RFP Wireless 2017

Picayune School District

706 Goodyear Blvd.
Picayune, MS 39466
Phone: (601) 798-3230
Fax: (601) 798-1742

www.pcu.k12.ms.us

The Picayune School District (PSD) desires to purchase cabling, firewall, switches, UPSs, and wireless access points to make all schools campuses Wi-Fi accessible.

Selection Schedule

Questions must be submitted via email to: fparker@pcu.k12.ms.us

RFP Released	**March 8, 2017**
Mandatory Bidder's Conference	**March 17,2017 10:00am**
Final Day for Questions	**March 24, 2017**
Response Deadline – Bids Close	**April 6, 2017 10:00am**
Bid Opening	**April 6, 2017 11:00am**
Contract Award by Board of Trustees	**April 25, 2017**

Submit Sealed Proposal and Supporting Documentation to:

Picayune School District
Lisa Persick Finance Director
706 Goodyear Blvd.
Picayune, MS 39466

Note:

No faxed or emailed proposal will be acknowledged or allowed.   Sealed proposals should be clearly marked "**Sealed Bid**" "**RFP Wireless 2017**".   Mail or hand deliver to the address listed above.   Proposals received after the deadline will be rejected.

Please submit (2) printed copies of proposal and one electronic copy on CD,DVD or USB.

Vendors must also include a printed copy and electronic copy of the **completed Excel spreadsheet** with their proposal response.

There will be a **required** onsite bidder's conference at the Picayune School District Office, 706 Goodyear Blvd. Picayune, MS 39466 on March 17, 2017 at 10:00am CST.   Failure to attend the bidder's conference will result in the rejection of the proposal.

RFP Specific Response Requirements

Bidders must submit a description of their company's experience, qualifications, and the technical certifications of the personnel responsible for completion of the project.   This should be no more than one page.

Bidders must submit the names and contact information for three customers who can provide specific references for the installation of building-wide Wi-Fi installations of Meraki or equivalent hardware and infrastructure.

CRITERIA FOR SELECTION
PSD will utilize the following criteria as the basis for the proposal evaluations and selection:

- Price of goods and services
- Preference will be given for prior positive experience with the Vendor
- Preference will be given to a Mississippi based Vendor
- Preference will be given for Vendors proposing devices (access points, switches, security cameras and firewall) of the same manufacturer

CONTRACT TERMS
The initial term of the contract term will begin July 1, 2017 and end September 30, 2020.   Contract should provide for extensions to align with service delivery deadline extension approvals granted by the Universal Service Administrative Company (USAC).   **Initiation of the contract is dependent on E-Rate funding and PSD funding; in the event E-Rate does not fully fund the project or insufficient PSD funds then the contract will be null and void.   The district reserves the right to waive the ERATE funding requirement.**

RESERVATION OF RIGHTS
The District expressly reserves the right to:
     (a) Reject or cancel any or all proposals;
     (b) Waive any defect, irregularity or informality in any Proposal or Proposal procedure;
     (c) Waive any informalities, minor deviations from specifications at a lower price than other proposals meeting all aspects of the specifications if it is determined that total cost is lower and the overall function is improved or not impaired;
     (d) Extend the Proposal opening time and date;
     (e) Reissue a Proposal invitation;
     (f) Consider and accept an alternate Proposal as provided herein when most advantageous to the District
     (g) Cancel the contract with a thirty day written notice; and
     (h) Procure any item or services by other means
     (i) Modify quantities and/or configuration requirements

BID SUBMISSION-EXCEL SPREADSHEET TEMPLATE REQUIRED

Vendors shall use the Excel spreadsheet provided as part of this RFP to complete their response. All columns defined in the spreadsheet must be completed. Zero (0) should be entered in any column for which there is no cost. Vendors may add columns if they deem it necessary to provide accurate cost information. Vendors may add rows if there is an additional item needed for the suggested solution. No columns or rows may be deleted. Any rows or columns added should be highlighted and explained with supporting documentation. Vendors must include a printed copy and electronic copy of the completed Excel spreadsheet with their proposal response. Excel spreadsheet is to be used as guidance only and quantities have been set per PSD but may change at the discretion of PSD.

Bidders must provide the E-rate eligible portion (0% - 100%) of all items. Bidders must read and understand the FCC E-Rate Eligible Services List for FY2017 - http://www.usac.org/sl/applicants/beforeyoubegin/eligible-services-list.aspx - and know the product E-Rate eligibility per the manufacturer for any item submitted for bid by the service provider.

References to brand names, model numbers, or other descriptions are made to establish a required level of quality and functional capabilities and are not intended to exclude other manufacturers. Comparable products of other manufacturers will be considered if proof of comparability, equivalence, and compatibility is contained in the proposal. Vendors, if proposing other than specified, are to clearly identify the manufacturer and the model number and must provide written, complete justification as to how the product complies with all specifications outlined within this RFP and how the product integrates with existing devices as well as the complete list of manufacturer published specifications related to the requested products. It shall be the responsibility of the bidders to furnish descriptive literature with their proposal such that specifications, catalog pages, brochures or other data will provide an adequate basis for verifying the quality and functional capabilities of the product offered. Failure to provide this data will be considered valid justification for rejection of the proposal.

In order to ensure compatibility and common configuration/management interface, preference will be given to the bidders whose devices (access points, switches, security cameras, and firewall) are of the same manufacturer.

Unless otherwise specified, vendors shall provide everything required to make the devices, software, appliances, installation, etc. 100% operational. This includes but is not limited to patch cables, connectors, dongles, mounting hardware, etc.

E-RATE COMPLIANCE

It is expected that the awarded service provider shall be in compliance with rules and regulations of the Universal Services Support Mechanism for Schools and Libraries ("E-Rate Program") administered by the Universal Service Administrative Company (USAC). All charges for services provided should be billed and invoiced to both the District and SLD following USAC's invoicing procedures for E-rate funding year 2017.

The Service Provider is responsible for providing a valid 498 ID (formerly known as a SPIN) at the time the bid is submitted.

The service provider is responsible for providing an FCC Registration Number with their proposal and evidence of being in green light status. See: https://fjallfoss.fcc.gov/coresWeb/publicHome.do

No later than July 1, 2017, the awarded service provider must file a Service Provider Annual Certification Form (SPAC-Form 473) for E-Rate funding year 2017.

All Service Providers will be responsible for procuring the approved E-rate discount amount from USAC using the Service Provider Invoicing ("SPI"- Form 474) method unless otherwise directed by the District. The District may utilize the reimbursement (Form 472) method at its sole option.

In the event of questions during the E-Rate program integrity assurance (PIA) review process, the successful service provider is expected to reply within 3 business days to questions associated with their proposal.

The awarded service provider(s) must agree to retain all relevant documentation related to the E-rate funding requests associated with their SPIN for a period of at least TEN years after the last day of service delivered. Furthermore, the awarded service provider must certify that they will retain all documents necessary to demonstrate compliance with the statute and Commission rules regarding the application for, receipt of, and delivery of services receiving schools and libraries discounts, and that if the District is audited, the service provider will make such records available to the District. All awarded service providers acknowledge that they may be audited pursuant to participation in the schools and libraries program.

DISQUALIFICATION:
Any potential bidder found to be in Red-Light Status will be disqualified from participation in the bidding process and will be considered non-responsive.

Failure to provide a valid 498 ID (formerly known as SPIN) and FCC Registration Number will result in disqualification of bid awards for E-Rate eligible goods and services.

Failure to attend the bidder's conference will result in rejection of proposal.

Installation Requirements

- The selected vendor must be able to meet onsite with the PSD IT staff to complete a schedule and scope of work before installations can begin. Vendor will coordinate with PSD to schedule deployments of hardware in such a way as to minimize the impact on network users.
- If PSD elects, vendor will deliver all equipment to the PSD Technology department to have asset tags affixed if necessary. PSD will coordinate with the vendor to schedule the delivery and installation. Vendors are expected to pick up devices from the PSD Technology department for delivery to school locations as scheduled.
- Vendor will remove and dispose of all packaging and miscellaneous materials left over from any part of the installation and place all trash in an identified on-site dumpster or taken by the vendor to an off-site location. PSD personnel will not dispose of any packing materials.
- All additional cables, connectors, screws, labor, miscellaneous plug parts, modules, etc. needed to make the wireless access points 100% operational should be included in the installation cost and provided by the vendor. Any costs not outlined in the vendor proposed budget that may be required for the successful completion of the installation of the devices are assumed to be provided by the vendor and at no cost to PSD.
- All cabling to make the access points and switches 100% operational shall be provided as part of the project. Cabling should be completed by certified technicians and meet all ANSI/TIA/EIA-568-B standards.

Suitable wiring raceways, panduit, conduit and moldings to achieve a finished installation appearance must be used. All additional connectors, screws, labor, panduit, conduit, ties, hangers, jacks, cables, parts, modules, etc. needed to make the cables connecting the wireless access points to the designated switch and/or patch panel in order to make the access points 100% operational should be included in the installation cost and provided by the vendor. Any costs not outlined in the vendor proposed budget that may be required for the successful completion of the installation of the devices are assumed to be provided by the vendor and at no cost to PSD.

- Hardware inventory will be provided to PSD by the vendor including but not limited to device model number, serial number, PSD asset tag number, MAC address, and location.

- Vendor will install and mount all switch components in the designated rack at each location.   The vendor will provide all required rack mounting hardware needed for installation and mounting. Some location may need standard racks installed.

- Vendor will coordinate with PSD IT staff to install and configure all software, appliances, and any other applications required to make the Wi-Fi devices 100% operational.   The vendor will provide training/knowledge transfer to PSD IT staff to demonstrate functionality of all devices and monitoring systems.

Technical Requirements and Item Descriptions

PSD desires to purchase Cisco Meraki or equivalent access points, firewall, and network switches for all MDF and IDF closets to provide campus wide Wi-Fi in all PSD schools.   PSD desires to purchase all cabling and hardware required for the successful completion of the project from a single provider.

As part of the installation, vendors shall include any and all SFPs, cables, brackets, mounts, etc. to make each switch and module 100% operational. Any costs not included in the installation required for the successful installation of the devices are assumed to be provided by the vendor and at no cost to PSD.

Specifications for devices or their equivalent are as follows:

- Solution must be compatible and/or equivalent with Cisco Meraki cloud architecture.
- Solution cannot include any "on-premise" management appliances, servers, or virtual machines.
- The wireless system must support a stateful application-layer firewall that can identify, classify, and prioritize applications using layer 7 intelligence.   Applications should be able to be traffic shaped as well to ensure that recreational applications (like Pandora, Spotify, etc.) do not consume all of the available bandwidth.
- The wireless system must include intuitive multi-site scalability and management.   Must be able to deploy multiple sites rapidly and monitor, manage and troubleshoot all sites from a single web-based interface. This includes being able to "clone" configurations of devices automatically, and easily re-assign assets to other network areas as needed.   This must be 100% GUI based, and no Command-Line (CLI) programming for any features is permitted.
- The wireless system must support the ability to fingerprint client device types (i.e. iPad, Android, iPhone, Windows, etc) and apply security settings to those devices, without the need for additional appliances or licenses.   For example: iPads on the Student SSID may have access to only the web and are rate limited to 512 kbps, and no peer to peer traffic is allowed.
- The wireless system must have commonly managed products (WLAN, Security Appliances, Access Switches, Integrated MDM) that allow for end-to-end deployment, monitoring, and troubleshooting from single pane of glass, and seamless expansion beyond the wireless network alone.
- The wireless system must support Bonjour gateway services to allow Airplay, printing, iTunes and other Bonjour-based services to flow seamlessly across the wireless network.
- The wireless system must support integration with Google Maps, with the ability to upload a custom floor plan and overlay it on the map.
- The wireless system must support the ability to easily replicate and clone configurations across multiple different sites using a single click.   Ideally, a configuration could be changed once and then replicated across multiple sites.
- The wireless system must support the ability to take a packet capture directly from the management interface. This packet capture should be able to filter based on client, IP address, and MAC address.
- The wireless system must support the ability to provide deep application visibility into all of the applications that are used on the wireless network, including hostname visibility to view the individual URLs of all of the applications.   This information should be exportable and downloadable on a per network and per SSID basis.
- The wireless system should have built in guest access and not require any additional appliances or licenses for guest users.

- The wireless system must have a way to open cases with support and monitor their status directly from the management console.

- The wireless system must include a tagging function to provide easy search-ability across our network, device types, and users with search "tagging" functionality.

- The wireless system must support the ability to send summary reports to certain administrators on a daily, weekly and monthly basis.   These summary reports should show information like top users, top applications, bandwidth consumed per day, etc.   These summary reports should be able to be sent on a per school basis, or aggregated for multiple schools using a tagging mechanism

- Solution must include a zero-cost, fully integrated Mobile Device Management platform capable of managing Apple iOS, Android, Windows, and Mac OSX devices all from the same common management interface as the WLAN, Access Switching, and Security Appliance products.   MDM functionality must require no local hardware, software, or virtual machine appliance to operate, and must be 100% Cloud based for management, with the ability to assign policies via the management interface to different users, networks, and device types based on preferences.

- Examples of attributes include VLANs, firewall rules, and splash pages.   Must be able to easily prioritize and/or throttle specific applications or application type.   Group policies must be universally applicable to all network components (access points, switches, and security appliances).

- The wireless system must be PCI Compliant.   Built-in Payment Card Industry (PCI) DSS Level 1 Certified compliance reporting and remediation wizard required.

- Solution must provide rich layer 7 application visibility and control, with a full heuristics-driven engine (Not TCP/UDP Port Based) for classification (e.g. Skype, BitTorrent, web traffic) and shaping of that traffic.

- Solution must include fully integrated client, device, and OS visibility, with ability to assign policies via the management interface to different users, networks, and device types based on preferences.   Group policies must be universally applicable to all access points and switches.   Management interface must be 100% GUI based, and no Command-Line (CLI) programming for any feature is permitted.

- Must maintain common management, inventory, and historical logging interface of existing network systems and new cloud based systems.

- Minimize any conflicts between existing and new wireless systems, and prevent any loss of coverage or operations with the existing wireless network.

- Wireless system must have built-in redundancy and reliability.   Solution must be able to provide a 99.99% service level agreement, leveraging globally redundant cloud data centers.

- The wireless system must include a free of charge, web based management application.   This application must be supported on both Apple iOS and Android mobile operating systems.   This single mobile application must be able to do the following:
  - Monitor wireless, switching, and security infrastructure
  - See all wireless, switching, and security infrastructure network status and usage via easy to read graphs and tables
  - Receive push notifications for any network outages
  - Scan access point barcodes to facilitate adding them to the network
  - Utilize the mobile device's camera to photograph and document access point mounting locations
  - Pinpoint access point location using Global Positioning System (GPS)
  - Verify device and client connectivity using live tools like Ping, Traceroute, etc.
  - Remotely reboot devices without on-site staff intervention

- o Quickly deploy group policies to clients that control L3/L7 firewalling, traffic-shaping, and content filtering
- o Provide the capability to easily block clients from the network
- o Be both PIN code and Password securable
- o Provide easy access to Support Case management
- o Be able to read device event logs remotely
- o Show individual client Application Usage history (example - YouTube, Instagram, Facebook, etc.)

Cisco Meraki MR42 Cloud Managed Access Point compatible and/or equivalent with License. Licenses must include cloud services, software upgrades and support for 5 years.
Part Number: MR42-HW / LIC-ENT-5YR
Estimated Quantity = 210

The quantity of access points needed is calculated using the square footage, classroom counts, and building design.   The solution proposed includes one access point in every other classroom, and should provide coverage in every common area, administrative area, and instructional space in each building.   Access points and network design should be designed and installed with enough access and capacity to support 1:1 technology initiatives at each location with a student density of 25 devices per AP in each classroom and 80-100 devices in each common area. The quantities listed in this RFP should be used as guidance and was set as the desired amount of access point by PSD if funding allows.

Access to building drawings showing network MDF and IDFs will be provided at the mandatory bidder's conference.   There will be no scheduled walkthroughs at each location; however, vendors may visit each location at their convenience.   If a vendor needs/wants access inside each MDF/IDF, the vendor can contact the District and be given a time to meet IT personnel at the school location.   The time scheduled will be at the discretion and convenience of the district.

Specifications for Cisco Meraki MR42
Cisco Meraki MR42 or compatible and equivalent 802.11ac access point must include stateful firewalls, teleworker VPN, full-time intrusion and rogue scanning, Network Access Control, adult content filtering, and WPA2-Enterprise/802.1X integration. Solution must include cloud architecture that is fully integrated with the same cloud switch management as our existing Meraki infrastructure and remove the need for any controllers or hardware/software overlay management.
- **Radios**
  - o 2.4 GHz 802.11b/g/n client access radio
  - o 5 GHz 802.11a/n/ac client access radio
  - o 2.4 & 5 GHz dual-band WIDS/WIPS, spectrum analysis, & location analytics radio
  - o 2.4 GHz Bluetooth radio with Bluetooth Low Energy (BLE) and Beacon support
  - o Concurrent operation of all four radios
  - o Max aggregate frame rate 1.9 Gbit/s
  - o Supported frequency bands (country-specific restrictions apply):

    - 2.412-2.484 GHz
    - 5.150-5.250 GHz (UNII-1)
    - 5.250-5.350 GHz (UNII-2)
    - 5.470-5.600, 5.660-5.725 (UNII-2e)
    - 5.725-5.825 GHz (UNII-3)

- o
- **Antenna**
  - o Integrated omni-directional antennas (5 dBi gain at 2.4 GHz, 5.5 dBi gain at 5 GHz)
  - o Individual antenna elements for each radio
- **802.11ac Wave 2 & 802.11n Capabilities**
  - o 3x3 multiple input, multiple output (MIMO) with three spatial streams
  - o SU-MIMO and MU-MIMO support
  - o Maximal ratio combining (MRC) & beamforming
  - o 20 & 40 MHz channels (802.11n)
  - o 20, 40, & 80 MHz channels (802.11ac)
  - o Up to 256-QAM on both 2.4 & 5 GHz
  - o Packet aggregation
- **Power**
  - o Power over Ethernet: 37 - 57 V (802.3af compatible, with functionality-restricted 802.3af mode supported)
  - o Alternative 12V DC input
  - o Power consumption: 20 W max (802.3at)
- **Interfaces**
  - o 1 × 10/100/1000Base-T Ethernet (RJ45)
  - o 1 × DC power connector (5.5mm x 2.5mm, center positive)
- **Mounting**
  - o All standard mounting hardware included
  - o Desktop, ceiling, and wall mount capable
  - o Ceiling tile rail (9/16, 15/16 or 1 ½" flush or recessed rails)
  - o Assorted cable junction boxes
  - o Bubble level on mounting cradle for accurate horizontal wall mounting
- **Security**
  - o Integrated Layer 7 firewall with mobile device policy management
  - o Real-time WIDS/WIPS with alerting and automatic rogue AP containment with Air Marshal
  - o Flexible guest access with device isolation
  - o VLAN tagging (802.1q) and tunneling with IPsec VPN
  - o PCI compliance reporting
  - o WEP, WPA, WPA2-PSK, WPA2-Enterprise with 802.1X
  - o EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-SIM
  - o TKIP and AES encryption
  - o Enterprise Mobility Management (EMM) & Mobile Device Management (MDM) integration
- **Quality of Service**
  - o Advanced Power Save (U-APSD)
  - o WMM Access Categories with DSCP and 802.1p support
  - o Layer 7 application traffic identification and shaping
- **Mobility**
  - o PMK and OKC credential support for fast Layer 2 roaming
  - o Distributed or centralized layer 3 roaming
- **Analytics**
  - o Embedded location analytics reporting and device tracking
  - o Global L7 traffic analytics reporting per network, per device, & per application
- **Warranty**
  - o Lifetime hardware warranty with advanced replacement included

Cisco Meraki Switches: Compatible and/or equivalent:

24 Port Switches

Cisco Meraki MS350 Layer 3 Cloud Managed 24 Port GigE 740W PoE / PoE+ with Enterprise License
P/N: MS350-24X-HW / LIC-MS350-24X-5YR / MA-SFP-10GB-LRM (where needed)
Estimated Quantity = 4

- **Interfaces**
  - 16 × 10/100/1000BASE-T Ethernet (RJ45)
  - 8 x 10/100/1000BASE-T Ethernet with multigigabit capability up to 10 Gbps (Multigigabit speeds determined by Ethernet cable type)
  - 48V DC 802.3af/802.3at/uPoE Power-over-Ethernet (PoE/PoE+/uPoE) on MS350-24X models, available on all ports (maximum of 60W per port for uPoE)
  - 4 × SFP+ 10 Gigabit Ethernet interfaces for uplink
  - 2 × Stacking interfaces
  - Auto negotiation and crossover detection
- **Ethernet switching capabilities**
  - 802.1p Quality of Service prioritization
  - 802.1Q VLAN tagging with 4,095 addressable tags
  - 802.1D Spanning Tree Protocol (RSTP, STP)
  - 802.1ab Link Layer Discovery Protocol (LLDP)
  - 802.3ad link aggregation with up to 8 ports per aggregate
  - Broadcast storm control
  - IGMP snooping for multicast filtering
  - MAC forwarding table entries: 176,000
- **Security**
  - Integrated two-factor authentication
  - Role-based administration
  - Corporate wide password policy enforcement
  - IEEE 802.1X port-based security
- **Performance**
  - Non-blocking fabric
  - 432 Gbps non-blocking switching capacity
  - 2.5 microsecond latency
- **Power over Ethernet (PoE models):**
  - 802.3af/802.3at/uPoE Power-over-Ethernet (Maximum 60W per port)
  - Maximum PoE output: 740 W
  - Pre-standard PoE: supports pre-standard PoE devices
- **Management**
  - Managed via the cloud using the Meraki dashboard
  - Integrated with Meraki wireless, routing, and firewall management
  - No-touch remote deployment (no staging needed)
  - Detailed historical per-port and per-client usage statistics
  - DHCP and hostname fingerprinting
  - SNMP v2c
  - Seamless over-the-web firmware upgrades
- **Remote diagnostics**
  - Email and text alerts
  - Live remote packet capture
  - Aggregated event logs with instant search

- **Scalable stacking**
    - Virtually stack thousands of switch ports in a single logical stack for unified management, monitoring, and configuration
    - Physically stack up to 8 switches for added resiliency in high-throughput environments
    - Unified configuration and monitoring of all switches
- **Layer 3 capabilities**
    - Static routing
    - Dynamic routing (OSPFv2)
    - DHCP Server and Relay
    - Warm spare (VRRP) with DHCP Failover
- **Power**
    - Power input: 100-240 VAC, 47-63 Hz
    - Power consumption: 215-1655 W max
- **Environment**
    - Operating temperature: 32°F to 113°F (0°C to 45°C)
    - Humidity: 5 to 95% non-condensing
- **MTBF (at 25°C)**
    - 321,515 hours
- **Warranty**
    - Full lifetime hardware warranty with advanced replacement included
- **Physical dimensions (H × W × D)**
    - 1.74" x 19.1" x 20.4" (4.44 x 48.6 x 51.8 cm) with power supply fitted
    - Weight: 12.18 lbs (3.71 kg)

Cisco Meraki MS225 Layer 2 Cloud Managed 24 Port GigE 370W PoE / PoE+ with Enterprise License
P/N: MS225-24P-HW / LIC-MS225-24P-5YR / MA-SFP-10GB-LRM (where needed)
Estimated Quantity = 18

- **Interfaces**
    - 24 × 10/100/1000BASE-T Ethernet (RJ45) with auto-MDIX crossover
    - 802.3af/802.3at Power-over-Ethernet (PoE/PoE+) on MS225-24P models, available on all ports (maximum of 30W per port for PoE+)
    - 4 × SFP+ 10 Gigabit Ethernet interfaces for uplink
    - 2 × Stacking interfaces
    - Auto negotiation and crossover detection
- **Ethernet switching capabilities**
    - 802.1p Quality of Service prioritization
    - 802.1Q VLAN tagging with 4,095 addressable tags
    - 802.1Dw 802.1D Spanning Tree Protocol (RSTP, STP)
    - 802.1ab Link Layer Discovery Protocol (LLDP) and Cisco Discovery Protocol (CDP)
    - 802.3ad link aggregation with up to 8 ports per aggregate, Multichassis aggregates supported on stacked switches
    - Broadcast storm control
    - IGMP snooping for multicast filtering
    - MAC forwarding table entries: 16,000
- **Security**
    - Integrated two-factor authentication
    - Role-based access control (RBAC) with granular device and configuration control
    - Corporate wide password policy enforcement
    - IEEE 802.1X RADIUS, hybrid authentication and RADIUS server testing
    - MAC-based RADIUS authentication (MAB)
    - Port Security: Sticky MAC, MAC whitelisting

- o DHCP snooping, detection and blocking
  - o STP Enhancements: BPDU guard, Root guard
  - o IPv4 ACLs
- **Performance**
  - o Non-blocking fabric
  - o 128 Gbps non-blocking switching capacity
  - o Forwarding rate (mpps): 95.24
  - o Jumbo frame support (9600 byte Ethernet frame)
  - o Flow control support
- **Power over Ethernet (PoE models):**
  - o 802.3af (PoE) 15.4 W per port and 802/.3at (PoE+) 25.5 W per port
  - o Maximum PoE output: 370 W
  - o PoE available on all ports simultaneously
- **Management**
  - o Managed via the cloud using the Meraki dashboard
  - o Integrated with Meraki wireless, routing, and firewall management
  - o No-touch remote deployment (no staging needed)
  - o Detailed historical per-port and per-client usage statistics
  - o DHCP, client, and hostname fingerprinting
  - o SNMPd and SYSLOG supportfor integration with other network management solutions
  - o Seamless over-the-web firmware upgrades with scheduling and control
- **Remote diagnostics**
  - o Email, SMS and Mobile push notification alerts
  - o Cable testing and link failure detection with alerting
  - o Live remote packet capture
  - o Dynamic and interactive network discovery and topology
  - o Aggregated event logs with instant search
- **Flexible stacking**
  - o Virtually stack thousands of switch ports in a single logical stack for unified management, monitoring, and configuration
  - o Physically stack up to 8 switches with 80Gbs stack bandwidth
- **Layer 3 capabilities**
  - o Static routing (maximum of 16 static routes supported)
  - o DHCP Relay
- **Power**
  - o Power input: 100-240 VAC, 47-63 Hz
  - o Power consumption: 15-448 W
  - o RPS interface: Requires RPS 2300 chassis
- **Environment**
  - o Operating temperature: 32°F to 104°F (0°C to 40°C)
  - o Humidity: 5 to 95% non-condensing
- **MTBF (at 25°C)**
  - o MS225-24P: 391,648 hours
- **Warranty**
  - o Full lifetime hardware warranty with advanced replacement included
- **Physical dimensions (H × W × D)**
  - o 1.72" x 19.08" x 9.84" (4.38 x 48.46 x 25 cm)
  - o Weight: 8.18 lbs (3.71 kg)

8 Port Switches
Cisco Meraki MS220 Cloud Managed 8 Port GigE 124W PoE / PoE+ with Enterprise License
P/N: MS220-8P-HW / LIC-MS220-8P-5YR
Estimated Quantity = 15

- **Interfaces**
  - 8 × 10/100/1000BASE-T Ethernet (RJ45) with auto-MDIX crossover
  - 802.3af/802.3at Power-over-Ethernet (PoE/PoE+) on MS220-8P models, available on all ports (maximum of 30W per port for PoE+)
  - 2 × SFP+ 10 Gigabit Ethernet interfaces for uplink
  - Auto negotiation and crossover detection
- **Ethernet switching capabilities**
  - 802.1p Quality of Service prioritization
  - 802.1Q VLAN tagging with 4,095 addressable tags
  - 802.1D Spanning Tree Protocol (RSTP, STP)
  - 802.1ab Link Layer Discovery Protocol (LLDP)
  - 802.3ad link aggregation with up to 8 ports per aggregate
  - Broadcast storm control
  - IGMP snooping for multicast filtering
  - MAC forwarding table entries: 8,000
- **Security**
  - Integrated two-factor authentication
  - Role-based access control (RBAC) with granular device and configuration control
  - Corporate wide password policy enforcement
  - IEEE 802.1X RADIUS, hybrid authentication and RADIUS server testing
- **Performance**
  - Non-blocking fabric
  - 20 Gbps non-blocking switching capacity
  - 2.5 microsecond latency
- **Power over Ethernet (PoE models):**
  - 802.3af (PoE) 15.4 W per port and 802/.3at (PoE+) 25.5 W per port
  - Maximum PoE output: 124 W
  - PoE available on all ports simultaneously
  - Pre-standard PoE: supports pre-standard PoE devices
- **Management**
  - Managed via the cloud using the Meraki dashboard
  - Integrated with Meraki wireless, routing, and firewall management
  - No-touch remote deployment (no staging needed)
  - Detailed historical per-port and per-client usage statistics
  - DHCP and hostname fingerprinting
  - SNMP v2c
  - Seamless over-the-web firmware upgrades
- **Remote diagnostics**
  - Email and text alerts
  - Live remote packet capture
  - Aggregated event logs with instant search
- **Scalable stacking**
  - Virtually stack thousands of switch ports in a single logical stack for unified management, monitoring, and configuration
  - Unified configuration and monitoring of all switches
- **Power**
  - Power input: 100-240 VAC, 47-63 Hz
  - Power consumption: 13-159 W max
- **Environment**
  - Operating temperature: 32°F to 104°F (0°C to 40°C)
  - Humidity: 5 to 95% non-condensing
- **Warranty**

- o   Full lifetime hardware warranty with advanced replacement included
- **Physical dimensions (H × W × D)**
    - o   1.8" x 9.1" x 8.7" (4.4 x 23 x 22 cm)
    - o   Weight: 3.0 lbs (1.3 kg)

PSD is also requesting pricing on Meraki MS350 48 port POE switch or equivalent as possible alternates and Meraki MV21 and MV72 security cameras/licenses (non-erate) as additions to the project.   All quantities listed in spreadsheet are to be used as guidance and have been determined as a baseline by PSD and could change.

Alternate Switch:
48 Port Switch
Cisco Meraki MS350 Layer 3 Cloud-Managed 48 Port Gigabit 370W PoE Switch with Enterprise License
P/N: MS350-48P-HW / LIC-MS350-48P-5YR

License for the Meraki MS350 must include cloud services, software upgrades & support for 5 years.

Security Cameras:
Meraki MV21 Cloud Managed Indoor Camera
P/N: MV21-HW / LIC-MV-5YR
Meraki MV71 Cloud Managed Outdoor Camera
P/N: MV71-HW / LIC-MC-5YR

Vendor must include in the installation costs all modules, transceivers, cables, connectors, etc. needed to make each device 100% operational.   Any costs not included in the vendor proposed budget that may be required for the successful completion of the installation of the devices are assumed to be provided by the vendor and at no cost to PSD.

Cisco Meraki MX400 Security Appliance with Enterprise Security License and Support or equivalent
Part Number: MX400-HW / LIC-MX400-ENT-5YR
Quantity = 1

- **Network and Security Services**
  - Stateful firewall, 1:1 NAT, DHCP, DMZ, static routing
  - Identity-based policies
  - Auto VPN™ self-configuring site-to-site VPN
  - Client VPN (IPsec)
  - User and device quarantine
  - VLAN support and DHCP services

- **Advanced Security Services**
  - Content filtering (Webroot BrightCloud CIPA-compliant URL database)
  - Web search filtering (including Google and Bing SafeSearch)
  - YouTube for Schools
  - Intrusion prevention (SourceFire Snort based)
  - Antivirus and antiphishing filtering (Kaspersky SafeStream II engine)
  - Requires Advanced Security License

- **WAN Performance Management**
  - Web caching
  - WAN link aggregation
  - Application level (Layer 7) traffic analysis and shaping
  - Automatic Layer 3 failover (including VPN connections)
  - WAN uplink selection based on traffic type

- **Monitoring and Management**
  - Web based management and configuration
  - Throughput, connectivity monitoring and alerts
  - Network asset discovery and user identification
  - Built-in network-wide reporting, monitoring and alerts
  - Centralized policy management
  - Real-time diagnostic and troubleshooting over the web
  - Automatic firmware upgrades and security patches
  - Searchable network-wide event logs

- **Interfaces**
  - 2 × GbE (WAN)
  - 8 × GbE
  - 8 × GbE (SFP)
  - 4 × 10 GbE (SFP+)
  - USB: 1 × USB 2.0 for 3G/4G failover (supported devices)

- **Performance**
  - Stateful firewall throughput: 1 Gbps
  - VPN throughput: 1 Gbps
  - Recommended for large campus / data centers (up to 2,000 users)

- **Power**
  - Dual 275W power supply

- **Warranty**
  - Lifetime hardware warranty with advanced replacement included

APC Smart-UPS RM SMT1500RM2u or equivalent
Quantity = 9

Network Cabling (Drops) – Hardware and Installation
Quantity = 210

All installation and material charges associated with the installation of network cabling to make access points 100% operational should be included.   All additional connectors, screws, labor, panduit, conduit, ties, hangers, jacks, cables, parts, modules, etc. needed to make the cables connecting the wireless access points to the designated switch and/or patch panel in order to make the access points 100% operational should be included in the installation cost and provided by the vendor.   Patch panels and patch cables should be included when/ if necessary.   Any costs not outlined in the vendor proposed budget that may be required for the successful completion of the installation of the devices are assumed to be provided by the vendor and at no cost to PSD.

- All work must be performed in accordance with ANSI/TIA/EIA -568-B standards.
- All cables should be green.
- All cable shall be CAT-6 POE plenum rated cable terminated to industry certified RJ-45s jack at each specified outlook location.
- Any area that does not have a drop ceiling will require a wall mount bracket or other mounting option if required. Suitable wiring raceways, panduit, conduit and moldings to achieve a finished installation appearance shall be used.
- Cabling must be neatly run.   Cables may not lie directly on ceiling tiles or on overhead lights.   They must be suspended using J hooks where necessary.   O-rings and cable tie wraps are not acceptable.
- All drops needed for this project shall be new.   Drops may exist in a school close to a new AP location, but that connection shall not be re-used unless approved by PSD in writing.
- All cable connections must be identifiable at both ends.
- All cables must be tested and certified. Electronic copy of testing results and certification shall be provided.

SERVICE PROVIDER COMPANY NAME:

SERVICE PROVIDER COMPANY REPRESENTATIVE NAME:

School Name	Description of Item Requested - Item Specified by the Vendor Should Be Equivalent and Compatible to the Item Described Below	Mfg Part Number	Qty	Unit Cost $	Extended Cost $	Installation Cost $	Total Cost $	Erate Eligible %	Erate Ineligible %
Nicholson Elementary	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	25		$ -	$ -	$ -		
	Meraki MR Enterprise License 5YR	LIC-ENT-5YR	25		$ -	$ -	$ -		
	Meraki MS350-24X L3 Stck Cld-Mngd 24xGigE mGig UPOE Switch	MS350-24X-HW	2		$ -	$ -	$ -		
	Meraki MS350-24X - Enterprise License - 5 years	LIC-MS350-24X-5YR	2		$ -	$ -	$ -		
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	1		$ -	$ -	$ -		
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	1		$ -	$ -	$ -		
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	1		$ -	$ -	$ -		
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	1		$ -	$ -	$ -		
	10GBASE-CU SFP+ Cable 1M	MA-CBL-TA-1M	3		$ -	$ -	$ -		
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1		$ -	$ -	$ -		
	CAT6 Network Cable Drop		25		$ -	$ -	$ -		
Roseland Park Elementary	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	25		$ -	$ -	$ -		
	Meraki MR Enterprise License	LIC-ENT-5YR	25		$ -	$ -	$ -		
	Meraki MS350-24X L3 Stck Cld-Mngd 24xGigE mGig UPOE Switch	MS350-24X-HW	2		$ -	$ -	$ -		
	Meraki MS350-24X - Enterprise License - 5 years	LIC-MS350-24X-5YR	2		$ -	$ -	$ -		
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	1		$ -	$ -	$ -		
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	1		$ -	$ -	$ -		
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	1		$ -	$ -	$ -		
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	1		$ -	$ -	$ -		
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	3		$ -	$ -	$ -		
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	2		$ -	$ -	$ -		
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1		$ -	$ -	$ -		
	CAT6 Network Cable Drop		25		$ -	$ -	$ -		
Southside Elementary	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	23		$ -	$ -	$ -		
	Meraki MR Enterprise License	LIC-ENT-5YR	23		$ -	$ -	$ -		
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	2		$ -	$ -	$ -		
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	2		$ -	$ -	$ -		
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	1		$ -	$ -	$ -		
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	1		$ -	$ -	$ -		
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	2		$ -	$ -	$ -		
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	2		$ -	$ -	$ -		
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1		$ -	$ -	$ -		
	CAT6 Network Cable Drop		23		$ -	$ -	$ -		
Southside Lower Elementary	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	19		$ -	$ -	$ -		
	Meraki MR Enterprise License	LIC-ENT-5YR	19		$ -	$ -	$ -		
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	2		$ -	$ -	$ -		
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	2		$ -	$ -	$ -		
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	1		$ -	$ -	$ -		
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	1		$ -	$ -	$ -		
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	2		$ -	$ -	$ -		
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	4		$ -	$ -	$ -		
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1		$ -	$ -	$ -		
	CAT6 Network Cable Drop		19		$ -	$ -	$ -		
Westside Elementary	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	22		$ -	$ -	$ -		
	Meraki MR Enterprise License	LIC-ENT-5YR	22		$ -	$ -	$ -		
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	2		$ -	$ -	$ -		
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	2		$ -	$ -	$ -		
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	1		$ -	$ -	$ -		
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	1		$ -	$ -	$ -		
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	2		$ -	$ -	$ -		
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	2		$ -	$ -	$ -		
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1		$ -	$ -	$ -		
	CAT6 Network Cable Drop		22		$ -	$ -	$ -		

Location	Description	Model	Qty			
Picayune Junior High School	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	32	$ -	$ -	$ -
	Meraki MR Enterprise License	LIC-ENT-5YR	32	$ -	$ -	$ -
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	2	$ -	$ -	$ -
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	2	$ -	$ -	$ -
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	5	$ -	$ -	$ -
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	5	$ -	$ -	$ -
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	4	$ -	$ -	$ -
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	8	$ -	$ -	$ -
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1	$ -	$ -	$ -
	CAT6 Network Cable Drop		32	$ -	$ -	$ -
Picayune High School	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	44	$ -	$ -	$ -
	Meraki MR Enterprise License	LIC-ENT-5YR	44	$ -	$ -	$ -
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	6	$ -	$ -	$ -
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	6	$ -	$ -	$ -
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	2	$ -	$ -	$ -
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	2	$ -	$ -	$ -
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	8	$ -	$ -	$ -
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	12	$ -	$ -	$ -
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1	$ -	$ -	$ -
	CAT6 Network Cable Drop		44	$ -	$ -	$ -
Picayune Alternative Ed Center	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	10	$ -	$ -	$ -
	Meraki MR Enterprise License	LIC-ENT-5YR	10	$ -	$ -	$ -
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	1	$ -	$ -	$ -
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	1	$ -	$ -	$ -
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	3	$ -	$ -	$ -
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	3	$ -	$ -	$ -
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	1	$ -	$ -	$ -
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1	$ -	$ -	$ -
	CAT6 Network Cable Drop		10	$ -	$ -	$ -
Picayune Career and Technology Center	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	10	$ -	$ -	$ -
	Meraki MR Enterprise License	LIC-ENT-5YR	10	$ -	$ -	$ -
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	1	$ -	$ -	$ -
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	1	$ -	$ -	$ -
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	2	$ -	$ -	$ -
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	1	$ -	$ -	$ -
	CAT6 Network Cable Drop		10	$ -	$ -	$ -
Additional Pricing Requested	Meraki MX400 Cloud Managed Security Appliance (Shared Cost)	MX400-HW	1	$ -	$ -	$ -
	Meraki MX400 Enterprise License 5YR (Shared Cost)	LIC-MX400-ENT-5YR	1	$ -	$ -	$ -
	Training/Knowledge Transfer to PSD IT Staff (Shared Cost)		1	$ -	$ -	$ -
	Meraki MS350 Cloud Managed 48 Port GigE 740W PoE Switch	MS350-48FP-HW	1	$ -	$ -	$ -
	Meraki MS350-48FP - Enterprise License - 5 years	LIC-MS350-48FP-5YR	1	$ -	$ -	$ -
	Meraki MV21 Cloud Managed Indoor Camera (Not Erate Eligible)	MV21-HW	1	$ -	$ -	$ -
	Meraki MV71 Cloud Managed Outdoor Camera (Not Erate Eligible)	MV71-HW	1	$ -	$ -	$ -
	Meraki MV Enterprise License (Not Erate Eligible)	LIC-MV-5YR	1	$ -	$ -	$ -
	Total			$ -	$ -	$ -

	Description	Model	Qty
Full Project Numbers	Cisco Meraki MR42 Cloud Managed Access Point	MR42-HW	210
Reference Only	Meraki MR Enterprise License	LIC-ENT-5YR	210
	Meraki MS350-24X L3 Stck Cld-Mngd 24xGigE mGig UPOE Switch	MS350-24X-HW	4
	Meraki MS350-24X - Enterprise License - 5 years	LIC-MS350-24X-5YR	4
	Meraki MS225-24P L2 Stck Cld-Mngd 24x GigE 370W PoE Switch	MS225-24P-HW	18
	Meraki MS225-24P Enterprise License 5YR	LIC-MS225-24P-5YR	18
	Meraki MS220 Cloud Managed 8 PoE Switch	MS220-8P-HW	15
	Meraki MS220-8P Enterprise License 5YR	LIC-MS220-8P-5YR	15
	Meraki MX400 Cloud Managed Security Appliance (Shared Cost)	MX400-HW	1
	Meraki MX400 Enterprise License 5YR (Shared Cost)	LIC-MX400-ENT-5YR	1
	10GBASE-CU SFP+ Cable 1 Meter	MA-CBL-TA-1M	25
	10GBASE-LRM SFP Module	MA-SFP-10GB-LRM	32
	APC Smart-UPS 2U Rack Mount 1000W/1440VA LCD UPS	SMT1500RM2U	9
	CAT6 Network Cable Drop		210
	Training/Knowledge Transfer to PSD IT Staff		