



**NETWORK SWITCH AND WIRELESS EQUIPMENT
REQUEST FOR PROPOSALS**

**Amendment 2
Issued January 12, 2021**

RFP Issued: December 28, 2020

Original Deadline for Proposals: January 25, 2021 at 9 a.m., E.S.T.

Deadline for Vendor Questions: January 11, 2021 at noon, E.S.T.

Revised Deadline for Proposals: February 9, 2021 at 2 p.m., E.S.T.

The Pittsburgh Public Schools hereby issues Amendment 2 for the Network Switch and Wireless Equipment RFP.

Revised Due Date and Time: The deadline for bids to be hand delivered to the District's Bid Box has been changed to February 9, 2021 at 2:00 p.m., E.S.T.

Vendor Questions and Answers: The District received an unprecedented number of vendor questions to which it has tried to answer fully the questions that were relevant to this procurement and for which were not already answered in the RFP. Many of the questions are repeats of those included in Amendment 1. For ease of reference, the numbering of Amendment 2 questions continues from Amendment 1.

42. Would you consider a dual 5Ghz 4x4:4 radio in place of the 6x6:6/8x8:8 access point for your high-density locations?
Refer to Amendment 1.
43. How is ISE currently utilized in the environment? Are you leveraging roles? Is authentication being done there for network device management? Are you using TACACS or Radius for 802.1x?
Cisco ISE is utilized as the District's wireless Network Access Controller (NAC). If required, information will be provided to the winning vendor but no further information will be released as part of this RFP for security reasons.
44. How is ACS utilized currently? Are there future plans to remove this platform?
Cisco ACS is utilized as the District's wired NAC. There are no plans at this time to remove this platform. No further information will be released for security reasons.

45. What would the requirement be for demo equipment (product and quantities) and what is the success criteria?
Demo equipment is not required from all bidders as part of their bid response, but the District reserves the right to request demo equipment, one of each item, to test with the District's current environment prior to final award.
46. With regard to 5.3, a heatmap is required prior to installation. What is the goal of this process with the installation of the APs being a one-to-one swap? If the proposed solution provides interactive heat maps during installation would the heat maps still be required?
The goal of the pre- and post-install heat maps is to ensure that the proposed equipment has the intended coverage area. Such maps are required.
47. Does PPS have a VMWare or Hyper virtual environment available to support required virtual appliances?
Yes.
48. Please provide more information around section 4.0 B with regard to the MGIG switches. MGIG would imply 2.5 port speeds. Is 2.5G port speeds a requirement?
Yes.
49. Please provide more information around section 4.0 C. Are copper ports required in this switch as the specification calls for full PoE+ in the switch?
POE+ is not a requirement for this switch. See Amendment 1.
50. What optic types are required? SX/LX SR/LR/ER??
SR.
51. What fiber types are installed in the environment? Single mode/MMF? If MMF, what OM rating?
MM, 62.5m OM2.
52. Are there any requirements for switch stacking? If so, please provide required stacking cable lengths.
Not all manufacturers require stacking and therefore this is not a minimum requirement for this procurement. See Amendment 1.
53. Are redundant/secondary power supplies required?
Switches must be able to provide their full POE+ budget. Redundant power supplies are not required. See Amendment 1.
54. Rack imaging and room for parallel install required, is this available? This way switching can be installed alongside legacy switching, and cabling moved in a rolling outage fashion.
No.

55. What are the installation timeframes for the wired and wireless portions of the project?
The goal will be for the project to be completed during the summer break but is dependent on the timing of E-rate funding awards. See Amendment 1.
56. Can multiple controllers be clustered to achieve the 6000 AP requirement?
Yes. See Amendment 1.
57. Are 1/10Gb negotiating SFP+ optics required?
Yes.
58. How many SSID's will be broadcasted and what are the security requirements for each?
The number fluctuates by school with ranges from 3-7. The District will not answer any security requirement questions due to network security concerns.
59. What is the port density required for each closet?
The port density varies per closet.
60. What rack types are deployed in the environment (2 post/4 post)? If there is a mixture, may we have a quantity of each type?
A mixture of 2 and 4 post racks. Quantities are unavailable at this time.
61. Are images of the existing racks available?
No.
62. Is full POE+ is required for the Fiber Infrastructure switches?
No. See Amendment 1.
63. Will the winning bidder in any way be responsible for the relocation of underperforming access points due to placement?
No. The District fully expects that the APs proposed in the winning bid will not underperform and therefore will not be required to be relocated.
64. Is there anyway to get a minimum mounting depth for the racks?
Most of the District's racks are standard 19" depth.
65. Are the racks equipped with UPS or generator support?
No.
66. What type of wireless authentication is used?
The District will not provide this specific information due to security concerns. However, all authentication is industry standard.
67. How does the district utilize Cisco ISE?
Cisco ISE is utilized as the District's wireless NAC.
68. What type of fiber is used between the closets, Single-mode, multi-mode?
MM, 62.5m OM2.

69. How many clients per classroom?
The client count varies per classroom. The District is looking to use 4X4 access points in every classroom and 6x6 or larger APs in common areas.
70. What type of client devices are currently in use?
The list of client devices that connect to the District's wired and wireless infrastructure is quite extensive and includes phones, printers, tv's, computers, access points, postage meters, tablets, smart phones, electric meters, cameras, climate control systems, etc.
71. Does the district offer guest wireless? What is used for authentication? How many concurrent users?
The District offers Guest Wireless for contractors and non-District staff. No further information will be released for security reasons.
72. Does the district offer BYOD wireless? What is used for authentication? How many concurrent users?
The District allows student and staff to bring their own devices. No further information will be released for security reasons.
73. What type of cable is used for the wireless?
Ethernet.
74. Page 3, 4.0/C Fiber Infrastructure Switches, should they have redundant/back up power supplies?
No.
75. Page 3, 4.0/A & B, Infrastructure Switches (A) and MGIG Infrastructure Switches (B), request that all 48 ports must be full POE+, does that mean all ports can run a POE+ device, or all ports must support simultaneous (at same time) power output of POE+ device?
All ports must support simultaneous (at same time) power output of POE+.
76. Do you require full interoperability and compatibility with all listed features of Cisco ISE?
No.
77. Do you require full interoperability and compatibility with all listed features of Cisco ACS?
No.
78. ISE Features
- Do you require ISE device profiling? No.
 - Do you require ISE device profiles to trust and profile VoIP phones? No.
 - Do you require TACACS+ compatibility with your network equipment? No.
 - Do you require Security Group Tags (SGT) functionality within ISE? No.
 - Do you require ISE seamless Change of Authority (CoA) functionality? No.
 - Do you require that ISE has the ability to push policy to switchports based upon device profile? No.

- g. Do you require that ISE be utilized for BYOD onboarding and profiling? **No.**
- h. Do you require that ISE be utilized for any type of guest portal? **No.**
79. Can you provide some background on the exclusion of any cloud-based management platform?
After extensive research and analysis, the District has decided it will only consider non-cloud-based solutions to ensure maximum localized security. We will not be reconsidering our position on this requirement.
80. Can you provide some background on the requirement of on-premises management platforms?
See previous answer.
81. Is it required that switching and wireless be integrated into one management platform (single point of visibility)?
This was not a requirement of this RFP.
82. In terms of automation and provisioning, is it required that switching/wireless infrastructure provide 'Software-Defined' capabilities?
This is not a requirement of this RFP.
83. Do you require AI/Machine learning intelligence built into the switching management platform, to aid in visibility and problem resolution?
The RFP requires switch management software. There are no advanced feature sets defined in the RFP. Vendors may explain in their bid response the features that are provided in their solution.
84. Do you require the following security/visibility features at the switching layer: NBAR, Flexible Netflow, encrypted traffic analysis?
The RFP requires switch management software. There are no advanced feature sets defined in the RFP. Vendors may explain in their bid response the features that are provided in their solution.
85. Is it a requirement that the switching infrastructure support micro-segmentation features?
This was not a requirement of this RFP.
86. POE+ is requested on 'Fiber Infrastructure' (SFP+) switches. Does this mean you require a mixture of copper/POE+ and SFP+ ports in these switches? POE is typically not a feature of SFP ports.
The requirement for POE+ was removed. See Amendment 1.
87. Are any stacking modules required? If so, how many stacking modules are required for each switch type?

Not all manufacturers require stacking and therefore this is not a minimum requirement for this procurement.

88. Are SFPs to accommodate multimode or single mode fiber? If multimode, can you provide the type of fiber currently in use?
SFPs must accommodate multimode fiber. Fiber type current in use: MM, 62.5m OM2
89. Do all switches need Layer 2 and Layer 3 functionality?
This was not a requirement of this RFP.
90. What is the maximum speed per port required and how many mGig ports are required per switch?
Must include a minimum of 10 mGig ports with a maximum port speed of 2.5gb required.
91. In regard to investment protection, is it required that wireless infrastructure be WiFi6 capable?
Refer to the RFP.
92. Prior to wireless deployment, do you require predictive wireless surveys for all buildings, or do you require active surveys, such that surveyors navigate throughout the buildings with wireless testing gear?
Heat maps are required pre- and post-install for all sites.
93. Can you provide blue prints/drawings for all buildings?
Facilities maps will be provided to the winning bidder. Such maps are not being provided during the RFP stage of this procurement due to security reasons.
94. Can you provide the approximate square footage of buildings for which heat maps are to be generated?
Facilities maps will be provided to the winning bidder. Such maps are not being provided during the RFP stage of this procurement due to security reasons. The approximate square footage of each building is listed below.
95. What is the estimated number of wireless endpoint devices?
19,000+
96. Is redundancy required of wireless controllers (HA pair, as opposed to a single device)?
Due to the large number of access points being deployed, the District seeks at least 3 wireless controllers. This will provide load balancing as well as account for anticipated growth. See Amendment 1.
97. For the POE+ switches, do you seek 370W or 740W?
Switches must be able to provide their full POE+ budget. All ports must support simultaneous (at same time) power output of POE+.

98. 48 Gigabit is mentioned, is that 48 ports with 1Gb throughput minimum?
With the exception of the MGIG ports, all copper ports should be 10/100/1000MB.
99. Should the SFP+ modules be for fiber or copper?
Fiber.
100. For all switches are you looking for Cores/Spline + blades/modules/line cards or individual switches?
We did not specify a preference in the RFP.
101. Will any AP's be outside or need to be water-proof/resistant?
No.
102. Either physical or virtual controllers are mentioned, do you have a preference?
No.
103. What is your proposed implementation schedule? The RFP indicates the contract is for April 1, 2021 through September 30, 2022 but doesn't indicate when the implementation would be.
The goal will be for the project to be completed during the summer break but is dependent on the timing of E-rate funding awards. See Amendment 1.
104. Could PPS provide the list of sites receiving new hardware and the quantity of AP's and switches being installed at each?
The list of buildings receiving the new hardware is contained in Amendment 2, along with the approximate square footage of each building. The exact quantities per site will be coordinated with the winning bidder.
105. Will the new AP's be replacing existing AP locations or deployed in new AP locations?
Per the RFP, the new Access Points will replace existing Access Points.
106. Will the new switches be configured to match the existing switches being replaced or will there be design and or configurations changes?
The answer to this question depends on the winning bidders' solution. However, the District does not currently plan to modify its current network design.

Approximate Square Footage of Each Building

SchoolName	SqFt	# Floors
Pittsburgh Allderdice High School	292341	4
Pittsburgh Allegheny K-5	147453	6
Pittsburgh Allegheny 6-8	28857	4
Pittsburgh Arlington 3 - 8	49672	2
Pittsburgh Arlington PreK-2	25310	3
Pittsburgh Arsenal 6-8	167962	5
Pittsburgh Arsenal PreK-5	167962	5
Pittsburgh Banksville K-5	32600	3
Pittsburgh Beechwood PreK-5	61800	3
Pittsburgh Brashear High School	403057	4
Pittsburgh Brookline K-8	63171	4
Pittsburgh CAPA 6-12	230197	9
Pittsburgh Carmalt PreK-8	109888	3
Pittsburgh Carrick High School	231324	6
Pittsburgh Classical 6-8 (contains Gifted Center)	224105	4
Pittsburgh Colfax K-8	104223	4
Pittsburgh Concord PreK-5	33540	3
Pittsburgh Dilworth PreK-5	56965	3
Pittsburgh Faison K-5	74615	2
Pittsburgh Fulton PreK-5	46044	3
Pittsburgh Grandview K-5	45059	3
Pittsburgh Greenfield PreK-8	88228	4
Pittsburgh King PreK-8	123002	3
Pittsburgh Langley K-8	261589	4
Pittsburgh Liberty K-5	52071	4
Pittsburgh Lincoln PreK-5	44496	3
Pittsburgh Linden K-5	60252	4
Pittsburgh Manchester PreK-8	76087	2
Pittsburgh Mifflin PreK-8	79049	4
Pittsburgh Miller PreK-5	60691	3
Pittsburgh Milliones 6-12	146752	5
Pittsburgh Minadeo PreK-5	81160	2
Pittsburgh Montessori PreK-8	45527	3
Pittsburgh Morrow Primary	72875	3
Pittsburgh Morrow Intermediate	79049	4
Pittsburgh On-Line Academy	224105	1
Pittsburgh Obama 6-12	352619	4
Pittsburgh Perry High School	222822	4
Pittsburgh Phillips K-5	27736	2

Pittsburgh Roosevelt PreK - 1	13946	1
Pittsburgh Roosevelt 2 -5	35335	4
Pittsburgh Schiller 6-8	46114	3
Pittsburgh Science and Technology Academy 6-12	128840	4
Pittsburgh South Brook 6-8	53035	2
Pittsburgh South Hills 6-8	403057	3
Pittsburgh Spring Hill K-5	37123	3
Pittsburgh Sterrett 6-8	68458	4
Pittsburgh Sunnyside PreK-8	68160	1
Pittsburgh Weil PreK-5	83552	4
Pittsburgh West Liberty K-5	36090	3
Pittsburgh Westinghouse Academy 6-12	307252	5
Pittsburgh Westwood K-5	63178	2
Pittsburgh Whittier K-5	45346	3
Pittsburgh Woolslair	40421	2
Pittsburgh Conroy	125432	5
Pittsburgh Oliver Citywide Academy	282186	4
Pittsburgh Pioneer	29136	1