

Grosse Pointe Public School System

Wired and Wireless Network

Request for Proposal (RFP)

December 2019

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GENERAL TERMS AND CONDITIONS

1 GENERAL REQUIREMENTS

1.1 INTENT

It is the intent of Grosse Pointe Public School System (herein after referred to as the “District”) to solicit proposals from qualified Vendors for a wired and wireless network solution at all District buildings. This solution will consist of the following components:

- a. Wired network equipment
- b. Wireless access point equipment
- c. Wireless controller/management equipment
- d. Integration services
- e. Warranty services

It is desired that the Vendors propose on all of the services being requested in this request for proposals (RFP). Proposers may partner with another provider to supply a complete and turnkey solution. If your response contains proposed services or equipment from multiple providers, all responding parties must be clearly identified and a synopsis of the partner relationship as well as the party that will serve as the prime vendor/contact for the District must be detailed. The District reserves the right to proceed with the provider deemed most suitable.

1.2 PROJECT DESCRIPTION

The District is seeking to replace their entire existing wired and wireless networking infrastructure with updated components, including core switches, aggregation switches, wireless access points, and management/controller equipment, throughout all buildings.

This RFP outlines the performance, operational, and administrative requirements the District is seeking for the wired and wireless network solution. Detailed specifications for this project are included in **Section 2** of the RFP.

1.3 SCHEDULE OF EVENTS

EVENT	DATE
RFP issued	December 20, 2019
Vendors’ conference (non-mandatory)	January 2, 2020, 3 p.m. ET – Parcells Middle School
Deadline for submittals of questions related to this RFP	January 3, 2020, 12 p.m. ET
Deadline for proposals and public proposal opening	February 6, 2020, 10 a.m. ET – 389 St. Clair Ave, Grosse Pointe, MI 48230
Anticipated award date	March 2020
Implementation schedule	Summer 2020

1.4 PROPOSAL SUBMISSION

Late proposals will not be accepted. Proposals shall be submitted as follows by the deadline indicated in **Section 1.3, Schedule of Events**:

- (1) Printed signed original
- (1) Unbound printed copy
- (1) Printed bound copies
- (1) USB drive consisting of only **2 files**:
 - A. One **single scanned PDF** file of the submitted printed signed complete proposal, plus **Appendix A** in Excel format marked with company name to:

Client: Grosse Pointe Public School System
Attn: Chris Stanley
389 St. Clair
Grosse Pointe, MI 48230

All proposals must be in a sealed package and contain the wording “**Wired and Wireless Network RFP**” on the package. The wording “**ORIGINAL**” is to appear on the outside of the binder containing the original signed proposal. If a bid bond or cashier’s check is used, an **original copy** of the bid bond must be submitted in the binder marked Original. Proposals **may not** be delivered via facsimile or email.

All Proposals MUST include the Vendor Response Forms provided in Appendix A.

Proposals shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the Proposer or any employee of the Proposer and any member of the Board of Education or superintendent. The District shall not accept a proposal that does not include this sworn and notarized disclosure statement. The Non-Familial Form must accompany your bid proposal (see **Appendix A**).

In accordance with the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012, all Vendors must execute the “Iran Linked Business Affidavit” and include it in their proposals (see **Appendix A**). Said forms are included in the Vendor Response Forms. The District will not accept a proposal that does not include this sworn and notarized disclosure statement. The form must accompany your bid proposal (see **Appendix A**).

1.5 INTENT TO PROPOSE

Each vendor who intends to submit a proposal in response to this RFP should communicate its intent via email, to gina.mancinelli@plantemoran.com with the subject line “[Insert your vendor name] - Grosse Pointe Public School System Wired and Wireless Network RFP - Intent to Respond.” Please refer to **Section 1.7, RFP Clarifications and Addenda**, for the contact information to address specific questions related to this RFP.

The response shall include the name of the Vendor, the name of the contact person, and that person’s email address.

1.6 VENDORS' CONFERENCE

A Pre-Proposal Vendors' Conference will be held for this project. Refer to Section 1.3 for details of this conference.

1.7 RFP CLARIFICATIONS AND ADDENDA

Plante Moran intends to communicate with Proposers via email, including any RFP clarifications and addenda. Those Proposers who fail to properly provide an Intent to Respond are not precluded from bidding; however, they will be solely responsible for obtaining any such information in an alternative manner.

Requests for clarification shall be submitted in writing by email only to:

Shae Sultes, Plante & Moran, PLLC
shae.sultes@plantemoran.com

When making requests for clarification, please identify the relevant section number (e.g., Section 2.3.1).

1.8 PROPOSAL FORMAT

To facilitate the comparison of vendor proposals, it is required that each proposal be organized into the following sections:

1.8.1 Executive Summary

The executive summary should, at a minimum, include the following:

- a. Cover sheet including the vendor name and USF SPIN number
- b. Executive letter highlighting how the proposed solution achieves the objectives of the District:
This letter is to be signed by an officer of the organization submitting the proposal and include the organization's SPIN number
- c. Organizational overview: A brief overview of the organization
- d. Identify features of the wired and wireless network solution to identify:
 - i. How the solution aligns with the requested functional requirements
 - ii. How the solution aligns with the requested technical requirements
 - iii. Any functional or technical requirements that the proposed solution cannot achieve
 - iv. Any assumptions and/or District resources required to complete the solution

1.8.2 Vendor Response Forms

Vendor Response Forms are supplied in this RFP (**Appendix A**). In addition to requesting information on your company and proposed solution, and other required forms, you must clearly indicate whether you either comply or take exception to any of the sections in this RFP. All Vendors **MUST** submit the **Comply/Exception Form** from **Appendix A**. Where applicable, an explanation to the exception must be provided.

1.8.3 Diagram of Design

For each section or design presented, the Vendor shall submit a diagram of its design providing a pictorial representation of the proposed solution(s).

1.8.4 Project Plan

The Vendor will include in its response an overview of its project plan.

1.8.5 Project Team

Indicate the level of qualification of the staff that will be assigned to this project. Qualification will be based on certifications and years of experience with the materials proposed in similar configurations. Names of staff need not be provided; however, the response in this section will indicate the minimum level of experience that will be provided. If necessary, please include additional categories to address additional levels of staff or staff with different certifications and years of experience.

1.8.6 Product Information

The Vendor must include copies of the technical specifications/data sheets for each of the products being proposed.

1.8.7 Electronic Copy

An electronic format of the forms in **Appendix A** in a Microsoft Excel format **MUST** be included with your response. A PDF version of all other materials must also be included.

1.8.8 Equipment Listing (BOM)

A bill of material must be included with the proposal identifying equipment models and quantities.

1.8.9 Additional Information

Additional information may be provided at the Vendor's discretion.

1.9 BID BONDS

Every proposal shall be accompanied by either a cashier's check on a solvent bank or by a bond executed by a surety company authorized to do business in the state of Michigan. A 5% bid bond or cashier's check shall be required. Such check or bond shall name the District as recipient. The amount of such bid bond or cashier's check shall be forfeited as liquidated damages, costs, and expenses incurred by the District if the Vendor, after given an award as successful vendor, shall fail within thirty (30) days after the notice of such award to enter into appropriate contract with the District.

1.10 PERFORMANCE AND PAYMENT BONDS

The District **MAY** require the selected Vendor(s) to provide a performance bond upon award of the contract. The associated cost of the performance bond is to be shown as a separate line item — do NOT include this cost in your base bid. This bond shall be equal in amount to the total price to the District of purchased hardware, software, cabling, and services. The Surety of the bond shall remain in effect for one year after all

acceptance of the entire project has been executed by the District. In the event that the Vendor(s) fails to perform its obligations under any contract between the Vendor(s) and the District, the bond shall be paid to the District. The Vendor(s) further agrees to save and hold harmless the District and agents from all liability and damages of every description in connection with any subsequent contracts. Payment bonds shall be required under the following conditions: project award exceeds \$50,000 **and** project involves construction, alteration, or repair to the buildings.

1.11 INSPECTION OF WORKSITE

If necessary, proposers can request access for site visits from Grosse Pointe Public School System by contacting the individual identified in **Section 1.7, *RFP Clarifications and Addenda***. On-site access and review will be made available at the pre-proposal vendors' conference.

1.12 MODIFICATION OF RFP

Vendors may not modify the RFP text to affect the terms, conditions, or specifications found in this document; this is forbidden and will subject the proposal to rejection. In the event any text is modified, the original text as issued will apply. This clause does not apply to the vendor response areas of the RFP where it is expected that Vendors will enter their text.

1.13 CONFIDENTIAL INFORMATION

As a public entity, the District is subject to the Michigan Freedom of Information Act (FOIA). Information contained in proposals may be subject to FOIA requests.

1.14 RIGHT TO REQUEST ADDITIONAL INFORMATION

The District reserves the right to request any additional information that might be deemed necessary after the completion of this document.

1.15 RIGHT OF REFUSAL

The District reserves the right to reject any or all proposals in their entirety, evaluate suggestions or exceptions, waive irregularities, or select certain equipment from various vendor proposals based on the best interests of the District. The District reserves the right to reject any or all proposals for a specific section. The District reserves the right to award specific buildings to one or more Vendors.

1.16 PROPOSAL PREPARATION COSTS

The Vendor is responsible for any and all costs incurred by the Vendor or his/her subcontractors in responding to this RFP.

1.17 SYSTEM DESIGN COSTS

The successful Vendor shall be responsible for all design, information gathering, and required programming to achieve a successful implementation. This cost must be included in the base bid.

1.18 PERMITS

The successful Vendor shall be responsible for complying with all local, state, and federal codes applicable to this installation. This includes the electrical permit required by the state of Michigan for low voltage installations. Include all costs associated with permitting in your base bid.

1.19 PRICING ELIGIBILITY PERIOD

All vendor proposals are required to be offered for a term not less than **120** calendar days in duration. A claim of mistake in computation of a proposal shall not void the proposals after they are opened and accepted.

1.20 ADDITIONAL CHARGES

No additional charges, other than those listed on the price breakdown sheets, shall be made. Prices quoted will include verification/coordination of order, all costs for shipping, delivery to all sites, unpacking, setup, installation, operation, testing, cleanup, and training.

1.21 TURNKEY SOLUTION

All prices quoted must include all the cables, connectors, etc., that will be necessary to make the system specified **fully operational** for the intent, function, and purposes stated herein.

1.22 FEDERAL OR STATE SALES, EXCISE, OR USE TAXES

Grosse Pointe Public School System is a tax-exempt entity for all purposes, except if the project makes enhancements and/or additions to real property.

1.23 PURCHASE QUANTITIES

The District reserves the right to adjust upward or downward by 25%, the quantities of items purchased without altering the unit purchase price upon award and throughout the contract period.

1.24 CONTRACT REQUIREMENTS

The District intends to use the agreement contained in **Appendix C** for this project. Please review this attached agreement and indicate whether the terms of the agreement are acceptable. Include all agreement exceptions in your proposal, if any.

The District considers this RFP legally binding and will require that this RFP and the resulting vendor proposal be included as addenda to any subsequent contracts between the Vendor(s) and the District. It should be understood by the Vendor(s) that this means that the District expects the Vendor(s) to satisfy all requirements and reports listed herein. Exceptions should be explicitly noted in the vendor proposals. **Lack of listing all exceptions will be considered acceptance of all of the specifications as presented in this RFP.**

1.25 SURVIVAL CLAUSE

All duties and responsibilities of any party that, either expressly or by their nature, extend into the future shall extend beyond and survive the end of the contract term or cancellation of the Agreement.

1.26 FORCE MAJEURE CLAUSE

See proposed Contract in **Appendix C**.

1.27 INCORPORATION BY REFERENCE

The Vendor shall supply equipment, wiring, technology, training, and other related services adequate to accomplish the requirements as set forth in the RFP and the Vendor response to the RFP. Parties agree that where there is a conflict between terms of the Agreement and the information presented in the referenced documents, the Agreement shall take precedence. The parties also agree that where there is not a conflict between the Agreement and the information presented in the referenced documents, all terms, conditions, and offers presented in the Vendor's proposal shall herein be referenced to the Agreement and shall be binding upon all parties to the Agreement.

1.28 RISK DURING EQUIPMENT STORAGE AND INSTALLATION

Delivery shall be made in accordance with the implementation schedule referenced as part of the Agreement. It will be possible to allow for minor variances from this implementation schedule as mutually agreed upon by both parties and confirmed by prior written notice. The equipment shall be installed and placed into good working order by representatives of the Vendor. During the time period where the equipment is in transit and until the equipment is fully installed in good working order, the Vendor and its insurer shall be responsible for the equipment and relieve the District of responsibility for all risk of loss or damage to the equipment. In addition, the Vendor shall hold the District and agents harmless from any risk of loss or damage arising out of occurrences during the installation of the equipment.

1.29 SHIPPING OF EQUIPMENT

All shipping and insurance costs to and from the site shall be included in the Vendor's proposal. All payments to shipping agents and for insurance fees shall be made directly by the Vendor. The District shall make no payments to any firm concerning the shipment, installation, and delivery of equipment that is not a part of the Agreement and for which exact payments are not described. The Vendor shall be responsible for all arrangements for the shipment and receipt of equipment to the District's prepared site. The Vendor shall provide all properly trained representatives to unpack all items of equipment and place this equipment in the proper locations. The Vendor shall also be responsible for removal of all debris and packing materials from the site resulting from the installation of the equipment.

1.30 NON-WAIVER OF AGREEMENT RIGHTS

It is the option of any party to the Agreement to grant extensions or provide flexibilities to the other party in meeting scheduled tasks or responsibilities defined in the Agreement. Under no circumstances, however, shall any parties to the Agreement forfeit or cancel any right presented in the Agreement by delaying or failing to exercise the right or by not immediately and promptly notifying the other party in the event of a

default. In the event that a party to the Agreement waives a right, this does not indicate a waiver of the ability of the party to, at a subsequent time, enforce the right. The payment of funds to the Vendor by the District should in no way be interpreted as acceptance of the system or the waiver of performance requirements.

1.31 GENERAL INDEMNIFICATION

See proposed Contract in **Appendix C**.

1.32 PATENTS, COPYRIGHTS, AND PROPRIETARY RIGHTS

See proposed Contract in **Appendix C**.

1.33 NONDISCRIMINATION BY VENDORS OR AGENTS OF VENDOR

See proposed Contract in **Appendix C**.

1.34 SUBCONTRACTORS

See proposed Contract in **Appendix C**.

1.35 EFFECT OF REGULATION

See proposed Contract in **Appendix C**.

1.36 PROJECT MANAGEMENT STAFF DESIGNATION

The Vendor understands that the successful installation, testing, and operation of the system that is the subject of this document shall be accomplished by a cooperative effort. To most effectively manage this process, the Vendor shall designate a single representative, who shall have the authority to act on behalf of the Vendor on all matters pertaining to the Agreement, to act as project manager.

In the event that an employee of the Vendor is, in the opinion of the District, uncooperative, inept, incompetent, or otherwise unacceptable, the Vendor agrees to remove such person from responsibility in the project. In the event of such a removal, the Vendor shall, within fifteen (15) days, fill this representative vacancy as described above. Regardless of whom the Vendor has designated as the representative, the Vendor organization remains the ultimate responsible party for performing the tasks and responsibilities presented in the Agreement.

1.37 ASSIGNMENTS

District and the Vendor each binds themselves, their partners, successors, and other legal representatives to all covenants, agreements, and obligations contained in the Agreement.

1.38 VENDOR AS INDEPENDENT VENDOR

It is expressly agreed that the Vendor is not an agent of District but an independent Vendor. The Vendor shall not pledge or attempt to pledge the credit of District or in any other way attempt to bind the District.

1.39 INSURANCE

Workers' Compensation Coverage: The Vendor shall procure and maintain during the life of the Agreement, Workers' Compensation Insurance, including Employer's Liability Coverage, in accordance with all applicable statutes of the state of Michigan.

Commercial General Liability Insurance: The Vendor, at the Vendor's sole cost and expense, shall procure and maintain during the life of the Agreement, Commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than one million dollars (\$1,000,000) per occurrence and/or aggregate combined single limit, Personal Injury, Bodily Injury, and Property Damage. Coverage shall include the following features: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Vendors Coverage; (D) Broad Form General Liability Extensions or equivalent; (E) Deletion of all Explosion, Collapse, and Underground (XCU) Exclusions, if applicable; (F) Per contract aggregate.

Motor Vehicle Liability: The Vendor, at the Vendor's sole cost and expense, shall procure and maintain during the life of the Agreement, Motor Vehicle Liability Insurance, including applicable no-fault coverages, with limits of liability of not less than \$1,000,000 per occurrence combined single-limit Bodily Injury and Property Damage. Coverage shall include all owned vehicles and all hired vehicles.

Additional Insured: The following shall be named Additional Insureds: Grosse Pointe Public School System, including all elected and appointed officials; all employees and volunteers; and all boards, commissions, and/or authorities and their board members, employees, and volunteers.

This coverage shall be primary to the Additional Insureds and not contributing with any other insurance or similar protection available to the Additional Insured, whether other available coverage is primary, contributing, or excess.

Notice of Cancellation or Change: Workers' Compensation Insurance, Commercial General Liability Insurance, and Motor Vehicle Liability Insurance, as described above, shall include an endorsement stating the following: "Sixty (60) days Advance Written Notice of Cancellation or Non-Renewal shall be sent to: Grosse Pointe Public School System., 389 St. Clair, Grosse Pointe, MI 48230, (313) 432-3000.

Proof of Insurance Coverage: The Vendor shall provide the District at the time the contracts are returned for execution, Certificates of Insurance, and/or policies, acceptable to the District, as listed below:

- Two (2) copies of Certificate of Insurance for Worker's Compensation Insurance;
- Two (2) copies of Certificate of Insurance for Commercial General Liability Insurance;
- Two (2) copies of Certificate of Insurance for Vehicle Liability Insurance;
- Original Policy, or binder pending issuance of policy, for Owners Vendors Protective Liability Insurance;
- If so requested, certified copies of all policies shall be furnished.

Continuation of Coverage: If any of the above coverage expires during the term of the Agreement, the Vendor shall deliver renewal certificates and/or policies to Grosse Pointe Public School System at least ten (10) days prior to the expiration date.

Failure to comply: Failure to comply with the insurance requirements contained in the Agreement shall constitute a material violation and breach of the Agreement and may result in termination of the Agreement.

1.40 WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE

The District has presented detailed technical specifications of the particular purpose for which the network and technology is intended. The District has provided detailed descriptions and criteria of how the system can be defined to accomplish particular purpose. The District has also defined the exact procedures and techniques to be employed in testing whether the system has achieved the defined performance of this particular purpose. Given this advanced preparation concerning, and documentation about, the District's particular purpose, the Vendor at the time the Agreement is in force has reason and opportunity to know (1) the particular purpose for which products are required, and (2) that the District is relying on the Vendor's experience and knowledge of these products to provide those that are most suitable and appropriate. Therefore, the Vendor warrants that the system is fit for the purposes for which it is intended as described in this document.

1.41 WARRANTY

See **Section 2.7** for warranty requirements.

1.42 FINAL ACCEPTANCE OF THE SYSTEM

The system proposed shall be defined to be finally accepted by the District after all components of this RFP and all approved Change Orders have been completely installed plus the items identified in **Section 2**. The District or District's Representative shall be the sole judge of whether all conditions for final acceptance criteria have been met.

1.43 STANDARD FORMS AND CONTRACTS

Any forms and contracts the Vendor(s) proposes to include as part of any agreement resulting from this proposal between the Vendor(s) and the District must be submitted as part of the proposal. Any forms and contracts not submitted as part of the proposal and subsequently presented for inclusion may be rejected. This requirement includes, but is not limited to, the following types of forms: subvendor, franchise, warranty agreements, maintenance contracts, and support agreements.

1.44 NON-COLLUSION COVENANT

The Vendor hereby represents and agrees that it has in no way entered into any contingent fee arrangement with any firm or person concerning the obtaining of the Agreement. The Vendor certifies that its proposal is made without any previous understanding, agreement, or connection with any person, firm, or corporation making a proposal for the same services and is, in all respects, fair, without outside control, collusion, fraud, or otherwise illegal action.

1.45 ADVERTISEMENT

The laws of the state of Michigan, the District purchasing policies, and the legal advertisement for Vendors and purchases are made a part of any agreement entered into in the same respect as if specifically set forth in that agreement.

1.46 SELECTION CRITERION

The District intends to enter into a long-term relationship with a well-established vendor whose products, features, design philosophy, and support policies come closest to meeting the District's needs. The selected Vendor must be a well-established, financially stable firm committed to technology in K-12; will have a commitment to attracting and retaining an excellent staff of technical and product support personnel; and will have a proven track record of support from installation planning through implementation and ongoing use. There should also be evidence of responsiveness to clients' suggestions for improvements. Finally, there must be a good fit between vendor staff and the District's staff to assure a good working relationship.

The Vendors will be evaluated based on the following selection criteria:

1.46.1 Compliance to Specifications

- a. Functional/technical requirements
 - i. Compliance to mandatory specifications
 - ii. Ability to achieve nonmandatory requirements
 - iii. Vendor interview and solution demonstration as required
- b. Proposal requirements

1.46.2 Implementation Support

1.46.3 Ongoing Support

1.46.4 Experience

1.46.5 Cost

1.47 SPECIAL NOTES

Failure to include in the proposal all information outlined above may be cause for rejection of the proposal.

The District reserves the right to accept the Vendor's replacement of any component if it is considered equal or superior to the specifications. Such acceptance will be in writing.

1.48 PAYMENT TERMS

See proposed Contract in **Appendix C**.

1.49 CRIMINAL BACKGROUND SCREENING

The District is committed to assuring a safe environment for students, employees and District visitors. Accordingly, the District requires criminal background certification compliance from Vendors and

subvendors who perform work at any District facility. Each Vendor/subvendor shall certify that all legally required criminal history and criminal record checks, electronic finger print scans (Michigan and FBI), and/or any other background check requirements are conducted in accordance with applicable provisions within Sections 380.1230, 380.1230a-h, 380.1236a of the Michigan Revised School Code, and all other applicable federal and state laws concerning background checks. These results must be sent directly to the District. Additionally, the Vendor must certify that no owner, employee, agent, representative, Vendor and/or other personnel of the Vendor will be on any District premises if they are a registered criminal sexual offender under the Sex Offenders Registration Act, Public Act 295 of 1994, or have been convicted of "Listed Offense" as defined under Section 722 of the Sex Offenders Registration Act, MCL 28.722. The Vendor shall also require employees, if and as applicable, to comply with the reporting requirements of Section 1230d of the Revised School Code, and shall promptly forward any information so obtained to the Client.

1.50 UNIVERSAL SERVICE FUND (USF) CONDITIONS

This project will be submitted for E-Rate discounts through the Universal Service Fund (USF). Vendors shall meet all requirements, complete all forms as required of Vendors by the USF, and make all accommodations necessary for USF eligibility and funding. All services proposed as part of this specification will be contingent upon the District securing the USF discounts. All Vendors must be USF aware and clearly identify eligible vs. ineligible components of each service proposed as defined per documentation available at the official USF website.

1.50.1 Identification Number

The Vendor's USF Vendor Identification Number (SPIN) must be included in the proposal. Direct all questions regarding the USF requirements in this RFP to the Universal Service Administrative Company (USAC), Schools and Library Division (SLD) at (888) 203-8100.

1.50.2 FY2020 Funding Requests

The specified products and/or services are to be provided for FY2020 (July 1, 2020-June 30, 2021) and must qualify for universal service discounts under the FY2020 universal service support mechanism, E-Rate. The E-Rate Modernization Order permits applicants to seek support for Category 2-eligible nonrecurring services purchased on or after April 1, three months prior to the start of the funding year on July 1. No invoices to USAC/SLD will be DATED or PAID before July 1, 2020.

1.50.3 Universal Service Discounts

The vendor contract is conditional upon the District receiving universal service discounts under the FY2020 universal service support mechanism, E-Rate. The District reserves the unrestricted right to reduce the contract amount by reducing the amount of services and/or products in order to meet budget requirements in the event the level of the universal service discounts is reduced. Any such reductions to the contract amount will be taken prior to the start of the specific work being reduced or eliminated on a given building and/or project.

1.50.4 Universal Service Discount Implementation

The District reserves the unrestricted right to specify the filing option for the universal service discounts for each product and/or service offered within a proposal: Billed Entity Applicant Reimbursement (BEAR) or Service Provider Invoice (SPI).

1.50.5 Eligible Products and Services

The USF-eligible products and/or services identified on the USAC FY2020 Eligible Services List, which is incorporated herein by reference, must be identified separately from any and all *ineligible* products and/or services in the proposal.

1.50.6 Project Funding Requirements

This project is entirely conditional upon receiving written notification in the form of a Funding Commitment Decision Letter from the USAC/SLD that the District has been approved for E-Rate Funding. If the District receives less than the full E-Rate Funding for which it applies, the District has the unrestricted right to reduce the number of units and services in the accepted proposal. In the event that E-Rate Funding is not available for the accepted proposal, the District, in its discretion, may cancel and/or modify the Scope of Work and subsequent purchases requested in this RFP.

1.50.7 Lowest Corresponding Price

Lowest Corresponding Price (LCP) is defined as the lowest price that a vendor charges to nonresidential customers who are similarly situated to a particular E-Rate applicant for similar services. Vendors cannot charge E-Rate applicants a price above the LCP and must actually charge the rate that is the LCP, not just offer the LCP in the proposal. In addition, promotional rates offered by a vendor for a period of more than 90 days must be included among the comparable rates upon which the LCP is determined.

2 WIRED AND WIRELESS NETWORK SPECIFICATIONS

2.1 PROJECT SCOPE/OVERVIEW

The purpose of this RFP is to acquire the services of an experienced and qualified Vendor to design, procure, install, and warranty a wired and wireless network solution for the District's network, including testing and documenting the equipment provided.

Detailed specifications/requirements for the solution are provided later in this section.

It is District's intent that this RFP promote competition. Accordingly, the use of any patent, proprietary name, or manufacturer's name is for demonstrative purposes only and is not intended to curtail competition. Whenever any supplies, material, devices, or products requested in this RFP are specified by patent, proprietary name, or the name of the manufacturer, unless stated differently, such specification shall be considered as if followed by the words "or comparable equivalent," whether or not such words appear. The District, in its sole and absolute discretion, shall have the right to determine if the proposed equivalent devices/brands submitted by the Vendor meet the specifications contained in this RFP and possess equivalent and/or better qualities. It is the Vendor's responsibility to notify the District in writing if any specifications or suggested comparable equivalent devices/brands require clarification by the District on or before the deadline for written requests for clarifications.

The total base bid must include all associated costs, including, but not limited to, shipping, handling, insurance, installation, equipment, cabling, and services costs.

2.2 CURRENT ENVIRONMENT

The District maintains a Cisco-based wired and wireless network solution. The existing wired network switching environment consists of Catalyst 4500X, 4057R, 3750, 3750G, 3560, and 2960X switches. A handful of Cisco routers are also in use at select buildings. Each building has a WAN connectivity, provided by Comcast (Metro Ethernet), that is handed off via fiber-optic cabling to the network aggregation point at each building. The network core, located at Parcels Middle School, consists of a Cisco Nexus 9504 with five (5) Nexus 2248TP-1GE fabric extenders. The wireless network consists of a mix of Cisco 1142N, 1602I, 1852I, 1232AG, and 1130AG access points, which total 750. Many of these access points function without a controller. A few of the wireless access points are registered to a single Cisco 5520 wireless controller located at Parcels Middle School. The District current uses SSIDs for both protected and guest access. An inventory of the existing environment is provided in **Appendix B**.

The District is in the process of implementing a fiber-optic ring that will interconnect each District building. In the initial deployment, the ring will be used in a star topology to connect each District building to Parcels Middle School. While this will not directly impact the initial configuration, the equipment implemented as part of this RFP must be capable of supporting a minimum of two 10Gbps fiber optic connections to the WAN.

Some locations have existing Cisco routers that integrate to the District's phone system. These are not in scope for replacement and will remain as-is.

2.2.1 Power over Ethernet (PoE) Considerations

Power over Ethernet (PoE/PoE+) network switching equipment must be provided by the Vendor to power wireless access points (provided by this RFP), video surveillance cameras, and VoIP handsets.

2.2.2 Current Cabling Infrastructure

The current structured cabling infrastructure for existing wireless access points is Category 5e. In all cases, access points will require new CAT 6 cable runs.

2.3 GENERAL EXPECTATIONS

2.3.1 Acceptable Manufacturers

The District is seeking products from reputable wired and wireless network manufacturers (e.g., Aerohive, Arista, Aruba, Cisco, Extreme Networks, Meraki, Ruckus).

The acceptance of a solution will be at the discretion of the District. There is a strong preference for solutions that have been proven to be both functional and cost effective in a K-12 education environment.

2.3.2 New Materials

All equipment quoted by the Vendor shall be new. The solution requests that the Vendors propose a completely new solution that balances cost, performance, and technology. Solutions using equipment that has either reached or an announcement has been made for end-of-life, end-of-support, or end-of-sales will not be entertained.

All products proposed in the response must be in “customer shipping or production” status at the time of the proposal. The Vendor may not use products based on future releases of hardware and/or software in their proposal. If the Vendor is unable to provide the proposed product(s) or feature(s) by the proposed delivery date, the Vendor will provide a resolution of equal or greater value to the District, at no additional charge to the District, including services required to implement the solution.

2.3.3 Technical Staff/Trained Personnel

The Vendor shall indicate the level of qualification of the staff that will be assigned to this project. Qualification will be based on certifications, training, and years of experience with the materials proposed in similar configurations. Names of staff need not be provided; however, the response in this section will indicate the minimum level of experience that will be provided. If necessary, please include additional categories to address additional levels of staff or staff with different certifications and years of experience.

2.3.4 Specifications Sheets

The Vendor must provide specification sheets (soft copies) for all products proposed. An electronic copy of these specification sheets will suffice.

2.3.5 Mandatory and Nonmandatory Requirements

Unless specifically stated otherwise, using terms such as “optional,” “desired,” or “nonmandatory,” the requirements in this section are to be considered mandatory requirements.

2.3.6 Asset Tags

The vendor will be expected to asset tag all network equipment. The asset tagged items will include the assigned number in the final documentation that is delivered to the District. The District will provide asset tags for the vendor to apply.

2.3.7 Additional Components for Completeness of Solution

If the proposed solution requires any additional components from the District to meet the functional requirements of the solution not included in the proposal, the Vendor must:

- a. Identify optimal requirements and their purpose
- b. Identify the estimated cost to the District for these components
- c. Specify exceptions to any of the requirements using the form in **Appendix A:**

Comply/Exception Form

Failure to disclose additional components and estimated costs that are required to deliver the described functionality but not included as a part of your proposal will be grounds for disqualification of your proposal, or the Vendor will be responsible for providing the missing components at no additional cost to the District.

2.3.8 Options Pricing

Vendors are encouraged to provide pricing for alternate equipment to allow the District flexibility in identifying the solution that addresses their current and future needs. Pricing for options must be specified in **Appendix A**.

2.3.9 Building Walkthrough/Floor Plan Review

A building walkthrough of a sampling of buildings will be provided at the pre-proposal vendors' conference. Unscaled building floor plans are provided in **Appendix B**.

2.4 WIRED NETWORK TECHNICAL SPECIFICATIONS

2.4.1 Scope of Work

It is the intent of the District to replace their existing wired network with a new solution to replace aging hardware components. The wired network will have the ability to be centrally managed and provide a single pane of glass into the monitoring and management of the wired network infrastructure. The wired network infrastructure must be capable of providing both a scalable solution as well as an easy-to-maintain environment. This includes the procurement, installation, configuration, and testing of the new devices to ensure proper operation.

2.4.2 Wired Network Architecture

The wired network architecture should be design in a way that avoids creating a bottleneck for the network and must be capable of handling full duplex traffic without packet losses/drops across all of its LAN and WAN interfaces.

The core network will ideally be a collapsed core where Core and Distribution layers are consolidated. The core should consist of adequate 10 Gbps and 1 Gbps connectivity to connect to the WAN, ISP, and server/storage equipment. The aggregation at each District building will be constructed with 10 Gbps-capable fiber-optic interfaces to connect to the WAN and each network closet within a building. Access switching will consist of 10/100/1000 TX PoE/PoE+ capable switchports for end-user/device access with multiple 10 Gbps fiber-optic uplinks.

For the network, it is required that the switches provide a non-blocking architecture for the configured solution and ease of expansion for future network growth. Throughput requirements should be determined using the following logic: If a core switch is configured with eight (8) 10 GbE WAN ports, and twenty-four (24) 10/100/1000Tx for servers, forty-eight (48) 10/100/1000Tx ports, with a growth requirement of 20% on the WAN and LAN aggregation ports, the desired configured backplane capacity or the aggregate switching capacity would be a minimum of: $([8 \times 10 \text{ Gbps}] + [24 \times 1 \text{ Gbps}] + [48 \times 1 \text{ Gbps}] + [20\% \text{ WAN/LAN growth, or } 2 \times 10 \text{ Gbps}]) = 172 \text{ Gbps}$. If the configuration is a stack-based solution, this should be the minimum capacity between each of the switches in the stack.

The aggregate/backplane capacity shall be measured in a full-duplex nonblocking throughput environment. If the switching capacity of the proposed switching equipment is not measured as “full-duplex nonblocking,” please state how the switching capacity of the box has been determined. If the switching fabric of the proposed switch is beyond the required throughputs, the Vendor shall state the maximum attainable switching fabric capacity and the increments that it can be increased. If the switching fabric capacity can be added in increments, the Vendor shall provide the cost to increase the bandwidth of the network switch.

Vendors may propose either a stack-based or a chassis-based solution for all switching components. If a stack-based solution is proposed, the stack-based solution must be connected with high backplane connectivity cables to minimize/eliminate any bottlenecks.

The nonblocking architecture must include the card/interface modules, backbone of the switch, connection between line cards (if applicable) and the backbone, any processing cards required to forward traffic, process L2 and L3 functions (including mainstream routing schemes such as multicasting, broadcasting, and unicasting), and process QoS operations. The performance requirements must be met regardless of the packet size. The proposed aggregation switches will be able to utilize the entire backplane switching capacity with the switching engines, modules, and software available at the time of the submission of the proposal. Futuristic claims of the aggregate/backbone switching capabilities of the core switch will not be accepted.

2.4.3 Switch Fabric Redundancy

The switching environment must be configured for fabric redundancy. If a switch is a part of the stacked configuration, the failure of a stack member should not make the complete stack inoperable. If the primary and secondary switches do not operate in an active-active mode, the manufacturer shall state the nature of the disruptions in the event of the failure of a primary switch, the time (latency) for the secondary switch to resume operations of the network, and the switch capacity with only one switch in operation.

The cost for the redundancy should be clearly identified to allow the District to balance redundancy/performance with the cost of the solution.

For the building aggregation switches at all other buildings, if a solution is capable of supporting redundancy by adding additional switches to the stack, the optional cost for adding this redundancy may be shown as an option in **Appendix A**.

2.4.4 Power Supply Redundancy

Core and aggregation switches should be configured for N+1 power supply redundancy. In the event of a malfunction of one of the power supplies, the remaining power supply(ies) shall assume responsibility for the entire switch/stack.

For the access switches at all other buildings, if a solution is capable of supporting power supply redundancy by adding components to the chassis switch or stack, the optional cost for adding this redundancy may be shown as an option in **Appendix A**.

2.4.5 Scalability

If the solution for the District is based on a stackable solution, the Vendor will state the total number of switches that can be stacked together.

If the solution is a chassis-based solution, the Vendor is required to state the total number of slots available on the switches and the number of slots that will be available for I/O or line expansion modules. The Vendor is required to state the total number of slots available (for customer expansion) after the network core switch has been configured for the proposed solution.

For every ninety-six (96) 10/100/1000 requested Ethernet ports in a network closet switch stack, that switch/stack should be connected to that building's aggregation switch using a dedicated Ten-Gigabit Ethernet uplink from that stack.

The port counts shown in **Appendix B** are the current requirements at each building. The proposed solution must be capable of expanding to support future growth through stacking or module expansion. The number of ports shown in **Appendix B** take into consideration the growth requirements.

2.4.6 Physical Port Compatibility

The Physical Medium Dependent (PMD) sublayer for all Gigabit Ethernet interfaces proposed shall be strictly compliant with the IEEE 802.3z standard. All multimode Gigabit Ethernet (1000Base-

Sx/10G-SR) ports shall operate at 850nm laser across the multimode fiber. All single-mode 1 GbE and 10 GbE interfaces shall operate at 1300nm laser across the single-mode fiber. The Vendor shall assure interoperability with other manufacturers' equipment that is also based on the IEEE standards for Gigabit Ethernet.

All the 10/100/1000 Tx Ethernet ports on network core switches must be auto-sensing, auto-negotiating, and allow manual duplexing option for legacy purposes. The auto-sensing mechanism shall be capable of determining the speed (10/100/1000Mbps, as applicable) to the connected device (user device or another switch) and the auto-negotiating feature shall determine half-duplex or full-duplex capability of the connected device. The auto-sensing and auto-negotiation feature of each interface must be controllable independently.

2.4.7 Interface Requirements

The minimum port count and types required for the switches are listed in **Appendix B**. The proposed solution will, at a minimum, provide the requested interfaces. On the fiber uplink/downlink modules, the use of a flexible Gigabit Ethernet Interface Converter (GBIC, mini GBIC, SFP, SFP+, etc.) as opposed to fixed Gigabit Ethernet ports is required on all switches.

For the LAN uplinks/downlinks (where applicable), where multimode fibers are available, the proposer is to assume that 10 GbE short-reach modules over 50 micron multimode fiber LAN would suffice.

Prior to the placement of the order for the equipment, the awarded Vendor will be required to tour all the buildings (closet locations) to accurately document the connectivity requirements. The Vendor will make the necessary changes to the final bill of material (BOM) before an equipment order is placed. If the changes affect the cost of the project, they will be communicated using the standard change order process. The Vendor is responsible for including all necessary fiber and copper patch cables for equipment interconnectivity.

2.4.8 Third-party Optics

Optional pricing is requested for third-part fiber-optic modules that are compatible with the proposed solution. Pricing for such modules should only be included if usage of the third-party optics does not void the warranty for the network equipment.

2.4.9 Technical Specifications

The wired network equipment (switches) must meet (or exceed) the following specifications for operation:

Supported network standards	802.1q (tagging), 802.3ad, 802.1d, 802.1w, PIM, IGMP v2 & v3, 802.1p, 802.3x, DHCP relay, OSPF, Jumbo frames, 802.3at
Security mechanisms	ACLs (IPv4 & v6), 802.1x, Gratuitous ARP protection, DHCP Option 82, Trusted DHCP Server, Source IP Lockdown, per port broadcast storm control, port auto-sensing

Management and monitoring	NTP, SSH, HTTP/HTTPS, SNMP, syslog, TFTP
Number of VLANs supported	4096
Quality of service classification	ACLs, DiffServ, VLAN, Port, up to eight (8) queues per port
LED indicators	Per port LEDs, system status LEDs
Power	Redundant PSU (optional for access switches)
Physical connectivity (ports)	1 x RJ45 Console 1 x 10/100/1000 out-of-band management
Mounting	Rack-mountable on 2- or 4-post racks

2.5 WIRELESS NETWORK TECHNICAL SPECIFICATIONS

2.5.1 Scope of Work

It is the intent of the District to replace their existing wireless network with a new solution that includes one wireless access point per classroom to accommodate the rapid growth in student and teacher wireless devices that will occur over the next several years. The wireless network will have the ability to be centrally managed and provide a single pane of glass into the monitoring and management of the wireless network infrastructure. The wireless network infrastructure must be capable of providing both adequate security for protected access and ease of use for guests of the District. This includes the procurement, installation, configuration, and testing of the new devices to ensure proper operation.

2.5.2 Wireless Network Architecture and Controller

The WLAN architecture will be able to support a wide variety of end-user devices, including, but not limited to, Microsoft Windows, MacOS, Linux, Android, Apple iOS, ChromeOS, and other popular mobile computing devices.

The solution must be capable of classifying, prioritizing, or restricting traffic by user, group of users, SSID, application, source/destination IP, protocol, and class of service. In addition, the solution must be capable of providing wireless intrusion prevention (WIPS) to protect the wireless network from malicious attacks.

The wireless controller should not be in path of end-user traffic and should only provide network authentication and access point management. If the controller becomes unreachable to the wireless access points, wireless network functionality should still be maintained based on the last known configuration provided by the wireless controller. If a physical wireless controller architecture is proposed, it should provide options for dual 1 Gbps connectivity to the core. Regardless of the deployment model, a single pane of glass for management should be provided for the wireless solution. The management solution must be web browser-based and compatible with all major web browser platforms (e.g., Chrome OS, Safari, Microsoft Edge).

The solution will provide the ability to enforce policy based on a user's Active Directory identity. Student identity is managed by G Suite for Chromebook devices. The District must be able to log wireless traffic per user on the wireless network.

It is to be noted that the WLAN solution must accommodate growth requirements and be expandable to provide, at a minimum, 25% growth in usage without having to add additional hardware or licensing.

As part of the base bid, the Vendor must demonstrate that the system is designed with maximum potential to retain original investment and minimize additional cost when upgrading with new equipment and new technologies in the future. It is imperative that investment protection is preserved when technology upgrades are performed.

2.5.3 Redundancy and Reliability

The WLAN infrastructure, when implemented, will be critical for end users in order to access network resources for their daily activities. As such, the redundancy and reliability features of the proposed solution will be a crucial to the ongoing operations of the network. The solution(s) (hardware and software) and required integration services to provide the redundancy features should be clearly identified so as to provide the ability to withdraw this option without affecting other aspects of the project.

- a. Cost-effective solutions for the redundancy will be an important consideration. Solutions that do not require procurement of active AP licenses for both the primary and redundant systems will be preferred.
- b. The solution will have the capability to support system redundancy. Any central resources used, such as centralized controller or cloud management console, must have redundancy capabilities. The redundancy capability should be included in the base bid (equipment and services). The Vendor will describe how the redundant system for the WLAN management will work.
- c. When redundancy is incorporated into the design, the systems (primary and redundant) will have the ability to load-balance the traffic. In the normal mode of operation, the primary and redundant controller (or other central resource) will operate in a load-balancing manner. In the event of a malfunction of the one of the controllers, the secondary controller shall automatically assume full operational responsibility of the WLAN management. The Vendor will identify the failover time and whether end users will lose any feature/functionality and connectivity during the failover period.
- d. During the failover mode, it is desirable that end-user connectivity for data services is not interrupted or is automatically restored. If end users are required to take any actions to restore data services connectivity (re-associate, re-authenticate, re-log in, etc.), the Vendor must identify those actions in the proposal.
- e. It is desirable that the solution economically provides remote site survivability (i.e., if the controllers are housed at a centralized location or in the cloud, and communications to the

primary and secondary controllers are lost, users already authenticated to the network must continue to have access to network resources).

2.5.4 Guest Wireless Access

The solution must include a captive portal guest access solution for obtaining wireless access to a guest SSID. The guest wireless network must be segmented from protected networks throughout the wireless network architecture. The Vendor will provide guidance to ensure guest access is segmented throughout the entire network.

2.5.5 Wireless Access Point Specifications

The wireless access points must meet (or exceed) the following specifications for operation:

Wi-Fi standards	802.11ac (wave 2)/n/b/g
Radio	1x Dual Band (2.4 GHz & 5 GHz) Radio (for spectrum analysis, WIPS, etc.) 1x 5 GHz Radio: 802.11ac/n, 4x4 1x 2.4 GHz Radio: 802.11ac/n/b/g, 4x4 1x Bluetooth Low Energy (scanning and beacon support)
Antenna	Integrated omni-directional antennas
Wireless authentication	WPA, WPA2-PSK, WPA2-Enterprise w/ 802.1X (TKIP/AES)
Wireless transport security	EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-SIM
Network standards	802.1q (with VLAN to SSID mapping), 802.11r, 802.11k, 802.11v
LED indicators	1 power/status indicator
Power	802.3at (PoE) 12V DC input (Alternative)
Physical connectivity (ports)	2x Gigabit Ethernet RJ45 (auto-sensing) 1x DC power connector
Enclosure	Indoor-rated protective cage for gymnasiums
Mounting	Wall/ceiling mounts included

2.5.6 Wireless Access Point Performance

- The access points will be capable of supporting RSSI (Receive Signal Strength Indicator) levels in all identified areas to support high-speed video, data, and voice. The estimate is based on RSSI strength of -55 dBm or better in both the 2.4 GHz and 5 GHz frequencies.
- The access points will have the ability to automatically scan the RF environment and reconfigure themselves for optimal channel and transmission power in the event access points are added in the area or an existing access point becomes nonoperational. Power levels of the neighboring access points may be increased and decreased dynamically to mitigate any co-channel interference.

- c. Where multiple APs are used in a building, the solution will be capable of supporting intelligent load balancing between radios.
- d. It is desired but not mandatory that the solution has the ability to provide automatic remediation against rogue access points and denial of service attacks. The system administrator will be notified via alerts when rogues are detected.
- e. All equipment proposed in the solution must comply with the FCC's safety standards for RF emission.

2.6 DATA CABLING SPECIFICATION

Structured cabling is required for this project. This includes cabling for each wireless access point and equipment patch cabling. Vendors are required to provide turnkey cabling pricing for the requested access points locations.

2.6.1 Wireless Access Point Cabling

Each wireless access point's UTP cabling run will consist of two CAT 6 cables terminating into a RJ45 modular plug following the modular plug-terminated link (MPTL) connection method at the location identified on the prints in **Appendix B** and will have a **minimum of a 10-foot service loop neatly dressed using Velcro** at the device end to relocate the cable drop if necessary. Vendors are required to provide unit pricing for additional cable runs and CAT 6A cabling. This unit pricing may be used for any additions (or deductions) that may be necessary after installation has begun. All pricing is to include **CAT 6** UTP cable, patch panels, termination jack/connector, cable supports, coring, firestopping, lift rental, and labor based on the specifications detailed in this section.

2.6.2 Patch Panels

The Vendor will supply and install CAT 6 patch panels for the wireless access point cabling at each of the network closets as required to support the cable count. The Vendor will supply unit pricing for additions (or deductions) that may be necessary after installation has begun. The Vendor may not use existing patch panels. Patch panels shall be of the same manufacturer system as the cabling and meet the following specific criteria:

Port count per panel	24 or 48 (may be right-sized)
Performance	CAT 6
Plug/jack	RJ45
Port termination	110
Mounting application	Rack
Wire management (front)	One horizontal per patch panel (1U)
Wire management (rear)	One horizontal per patch panel (1U)
Wiring configuration	T568B

2.6.3 Patch Cords

The District will provide patch cords for the patch panel to network switching equipment end.

2.6.4 UTP Cabling

The cabling infrastructure shall employ a copper medium, referred to as UTP (Unshielded Twisted Pair) cabling, commonly employed in commercial voice and data networks. To this extent, the finished infrastructure shall comply with the installation procedures used for voice and data infrastructure builds as specified under TIA/EIA 568B standards. The finished infrastructure initially shall serve to deploy an IP-based signaling format in the future without any substantial changes to the infrastructure as built. To that end, TIA/EIA stipulations to cable distances, methods, and manners shall require strict adherence. This infrastructure shall also meet the following specific criteria:

- a. The cabling infrastructure shall be CAT6 **plenum-rated** cable. Horizontal UTP drop cabling shall be plenum rated with four (4) unshielded twisted pairs under a common sheath and that sheath shall be tested and approved for the environment into which it will reside.
- b. Horizontal UTP channels shall not exceed 90 meters (295 feet) in length.
- c. Cable shall be supported every five (5) feet.
- d. Failure to comply with cable support methods will result in a written warning. Failure to correct or repeated infractions may result in the Vendor being terminated from the project.
- e. The Vendor is responsible for neatly coring and sleeving through walls, floors, or ceilings as necessary to route cable into hallways, tech closets, or other areas that require cabling.
- f. The Vendor is responsible for **fire stopping all penetrations** made and/or used.
- g. The Vendor is responsible for securing all appropriate permits for this project.
- h. The minimum bend radius, under no-load conditions for four-pair unshielded twisted pair (UTP) cable, shall not be less than four times the cable diameter or that which is recommended by the cable manufacturer.
- i. The Vendor is responsible for applying for the performance warranty as well as providing documentation of that warranty to the Owner.
- j. The cable specified shall be in conduit or raceway between the device and the wiring closet (MDF/IDF) in areas where the cable is exposed and not run behind walls or suspended above the ceiling. Cables tied to electrical conduits or laid on ceiling tiles will not be accepted.
- k. The cable installers will be certified by the manufacturer on the cable and components used.
- l. The cabling contractor must assure that UTP cables are routed away from sources of interference, e.g., power lines, motors, fluorescent lights, HVAC, etc. All cables shall be protected from contact with sharp metal edges. The following routing guidelines shall be adhered to:

Interference source	Distance from cable
Power lines <2KVA	5 inches

Power lines 2-5KVA	12 inches
Power lines >5KVA	36 inches
Fluorescent lights	5 inches
Motor/ generators/ RF sources	40 inches

- m. The Vendor must comply with all EIA/TIA specifications as well as local building codes.
- n. While the defined system is preferred under a single-source manufacturer/supplier, for the purposes of meeting specification, the component parts of the infrastructure may be from multiple manufacturer sources. For the unshielded twisted pair (UTP), a base bid of CAT 6 installation shall be part of a manufacturer's certified program to include a minimum 15-year warranty on the entire channel. Minimally, the UTP installation must include a Manufacturer's Performance Certification and a minimum 15-year warranty on all material and labor. The Certification may be through a single manufacturer that supplies all cabling and connectors or through a joint program (one manufacturer's cable combined with another manufacturer's connectors).
- o. Approved, enhanced CAT 6 UTP plenum cable product shall be manufactured by ADC (Krone), Belden/CDT, Berk-Tek, CommScope, General Cable, Panduit, or Mohawk Cable and must be tested by ETL Intertek Testing Services and/or approved by Underwriters Laboratories.
- p. **Patch Panel-to-Access Point Cable Specification**
The cabling infrastructure between the termination point on patch panels and wireless access point shall meet the following specific criteria:

Performance	CAT 6
Jacket insulation	Plenum
Pair count	4-Pair
Wiring configuration	T568B
Gauge	24-AWG solid copper conductors
Connectors	IDC, into 110-type jack at patch panel; RJ45 modular plug at access point
Qualifications	NEC Certified, CSA Certified, UL Standard 444, IEEE 802.3af, IEEE 802.3at
Color	Green

- q. **Patch Cord Cable Specification**
The cabling infrastructure between the patch panel and network closet equipment shall meet the following specific criteria:

Performance/cable category	CAT 6
Jacket insulation	Plenum
Pair count	4 pair
Wiring configuration	T568B

Gauge	28-AWG solid copper conductors
Connectors	8P8C
Min. cable length	1 ft, right-sized for application
Bundling	No more than 12 cords per bundle
Qualifications	NEC Certified, CSA Certified, UL Standard 444, IEEE 802.3af, IEEE 802.3at
Color	Green

2.6.5 Fiber-Optic Cabling

Fiber-optic patch cabling will be required between fiber splice trays and network equipment, as well as between server equipment and network equipment. Fiber-optic cable infrastructure shall meet the following specific criteria:

- a. All installation procedures outlined in NEC, ANSI/TIA/EIA 568A, 568B.1-.3, 569, TSB 67 and BICSI TDDMM shall be followed.
- b. The cabling will have no bends with a radius smaller than 20 times the outside diameter of the enclosing sheath.
- c. Cable lengths will be right-sized to be within published distance limitations, while also leaving adequate cable slack for future relocation.

d. **Multimode Fiber-Optic Patch Cords**

Multimode patch cabling should include pre-terminated connectors. No field splicing should be performed. The Vendor is responsible for right sizing all patch-cord cabling based on pre-terminated cable lengths. Multimode fiber-optic patch cords shall meet the following specific criteria:

Mode	Multimode (OM3)
Connectors	SC
Buffer tube design	Tight Buffer Tube
Fiber type	All Glass – Laser Optimized
Index type	Graded index
Core diameter	50 µm
Cladding diameter	125 µm
Strand count	2, Duplex
Jacket	Plenum (OFNP)
Max. attenuation	@ 850 nm: 3.0 dB/km @ 1300 nm: 1.5 dB/km
Minimum bandwidth	@ 850 nm: 1500 MHz/km @ 1300 nm: 500 MHz/km

Standards	TIA-492AAAC, ANSI/TIA-568-D.3 ISO/IEC 11801
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2.7 EQUIPMENT RACKS & CABINETS

In some instances, the District will require a new equipment rack/cabinet to be installed in a network closet. The District requests that vendors provide unit pricing for multiple equipment rack and cabinet options. Specific models will be provided in an addendum. Vendors may propose equivalent products to the models requested.

All equipment shall be supplied with appropriate screws, shelves, mounting brackets, rails, etc. In addition, cable ladder racks must be included for proper cable management within the respective closet.

All components in the closet must be properly bonded to the supplied telecommunications bus bar. This includes ladder racks, equipment racks, and electronics. Daisy chaining grounding for components is not acceptable. Bonding must be done in accordance with the standards outlined in TIA/EIA-607 B: Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises.

2.8 UNINTERRUPTIBLE POWER SUPPLY (UPS) SPECIFICATION

The vendor must supply unit pricing for providing equipment and services necessary for an uninterruptible power supply (UPS) for components in the network closets. The UPS must meet the following requirements/specifications:

Mount	Rack
Capacity	Model 1: 3000VA Model 2: 2200VA Model 3: 1500VA
Input Power	Model 1: NEMA L5-30P, 120V, 30A Model 2: NEMA 5-20P, 120V, 20A Model 3: NEMA 5-15P, 120V, 15A
Output Power	Model 1: 6 NEMA 5-15R, 2 NEMA 5-20R Model 2: 6 NEMA 5-15R, 2 NEMA 5-20R Model 3: 8 NEMA 5-15R All: 120V, 60Hz, sinewave
Expansion	Model 1: Not required Model 2: Expandable Model 3: Not required
Maximum transfer time	8ms
Remote management	1x Ethernet 10/100, web access, SNMP

2.9 IMPLEMENTATION

2.9.1 Implementation Timing

It is the intent of the District to start and complete the deployment of the equipment and integration services requested in the RFP during Summer of 2020 in accordance with guidelines for E-Rate. No equipment may be billed until after July 1, 2020.

2.9.2 Project Plan

The Vendor shall provide a full installation schedule showing the workflow using a graphical representation (e.g., Gantt chart or similar tool). The Vendor's installation schedule should indicate the size of each crew working in the building on a daily basis along with timelines for building project completion. All punch list items associated with this project must be complete by the noted completion date.

2.9.3 Work Hours

Any work scheduled inside buildings, or on the building premises, must be coordinated with the District. Arrangements must be made through the District for additional work hours, if needed. Any impacts to network connectivity will occur after normal operating hours to minimize the effect of an outage.

The installation schedule will be coordinated with the District upon award. The District will work with the Vendor and the District facilities team to provide appropriate access for each building. Please note that schedules are subject to change with short notice or no notice.

2.10 INSTALLATION/INTEGRATION SERVICES

The following are the integration services required for this RFP. For these services, the pricing for the base bid will be presented using the forms found in **Appendix A**.

2.10.1 Design and Planning

Prior to the actual network implementation, the Vendor will provide the District with a detailed design of the solution and timeline for implementation. This process should involve walkthroughs of all network closets, and meetings with the District and its representatives to establish implementation details, such as work schedule and timeline, and technical details, such as network configuration, rack layout, channel and radio configuration, and authentication methods, etc. The Vendor will propose a detailed design for the District's approval before any implementation actions take place.

The Vendor will be responsible for design areas supporting the wired and wireless network, including, but not limited to:

- Device naming configurations
- IP addressing schemes and routing tables
- Rack elevation design
- Cable dressing

- Physical cabling layout/design
- Wired and wireless network security architecture
- Wired network switch configuration
- Wireless controller/management configuration
- Wireless access point configuration
- Guest network and captive portal configuration
- Active Directory integration
- VLAN configuration
- Logging and reporting configuration
- Wired and wireless network hardware and software implementation

The Vendor shall provide the services necessary to install and configure the proposed wired and wireless network solution in order to meet the District's requirements defined in this RFP and provide a fully functional system to the District. It is expected that proposed services will minimally include the following:

- Physical racking and cabling of any rack-mounted hardware as required (including removal and disposal of refuse)
- Removal and recycling of existing wired and wireless network equipment after cutover
- Mounting, cabling, and configuration of all network switches
- Mounting, cabling, and configuration of all wireless access points
- Performing baseline configuration of hardware and software, including installation of available firmware and software updates
- Configuration of IP addressing (including DHCP integration), port security mechanisms, interface descriptions, and other elements as necessary
- Configuration and optimization of wireless channels, signal strengths, and frequencies
- Configuration of management interfaces and role-based access controls
- Configuration of wireless security authentication
- Deployment and configuration of identity-based authentication with Active Directory
- Configuration of high availability between wireless controller devices (if applicable)
- Configuration of logging and reporting functionality

2.10.2 Cutover

Every effort must be made to eliminate or minimize any loss of service or to cause any disruption of service during the cutover process at the District. The Vendor shall provide:

- a. On-site assistance during the day of each cutover
- b. Remote assistance the day after to assist any issues

2.10.3 Removal of Equipment

The Vendor is responsible for removing existing wired network equipment, wireless access points, wireless access point cabling, and patch panel cabling in all buildings. All equipment that is removed will be placed in a location specified by the District. Existing wired network equipment

and wireless access point counts can be found in **Appendix B**. Costs for removal must be itemized separately for each building in the price response forms found in **Appendix A**.

2.10.4 Installation Assurances

The Vendor will describe the following:

- a. Describe the implementation team and their roles in ensuring a successful cutover
- b. Describe the resources that will be available at cutover to address unforeseen problems
- c. Describe any anticipated disruptions in service during the cutover period
- d. Responsibilities required of the District to help ensure a successful cutover

2.11 DOCUMENTATION

The Vendor shall compile and distribute to District representatives one (1) complete set of documentation. The Vendor is required to submit electronic copies of all the documentation provided in an organized format. The electronic copy shall be organized and indexed and delivered on a thumb drive media.

The Vendor will provide, upon project completion, the system design and configuration documents. This documentation will be delivered in the form of drawings, spreadsheets, text files, database, etc., that would represent the details of installed equipment.

It is our belief that a foundation of proper documentation is the key to the long-term supportability of the environment. The Vendor's documentation package shall include the information described below and will be provided to the District in both paper and electronic form. Standard format for the files is an appropriate application from the Microsoft Office suite and the Microsoft Visio application. To be included in a typical documentation package are:

- a. Rack elevation drawings
- b. Wireless access point placement diagrams
- c. Wireless network coverage heat maps
- d. Physical network diagrams
- e. Logical network diagrams
- f. Detailed inventory sheet
- g. Configuration file contents
- h. Data cabling test results
- i. Manufacturer system manuals
- j. Manufacturer's warranty for all system components
- k. Vendor's warranty for installation services
- l. Support plan summary

2.12 ACCEPTANCE/TESTING CRITERIA

Upon completion of work and prior to the final acceptance, the Vendor will submit to the District:

- a. All as-built drawings
- b. All configuration files
- c. All cable test results

- d. All system manuals
- e. All warranty documentation
- f. All testing results

2.12.1 Wired and Wireless Network Testing

Upon substantial completion of the project, the installed solution will be subject to acceptance testing. This acceptance testing will document adherence to the functional and technical requirements outlined in this RFP. The following will be assessed as part of the acceptance testing process:

- a. Unit Testing: Individual hardware and software components will be tested upon installation for compliance with their basic functional specifications. Unit testing shall comprise, but is not limited to, the following test procedures:
 - i. Basic Power-On/Initialization Tests: Determine whether there is sufficient conformance to the relevant functional requirement for the component to operate on the network. This test may involve powering on the device or loading a software program. This test should detect severe component failures—e.g., a switch that will not power up.
 - ii. Basic Interconnection/Connectivity Tests: Determine whether there is basic communication between two components. For example, a network device (i.e., a PC) communicating with the switch, or laptop connecting to the wireless network. These tests are intended to verify that communications can be established between devices.
 - iii. Capability Tests: Verify the existence of one or more capabilities of the component. Tests are performed on the individual components to determine the presence or absence of certain features and capabilities.
 - iv. Failover/Redundancy: On equipment where failover/redundancy has been configured, such equipment shall be tested for automatic failover.
 - v. Hot Swap: Ability to hot-swap network components where applicable shall be demonstrated.
- b. The testing shall occur after all of the equipment is installed and configured.
- c. Demonstrate detection of rogue access points and monitor environment for RF interference.
- d. Successfully demonstrate implementation of user profiles and policies where network parameters/characteristics react to user-specific profiles.
- e. The Vendor is to provide a final heat map indicating the wireless LAN coverage throughout the building. Prior to submission of the final heat map, the Vendor is expected to adjust the wireless APs for optimal coverage. The District or its designated representative will review and approve the final heat map before closeout.
- f. The network signoff process shall not commence until network testing has been successfully conducted. The Vendor shall demonstrate the Ethernet functionality from each location in the building by demonstrating access to the internet, file servers, and the VoIP system as well as

access to available resources on the local network. The results will be documented and included in the final documentation package.

- g. The District and/or the District's representative will observe the testing and will conduct quality assurance spot checks of the Vendor's work.

2.12.2 Cabling Testing

The cable shall be tested after installation and meet all testing and installation requirements compliant with CAT 6 based in part on all of the following standards:

- a. ANSI/TIA/EIA 568-B.1: Commercial Site Telecommunications Cabling Standard, Part 1; General Requirements.
- b. ANSI/TIA/EIA 568-B.2-1: Commercial Site Telecommunications Cabling Standard, Part 2; Balanced Twisted-Pair Cabling Component
- c. ANSI/TIA/EIA 569-B: Commercial Site Standards for Telecommunications Pathway and Spaces
- d. ISO/IEC 11801 for CAT 6
- e. ANSI/TIA/EIA 606-A: Administration Standard for Commercial Telecommunications Infrastructure
- f. ANSI/TIA/EIA 607-A: Commercial Site Grounding (Earthing) and Bonding requirements for Telecommunications
- g. ANSI/TIA-568.2-D: Balanced Twisted-Pair Telecommunications Cabling and Components
- h. NFPA 70, National Electrical Code (NEC 2014)

Test results for each new access point cable run are to be submitted electronically to the District's representative, alex.lozen-kowalski@plantemoran.com.

2.12.3 Project Closeout

- a. Upon notification the project is completed, an electronic copy of the punch list will be prepared and presented to the Vendor.
- b. To facilitate the closeout process, the Vendor will present to the District, in an electronic format, a complete list of all punch-list items resolved with the date and item(s) completed and resolution documented.
- c. Certificate indicating that any equipment that is disposed of is done so in accordance with Department of Environmental Quality standards.
- d. In accordance to the payment terms, the Vendor will submit final AIA Document G702 Application and Certificate for Payment.
- e. The District's representative will present signoff/closeout documents to the Vendor for signatures. A copy of the document will be given to the Vendor.
- f. Manufacturer's warranty for equipment will commence only upon closeout and will extend through the manufacturer-provided warranty period.

- g. The District reserves the right to inspect and approve or reject the installation before signoff. If the District rejects the workmanship or equipment functionally, the Vendor must repair or replace at their cost.

2.13 BASE SYSTEM WARRANTY

2.13.1 Wired and Wireless Network

The Vendor must provide, at no cost, **three (3) years warranty** on all hardware components required for the proposed base bid solution, as well as any voluntary alternate solutions. The District requires **8x5 4-hour response and Next Business Day remediation** on all hardware. All warranty start dates shall begin after formal acceptance of the solution.

In addition, the Vendor shall provide an annualized cost, for years four and five, for warranty on all hardware components of the proposed base bid solution and proposed voluntary alternates.

2.13.2 Structured cabling

The installation of new cabling runs shall be part of a manufacturer's certified program to include a minimum 15-year warranty on the entire channel. Minimally, the UTP installation must include a Manufacturer's Performance Certification and a minimum 15-year warranty on all material and labor. The certification may be through a single manufacturer that supplies all cabling and connectors or through a joint program (one manufacturer's cable combined with another manufacturer's connectors).

The Vendor is responsible for applying for the performance warranty, as well as for providing documentation of that warranty to the District.

2.14 LICENSES

The Vendor shall provide any perpetual license costs for all components of the proposed base bid solution and voluntary alternates to ensure devices remain operational for the duration of the warranty period.

2.15 TRAINING – AT NO COST

The Vendor shall provide training for **four (4)** District IT staff, which will include, at a minimum, the operation, administration, and troubleshooting of the hardware and software proposed, this includes any alternates selected by the District. The complete training will be conducted as **one eight-hour session or two four-hour sessions**. The training sessions will be conducted within the District during normal working hours. The training will be scheduled by the District and shall be provided at no cost to the District. The training personnel will be certified to train on the manufacturer's product. Training will include operation of both hardware and software. Key training topics for each system include, but are not limited to:

- The configuration of systems as deployed
- The configuration of any management system as deployed
- Configuration of user and administration policies/access policies
- Day-to-day maintenance and operation of the system
- System software/firmware upgrades (minor)

During the design and integration process, the District's technical personnel shall be involved and will interact with the engineers performing these services.

It is the expectation of the District that "over-the-shoulder" training opportunities will exist during the course of the Vendor's implementation. Furthermore, it is expected that the Vendor will endorse and entertain this type of training so long as it does not impede or delay the implementation process.

2.16 OTHER COSTS

If any costs are associated with your proposed services that have not been identified in prior sections, they must be detailed in **Appendix A**. Any such charges will be clearly identified, and all nonrecurring and monthly costs provided.

APPENDICES (provided separately)

Appendix A – Proposer Response Forms

Appendix B – Current Network Inventory & Drawings

Appendix C – Sample Agreement