port level analysis capability

- Must provide customizable reports

B: WIFI

The specifications provided in this section are intended to convey the characteristics of a system to provide wireless connectivity within the Tri-County Academy.

The Tri-County Academy is looking for quotations for a wireless infrastructure solution, priced by the number wireless access points and controller indicated at each site.

YCSO is currently has NO standardized platform. TCA has a preference for an Extreme solution for access points, controller and management software; however TCA will entertain proposed solutions from other manufacturers if the vendor can show equal or better functionality. It is the vendor's responsibility and obligation to provide documentation and other evidence that a non-Extreme product is functionally equivalent or better. Without such documentation, TCA cannot accept the argument on functional equivalency or better based upon on cost alone.

The scope of the project will be as follows:

- Provide wireless access points and cabling to access points for every classroom. TCA will provide the location of the new access points and those being replaced. The controller can be on site or cloud based.
- Install and configure a wireless solution for the school which will replace the schools existing wireless system. The proposed solution could require a controller appliance but be centrally managed in the cloud such as Extreme Netsight.
- Vendor must be a participant in manufacturer's partner program.
- Vendor must have all engineers certified in the manufacturer's access points and controller. All existing equipment in TCA must be functional after installation and configuration.
- Provide training to TCA technical staff on the configuration and management of all devices. This training should include any and all aspects of configuring, installing, and managing the entire wireless infrastructure, including signal mitigation and best practices. Training may be provided by the vendor or can be offered at an authorized training center.
- All equipment and material should be new. Used, refurbished or repurposed equipment or material will not be acceptable.
- Management and configuration tools to configure and manage the network devices are included in this project. Management solution should include optional MDM solution to manage mobile devices. E-rate eligible software or equipment should be listed separately on proposal but included in the total cost of the bid.
- Project must be field supervised by an Engineer with the appropriate manufacturer's certification. (Please include information on who will perform this service.) Limited lifetime warranty for all LAN/WLAN components. Vendor must be able to provide quality

- in-house industry certified engineers for post-installation support.
- Vendor must provide evidence of successful past performance of the installation and configuration of wireless solutions in a LAN in the MS K-12 environment.

Minimum Technical Requirements

In additions to the requirements listed above, the equipment included in the proposals needs to at least meet the following minimum requirements:

- Web based management (HTTP/HTTPS)
- Management Software must be able to reside onsite, in the public cloud, or the private cloud
- All AP's must have a TPM Chip (Tamper Protection Module)
- Must provide deep packet inspection and application visibility – NOT URL MAPPING
- Must include a console port for Manageability, Configuration and Troubleshooting
- Management software must be able to manage multiple versions of the OS
- AP must be 3x3:3
- Interoperable for existing 802.11 A/B/G/N
- POE Ready
- Multi-cast Compliant
- Dynamic Frequency Selection compliant
- Ability to be centrally managed
- Ability to integrate with Microsoft active directory
- Ability to verify a username and password against a Microsoft directory using a Windows OS or Apple OS device without having to make manual configurations to the device
- Ability to manage and maintain separate user groups
- Ability to securely manage groups within both a single broadcast domain and within a routed environment.

Example of Extreme AP Wireless – Bid Specifications

- Must integrate seamlessly into existing wired infrastructure and existing wireless controller
- Access Points must support dual concurrent, dual-band 802.11a/n (5 GHz) and 802.11b/g/n (2.4 GHz) connectivity
- Access Points options should be available that support 802.11ac operating in 3x3 MIMO with 3 spatial streams and 2x2 MIMO with 2 spatial streams
- Access Points must be energy efficient, supporting 802.3af PoE and using less than 12.95 Watts of power with all functionality enabled
- Access Point should provide the option for an external power adapter
- Access Points should be available with internal antenna options. Please describe available APs and the antenna options.
- Please provide the maximum transmit power of each radio
- Access Point must be capable of delivering up to 1.75 Gbps over-the-air performance. Please detail which access points in your portfolio support this requirement.
- Access Points must support performance of up to 75,000 pps on the wired port. Please detail which access points in your portfolio support this requirement.
- Access Points must support a semi-autonomous mode of operation being able to support intelligent AP encryption, security, filtering, RF Management and QoS, without dependency of the wireless appliance.
- Must support rate limiting at the AP
- Access Points must simultaneously support tunneled traffic and bridged traffic at the AP
- Must support assignment of role-based policies to the clients/devices without requiring segmentation via dedicated SSIDs. Please describe how this is supported.
- Access Points must support self-forming and self-healing meshing
- Access Point must support plug and play installation
- Access Points must support RF spectrum analysis and fingerprinting
- Access Points must support a hybrid mode of operation being able to support security scanning/spectrum analysis and serving clients on the same radio
- Access Points must be able to be configured to provide load balancing and band-steering. Please describe the capability.
- Access Points must support IEEE 802.11h for dynamic channel control
- Access Points must support up to 16 SSIDs (8 per radio)
- Access Points RF Management must support automatic channel selection and transmit power controls
- Access Points RF Management must adapt to new channels based on user configurable signal-to-noise ratio and channel occupancy

- Access points must support 802.11e protocols including WMM, TSPEC and U-APSD.
- System must support centrally-deployed configurations and upgrades. Please describe this capability.
- Must provide the capability to ensure equal airtime for all clients in environments where there is a mix of 802.11ac, n, and a/b/g clients. Please describe how this capability is provided.
- Must support fast, secure roaming and handover (pre authentication, OKC), as well as seamless roaming between IP subnets and multiple controllers. Please describe this capability.
- Must support a lifetime warranty on access points. Please describe the warranty offered for the wireless access points

Value-Added Considerations

Please outline value-added features based on product(s) and/or service(s) of your organization.

Vendor Response:

Vendor must provide a WLAN System meeting the following requirements as a minimum:

Wireless System Features:

- Must integrate seamlessly into existing wired infrastructure (If not replacing entire Wi-Fi system)
- Access Points must support dual concurrent, dual-band 802.11a/n (5 GHz) and 802.11b/g/n (2.4 GHz) connectivity
- Access Points must support 802.11n operating in 3x3 MIMO with 3 spatial streams.
- Access Points must be energy efficient and should use less than 12.8 Watts of power with all functionality enabled.
- Access Point must support 802.3af PoE and/or provide the option for an external power adapter.
- Access Points should be available with internal antenna options. Please describe available APs.
- Access Points must support wired performance of up to 75,000 pps
- Access Points must support a semi-autonomous mode of operation being able to support intelligent AP encryption, security, filtering, RF Management and QoS, without dependency of the controller.
- Must support policy enforcement and rate limiting at the AP. Please describe this capability.
- Access Points must simultaneously support tunneled traffic and bridged traffic at the AP.
- Access Points must support an 802.1x supplicant to prevent the access points' wired connection from being used by unwanted devices.
- Access Points must support self-forming and self-healing meshing

- Must provide the capability to ensure equal airtime for all clients in environments where there is a mix of 802.11a/b/g clients and 802.11n clients. Please describe how this capability is provided.
- Access Point must support plug and play installation
- Access Points must support RF spectrum analysis and fingerprinting
- Access Points must support a hybrid mode of operation being able to support security scanning and serving clients/spectrum analysis on the same radio.
- Access Points must be able to be configured to provide load balancing and band-steering. Please describe the capability.
- Maximum transmit power of each radio should be 23 dBm.
- Access Points must support IEEE 802.11h for dynamic channel control.
- Access Points must support up to 16 SSIDs (8 per radio)
- Access Points RF Management must support automatic channel selection and transmit power controls.
- Access Point must support redundant data ports
- Access Points RF Management must adapt to new channels based on user configurable signal-to-noise ratio and channel occupancy.
- Access points must support 802.11e protocols including WMM, TSPEC and U-APSD.
- System must support centrally-deployed configurations and upgrades
- Must support fast, secure roaming and handover (pre authentication, OKC)
- Must support seamless roaming between IP subnets
- Must support seamless roaming between multiple controllers
- Must support assignment of policies to the clients without requiring segmentation via dedicated SSIDs
- Controllers must support a flexible deployment options supporting both a centralized or distributed architecture. Please describe the controller architecture.
- Wireless controller should be available as a hardware-based appliance or virtual appliance option. Please describe the available controller options.
- Must support authentication and encryption standards including: WEP, WPA (TKIP), WPA2 (AES), 802.11i, 802.1x
- Must support a customizable Captive Portal integrated with the controller
- Must allow non-technical personnel to create temporary guest accounts and distribute credentials through an easy-to-use graphical user interface
- Upon failure of an access point, neighboring access points must automatically expand their coverage to eliminate any uncovered areas, even when the access point cannot have access to the controller.
- Optimal channel selection must also be reconfigured dynamically and without user intervention.
- Controllers and access points must support IP Quality of Service at the wireless and wired side. Differentiation of packets must be supported for inbound and outbound wireless packets based on DiffServ, IP TOS and IP Precedence.
- Must support RADIUS Authentication and Accounting

- Must support a customizable Captive Portal integrated with the controller
- Must support session availability option for wireless controller. Please describe how this is accomplished and describe the cost for any extra licenses required for high availability.
- Must provide role-based policies providing security, access control and QoS priority that is implemented on a per user and per application basis.
- Must support unified wired and wireless role-based access control. Please describe how this is provided.
- Must support a lifetime warranty on indoor APs. Please describe the warranty offered.

TCA requires a centralized managed solution to manage the switches, access points and controller for the wired and wireless environment to provide the ability to monitor the network, provide network security, provide remote management, and system wide deployment of services. Optional plug in would be a MDM mobile device management solution.

Optional BYOD and Management features:

- Must support automated onboarding and separation of managed mobile devices
- Must support multi-level device profiling
- Must support automated context based policy provisioning of network services for mobile devices
- Must enable simplified compliance enforcement for managed mobile devices
- Must support a self-registration portal for guest access control features.
- Must also offer the option of sponsorship capabilities to validate guest registration without involvement of IT staff.
- Solution must support RADIUS and/or LDAP for authentication
- Must support automatic endpoint discovery and location tracking by identifying new MAC addresses, new IP addresses, new 802.1X / Web- based authentication sessions, or Kerberos or RADIUS request from access switches.
- Solution must control Bonjour and other multicast traffic to maximize network performance.
- Must support policies to permit, deny, prioritize, rate-limit, tag, re-direct and audit network traffic based on user identity, time and location, device type and other environmental variables.
- Must provide single pane of glass management of the entire infrastructure including Wireless and BYOD devices.
- Must support unified wired and wireless role-based access control.
- BYOD appliance should be available as a hardware-based appliance or virtual appliance option.
- Must provide a multi-vendor management solution capable of basic system-level management.
- Must provide single pane of glass management of the entire infrastructure including

Wireless and BYOD devices.

- Management application must include:
 - Wired and wireless dashboards with drill down ability
 - Detailed identity and access information
 - Customized reporting for historical and real-time data
 - Interactive topology maps
 - Device views
 - Events logs
 - Device search functionality
- Must provide comprehensive visibility into all managed mobile devices in the infrastructure.
- Must provide open XML APIs for integration with third party applications.

Optional Managed Wireless Solution of Wireless Network

As an option to the bid the Tri-County Academy is seeking the services to provide for the operation, management and monitoring of eligible broadband internal connections components, the wireless access points and controllers (e.g. managed Wi-Fi). The access points and controllers to be managed include any new equipment installed in this project and/or any existing access points in the network. The managed services should be for a period of three years. This bid option should be listed as a separate line in the quote and management should be from a district level. The technical department of TCA will have access to the managed services to make changes as deemed necessary. A detailed description of the services included in the quote should be described in documentation with the bid quote. Services will include but not limited to the following:

- The creation and management of SSIDs in the initial setup and for future changes as needed
- The management of switches as related to wireless configuration such as the creation of vlans for traffic management.
- Initial setup and configuration of services as indicated in the specifications such as Bonjour, gateway, radius authentication and integration into Microsoft active directory.
- 24x7 technical support for emergency situations.
- Training of TCA technical staff on use of management system

III. TCA Responsibilities

1. Access for Installation

TCA will, during the progress of the installation, allow the Service Provider and its employees access to the premises and facilities at all reasonable hours or at such

hours as TCA representative and the Service Provider agree upon.

2. Heating/Cooling

Provide heat or cooling when required and general illumination in rooms where work is to be performed by The Service Provider.

3. Inspections

Promptly make inspections when notified by the Service Provider that the equipment or any part thereof, is ready for acceptance.

4. Electrical

TCA will provide all electrical needs within TCA buildings.

5. Delay in Work

It is understood that the Service Provider will not be held accountable for any delays caused by TCA.

IV. THE SERVICE PROVIDER'S RESPONSIBILITIES

1. Provision

The Service Provider must provide all supervision, tools, equipment, hardware and wiring materials as specified; transportation, erection, construction, unloading, inspecting, and keeping inventory as specified in attached contract documents. Whenever in the Contract the terms "provide, furnish, supply, install, etc.", can be interpreted as requiring the Service Provider both to furnish and/or install materials, unless specific provisioning/installation of the materials by TCA is denoted.

2. Ceiling Tiles

Provide for the removal and reinstallation of all ceiling tiles as needed. Any broken ceiling tiles will be replaced with equal or better quality of the damaged ceiling tiles.

3. Identification

The Service Provider will identify to TCA any work necessitating cutting into or through any part of the building structure such as girders, beams, concrete, tile floors or partition ceilings.

4. Damage

The Service Provider will be responsible for repairs of damage to the building, roads, equipment, existing cable, or property. The Service Provider will promptly report to a representative of TCA any such damage to the building, roads, equipment, existing cable, or property that may occur while performing work in the facilities.

5. Installation

Install the equipment and hardware in accordance with the manufacturer's specifications. All equipment shall be sufficiently labeled such that the equipment designation or purpose, interconnections and cabling endpoints can be easily determined.

6. Test and Inspections

Conduct tests and inspections in the presence of the TCA technical representative after installation has been completed in order that TCA may be assured that the requirements for the installation are met.

7. Completion Notification

Promptly notify the TCA designated contact of completion of this proposed project.

8. Defects

The Service Provider will promptly correct all defects for which the Service Provider is responsible.

9. TCA Contact

The Service Provider must coordinate all work with the TCA designated contact.

10. Cleanup

Upon completion of the work each day, the Service Provider must remove all tools, equipment, rubbish and debris from the premises and must leave the premises clean and neat and in the same condition as it was found.

11. Subcontractors

The Service Providers may not use subcontractors to perform work. All responsibilities rest with the Service Provider.

12. Testing

The Service Provider will provide TCA with complete detailed test results. The test results must be delivered to TCA before payment.

13. Diagrams

The Service Provider shall furnish, with the quote, a complete set of drawings showing the design of the LAN infrastructure and the interconnection of all equipment installed. Diagrams will note the number of POE switches needed for each school's LAN installation.

14. Codes, Standards, and Ordinances

All work shall conform to the latest edition of the National Electrical Code, the Building Code, and all local codes and ordinances, as applicable.

15. Safety

The Service Provider shall take the necessary precautions and bear the sole responsibility for the safety of the methods employed in performing the work. The Service Provider shall at all times comply with the regulations set forth by federal, state, and local laws; rules; and regulations concerning "OSHA", and all applicable state labor laws, regulations, and standards. The Service Provider shall indemnify and hold harmless The Customer from and against all liabilities, suits, damages, costs, and expenses (including attorney's fees and court costs) that may be imposed on the Customer because of the Service Provider, subcontractor, or supplier's failure to comply with the regulations stated herein.

16. Patents and Royalties

The Service Provider, without exception, shall indemnify and hold harmless The Customer and its employees from any liability of any nature or kind, including costs and expenses for or on account of any trademarked, copyrighted, patented, or non-patented invention, process, or article manufactured or used in the performance of the Contract, including its use by the Customer. If The Service Provider or subcontractor uses any design, device, or material covered by letters, patent, trademark, or copyright, it is mutually understood and agreed without exception that the proposal prices shall include all royalties or cost arising from the use of such design, device, or materials in any way involved in the work.

17. USAC Certifications

The Service Provider must be an approved USAC service provider with a current SPIN and SPAC. It will be the responsibility of the Service Provider to maintain all USAC certifications throughout the term of the contract.

18. Indemnification

The Service Provider shall indemnify and hold harmless TCA, its agents and employees from or on account of any injuries or damages, received or sustained by any person or persons during or on account of any operation connected with this Contract; or by consequence or any negligence (excluding negligence by the Customer, its agents, or employees) in connection with the same; or by use of any improper material or by or on account of any act or omission of said Service Provider or its subcontractors, agents, servants, or employees. The Service Provider further agrees to indemnify and hold harmless the Customer, its agents or employees, against claims or liability arising from or based upon the violation of any federal, state, county, city, or other applicable laws, bylaws, ordinances, or regulations by the Service Provider, its agents, associates, or employees.

The indemnification provided above shall obligate the Service Provider to defend at its own expense or to provide for such defense, at the Customer's option, of any and all claims of liability and all suits and actions of every name and description that may be brought against the Customer which may result from the operations and activities under this Contract whether the installation operations be performed by the Service Provider, subcontractor, or by anyone directly or indirectly employed by either.

The award of this Contract to the Service Provider shall obligate the Service Provider to comply with the foregoing indemnity provision; however, the collateral obligation of insuring this indemnity must be complied with as set forth.

QUOTE SUBMISSION FORM

Company Name of Service Provider__

Corporate Headquarters Address __

City _____ State _____ Zip _____

Service Provider Contact Name __

Service Provider Contact Phone Number

Service Provider Contact Email Address _____

E-Rate Service Provider Name __

E-Rate Service Provider Identification Number (SPIN) __

Address of Mississippi Office __

City __ .State __ .Zip __ _____

Please include in the quote the product, model number, product description, quantity and unit pricing for POE switches/APs, and any additional equipment or materials needed for a complete LAN installation.

In addition to pricing information, please include the following information:

- Service Provider's Mississippi Division or Company's Organizational Chart including job titles, names, and departments, locations that will provide service and support
- Description of the Service Provider's capacity to provide support including names, position titles, and locations of technical support staff, sales staff, and management staff (i.e.: John Smith, Director of Sales – Jackson, MS)
- Description of Help Desk Procedures
- Description of warranty information for all proposed products
- Description of Service Response Procedures
- Description or list of service locations that will provide service and support for the installation, the number of technicians available for that support, and average response times for service calls in the Yazoo area.
- Three references for similar installations as described in the specifications.
- Full Description of the LAN equipment installation to be provided (to include performance specifications and all necessary installation and equipment) for the connections for selected TCA school buildings.
- Diagram of proposed LAN network including location and placement of the number of POE+ switches and UPS battery backups needed as well as number of patch cables and fiber jumper cables and GBIC modules.

- Similar Project Examples and References

SITE VISIT FORM

DATE _

SERVICE PROVIDER NAME _

CONTACT INFORMATION FOR CHANGES / UPDATES / CLARIFICATIONS

Name _

Phone Number _

Email Address _