ADDENDUM #4

FOR

BID – IT Network Switches

2/6/2024

Clarifications:

1) Please replace the original Bid Form and Scope of Work provided in the Bid Document. Those sections are attached at the end of this document.
2) Amendments to the Technical Specifications are attached at the end of this document. Please review.
3) The below Questions are the same as what asked in Addendum #2 – but changes to the answers were made in the highlighted questions. Please review the changes/amendments.

Questions:

1) Are bidders permitted to use a letter of credit for Bid Security? Answer: No. You must follow the bid document requirements of a check or bid bond.

2) 3.6.100 – Has PCCA explored the need for permits for this project with the City of Philadelphia? If so, what was the outcome? Answer: We do not go to the City of Phila. For permits. We go to PA Labor and industry. We will need to go for permitting only if we have 120V or higher circuits being installed.

3) MS390 switches you specifically asked for do not support 10gb x 48 ports. Only 5gb x48 ports. Do you wanted 10gb x48? Answer: 5GbE x48 or 10GbE x48 is acceptable.

4) In the specs it asks for 40gb x 2 per IDF, is that accurate? Answer: Yes, see Amendment to Technical Specifications attached.

5) Do you need 50gb of firewall throughput or 100gb of firewall throughput? Answer: 50Gb

6) Page 2,7-8 of Bid Document: Please clarify if both Bid Bond and Performance Bond are required? If both, or just one, what is the percentage. Answer: Bids should be accompanied by Bid Security in the form of a certified cashier's check with the Pennsylvania Convention Center as the payee in the amount equal to or exceeding 5% of the total for all bids, or a Bid Bond issued by a surety company which is authorized to do business in the Commonwealth of PA and acceptable to PCCA. The amount of the bid bond shall equal to or exceed the total for all bids. Performance and Payment bonds are required after the bidder is awarded the bid.

7) Please clarify if the required Performance and Payment bonds, if awarded, are 100% performance bond and 100% payment bond? Are we required to include in our response the cost of obtaining the 100% performance and payment bond? Answer: The awarded bidder shall provide bonds equal to the contract price (100% performance bond, 100% payment bond). You should include the price of obtaining those bonds in your bid number.

8) What routing protocols will the firewall be required to be using? Answer: There are no specific requirements on the routing protocol, however, the firewall should be able to use open-standard protocols like, OSPF (Open Shortest Path First) and RIP (Routing Information Protocol).

9) What type of optics will the WAN provider be handing off to the CPE for internet? Answer: We have 2 POE handoffs; 100Gbps and 10Gbps.

10) What other optics should be included with our pricing? Answer: Per the RFP, all optics should be included.

11) What is the exact make and model number of your existing cores switches? Answer: Note: the RFP calls for core switch replacement. The existing core switches are Cisco Nexus 7K 10 slot nodes.

12) From the Specifications: Pg4 (A2) - All ports shall support mGbE up to 10 Gbps over Cat6 cabling. The basis of design Meraki MS390-48UX2 only supports up to 5 Gbps. Please explain. Answer: Each access port must be mGig of 5Mbps or higher. Meraki MS390-48UX2 and Cisco C9300X-48HXN are both acceptable switches and speeds for this bid. Use attached Bid Form to provide numbers for either switch or both switch options.

13) From the Specifications: Pg5 (B8) - Support for up to 25.6Tbps switching capacity with up to 128 nonblocking 40 Gigabit QSFP56 ports. QSP56 is capable of data rates of 25/50 Gbps, not 40 Gbps. Please explain. Answer: Line cards should be QSFP28 ports. - see Amendment to the Technical Specifications (attached).

14) From the Specifications: Pg5 (B8) - The basis of design for line card Cisco C9600-LC-24C {Pg4 (B2)} does not support QSFP56 ports. Please explain. Answer: Line cards should be QSFP28 ports. See Amendment to the Technical Specifications (attached).

15) From the Specifications: Pg5 (C3 & C9) - The basis of design edge router (8500-12X4QC) supports 100GE on two ports. When two ports are configured at 100GE, no other ports are available for use. C9 specifies the router be configured for 1x100GE and 3x40GE. Please explain. Answer: See Edge Router on Amendment to the Technical Specifications (attached).

16) From the Specifications: Pg6 (D3) - What modules should the Cisco Firepower 4145 be equipped with? Answer: The requirement is to support additional network modules but these are not required at this time.

17) Edge Switches: Meraki MS390-48UX2-HW licensing. Enterprise or Advanced? Answer: Enterprise.

18) Firewalls: Threat Defense licensing is only available in 1-, 3- and 5-year durations. Which subscriptions (Threat, Malware, URL) are desired? Answer: 3-year. Threat and Malware subscriptions required.

19) SmartNet: What service levels and response times are required? Answer: Software Support-Phone support 24x7. Router - onsite replacement - 8x5; response time - 4h. Firewall - onsite replacement - 24x7; response time - 4h. Core switch - onsite replacement - 24x7; response time - 4h. Edge switch - onsite replacement - 8x5; response time - 4h. Analog Telephone Adaptors - onsite replacement - 8x5; response time - 4h.

20) What are the power voltages and connectors required for each equipment type. Answer: All AC voltages will be supplied via C-13 / C-14 power cords.

21) Will management systems be run locally or in the cloud? Answer: Cloud.

22) Are there any fiber runs with a distance over 2km? Answer: No.

23) Are Cisco optics required or are Cisco compatible optics acceptable? Answer: Compatible optics are acceptable.

24) Confirming that commissioning and configuration only cover core and edge switches. Firewalls and edge router are configured by others. Answer: No, commissioning and configuration to include firewalls and edge routers.

25) Page 4 of Technical Specifications / II. Products / A. Network Switches / Requirement #2: "1. Basis of design – Meraki MS390-48UX2-HW. 2. All ports shall support mGbE up to 10 Gbps over Cat6 cabling." Meraki MS390-48UX2-HW does not support 10Gbps over Cat6. Is there a business requirement for 10 Gpbs or will the 5 Gbps which is supported by the unit be acceptable? Answer: See answer to question 12.

26) Page 4 of Technical Specifications / II. Products / A. Network Switches / Requirement #3: "1. Basis of design – Meraki MS390-48UX2-HW. 3. Switches shall support management protocols SNMP 1, RMON 1, RMON 2, RMON 3, RMON 9, TELNET, SNMP 3, SNMP 2C, HTTP. And be manageable through either a GUI or command line interface." Meraki MS390-48UX2-HW does not support all of the management protocols listed. Is there a business requirement which necessitates the functionality of RMON 1, RMON 2, RMON 3, RMON 9 and TELNET? Answer: Supported management protocols coincide with the network hardware /management system proposed. No business requirements. RMON 1, RMON 2, RMON 3, RMON 9, AND TELNET are not required. The management protocols standard with Meraki MS390-48UX2 and Cisco C9300X-48HXN switches are acceptable.

27) Page 6 of Technical Specifications / II. Products / D. Firewall / Requirement #4: "Centralized configuration, logging, monitoring, and reporting with options for local or cloud based management." Do you want to have central management system for firewalls as a physical or virtual appliance? Answer: Virtual appliance.

28) Page 7 of Technical Specifications /III. Execution A. Field Quality Control / Requirement #3a: "3. Owner will require a schedule to be submitted prior to commencing along with a Purchase & Delivery Schedule to be updated regularly. a. Equipment should be staged locally before delivering to PCCA." How do you define a local staging area? Geographic proximity, etc.? Would PCCA like the switches to be unboxed and configured at the off-site staging facility, or on the PCCA grounds? Answer: No preference for the unboxing and configuration process. However, the staging location has to be in the state of Pennsylvania if staging is required. No staging is to be done on the PCCA grounds.

29) What is your expected timeline for project completion? Answer: Contract is for 365 days. Goal is to complete as soon as possible, but timeline is negotiable.

30) Page 8 of Technical Specifications / II. Products / C. Training / Requirement #3: "3. Provide unlimited phone support for duration of support agreement." Please define what "unlimited

phone support" entails. Is this addition to or in lieu of TAC support? Answer: This refers to TAC support that should be available on a 24x7 basis.

31) Can we install the new switches in the IDFs in parallel with the existing switches to minimize downtime? Answer: Yes.

32) Would the PCCA consider a 2 week extension to allow time for the necessary bid bonds to be finalized? Additionally, our proposal is subject to change based on the responses to questions. In light of which, additional time would be in the best interest of an accurate and complete BOM being issued to the PCCA. Answer: New bid due date is 2/15/24.

33) Will there be a PPCA representative working with our engineers as we get the devices installed and turned up to ensure that the PCCA maintains functionality throughout the various parts of their environment? Answer: Yes.

34) Page 7 of Bid Document: "Signature(s) must be in long hand and must be those of a principal duly authorized to make contracts." Will PCCA accept scanned signatures as long as they are in Long-hand? Answer: Yes, we will allow it.

35) Can the PCCA confirm that they only wish to have 3 years of exchange warranty and 7 years of support? Would offers that provide 7 years of exchange warranty be scored more favorably? Answer: Only 3 years of exchange warranty and 7 years of support are required for comparison purposes between all suppliers.

36) PCCA would have to add an additional 9600 series chassis per MDF to get to the # of 40G ports that are required, especially if you want dual sups. What is your plan for this? Answer: Please provide the needed number of Network core chassis to support dual links to each IDF – see Amendment to Technical Specifications (attached).

37) What does, or what will, SD-WAN connect? Are you doing SD-WAN currently? If so, which controllers are you using? On-prem/cloud? Answer: We are not currently using SD-WAN.

38) How much crypto (ipsec/sd-wan) throughput? To get licensed for over 20G agg of crypto throughput for the 8500s, you'd need ***8500-20X6C.*** How much crypto(SD-WAN/IPSec) throughput do you need? The 8500-12X4QC is limited to 20G of crypto throughput via licensing. Answer: The specification does not require a minimum crypto.

39) Will SD-WAN be used day 1 or is this for future planning? Should controllers be included if not already owned? Answer: SD-WAN will not be used.

40) Is there anything using FCoE that will traverse the devices in the request? Answer: No.

41) Are you good with 8x5xNBD support, or do you require 24x7x4 on all devices? Answer: See response to question #19.

42) How are you managing firewalls today? Answer: Cisco Firepower.

43) Is URL Filtering required on the firewalls? Answer: Yes.

44) The firewall subscriptions only go to 5 years, not 7. Can set support to 7yrs though. Please confirm what you want. Answer: Only 3 years of exchange warranty and 7 years of support are required for comparison purposes between all suppliers.

45) What's plan for connectivity to the firewalls? What fiber type in use and ends? How many 40/100G connections are needed day 1? 10G? Answer: All fiber associated with this project is single mode. Typically, LC type ends, starting with 4x25GE or 8 x10GE ports.

46) How are firewalls zoned? DMZ, inside, outside? Answer: Inside.

47) What power cables for the firewalls? NEMA 5-15 or recessed PDU style? How about for routers? Answer: C13-C14

48) Which power cables for IDF switches (exact breakdown)? Recessed style or nema 5-15s? Answer: C13-C14

49) Which power cables for MDFs (exact breakdown)? Recessed style or nema 5-15s? Answer: C13-C14

50) Do you want dual supervisors in cores? Might help us get to the port density for 40G easier with single sup, but earlier failover between MDFs then. Answer: Dual supervisors are not required in each chassis but are required within each core. e.g. if dual chassis are proposed in each core then one supervisor is required in each chassis. If a single chassis is proposed for each core then that chassis must have dual supervisors.

51) Where are you looking to do VXLAN? Merakis won't do that at access layer. Answer: Network switches do not require VXLAN support.

52) Please confirm that there are 132x IDFs in use and in-scope. Answer: 126

53) Their Meraki MS390-48UX2 isn't mGig up to 10G on all ports, only 5Gb. Do you actually need 10G on each port? The MS390-24 port will do 10G mGig on each port, not the 48 porter - can do 10G with a module…but that will be needed for 40G. The MS390-48UX can do 12 ports up to 5 and 10G of mGig. The other 36 only go to 2.5Gbps. Answer: See answer to question 12.

54) Is there any Meraki gear in use today? Answer: No.

55) Are you doing routed access or L2 between cores and access today? Answer: L2.

56) How many racks do you need and how many RU? How large of a rack can you fit in those columns? 2 RU? Who will install the racks? Answer: No additional racks in IDFs or MDFs. Not every column will be able to accommodate a rack due to piping. For bidding purposes, assume 50 racks will be needed for the columns. The available space from the column to column door is 10 inches. The bidder will have to install all new racks. Awarded Contractor to confirm space in columns before rack order. No other equipment in the columns needs to be accommodated by the racks other than the switches.

57) Are 7yr licenses/support mandatory? Price savings by shortening these some. Answer: Only 3 years of exchange warranty and 7 years of support are required for comparison purposes between all suppliers.

58) Are you using cat6 or cat6a? Answer: Cat6.

59) Are we permitted to reuse existing Nexus 7710 transceivers as IDFs are migrated over to new gear (core and access layer)? Merakis will obviously require different transceivers, but Cisco switches will often be compatible across models. Answer: Yes, if compatible.

60) What type of virtualization infrastructure is being utilized? Would like to see if we could use VM controllers for DNA Center and FMC. Answer: Currently using VMware and VM controllers would be considered.

61) Your bid requirements specify 10gb on every LAN port for every IDF switch. On PAGE 4 Item II-Products Section A Bullet point 1 you request a MS390-48UX2-HW which only supports 5GB interfaces, however Item #2 asks for 10gb interfaces, but that specified equipment does not meet the 10mgig requirement. Do you want us to provide a switch that meets the bid 10gb requirement? Answer: See answer to question 12.

62) How many closets require network racks? What physical size racks do you need? Do we need to accommodate other equipment in the network racks in the columns other than new network switches? Answer: See Answer to question 56.

63) Who is responsible for ladders or scissors lifts? Will PCCA provide those? Answer: Contractor must provide their own ladders and scissor lifts.

64) What transceivers are used between the current ISP and current routers? Answer: We have 2 POE handoffs; 100Gbps and 10Gbps.

65) In the MDF who will be responsible for relocating the current servers (not network switches) to make room for the new core equipment? Answer: PCCA will be responsible for relocating any existing equipment.

66) What is the process for delivering pre-configured equipment to your site? Answer: Preconfigured equipment delivered to the site will need to be accepted by a member of the PCC IT department and be installed onto the network within one week after delivery.

67) Firewall model 4125 is currently end of sale, and not supportable for 7 years. Shall we provide an alternative model, or would you prefer the model listed in the technical specifications document? Answer: See Amendment the Technical Specifications (attached). BOD is Cisco Firepower 4215.

68) Do you have an additional 10 pairs (20 fibers) of SM Fiber between the ExP-MDF and MDF? Answer: Yes.

69) What line modules are installed in your current nexus core 7k equipment? What additional ports are available to support cross-connect to new switches? Answer: F348xp-23 Series. 10GE

70) What is the expectation at the switch end for patching. Should we assume that the existing switch is fully patched, and will require prior documentation and a full re-patch once the new switch is installed? Answer: Assume that the existing switch is fully patch with no prior documentation. Will need a full repatch once the new switch is installed.

71) Is there a current Show Schedule for the facility? Its our understanding that the center will be busy this yr and arranging installs between shows will be tricky. Considering the cost of lifts, the contractor will need to plan far enough ahead to be productive. Answer: Yes, a full-year show schedule is available and will be made available to the contractor awarded.

72) Can we substitute the requested firewalls and edge routers with a single appliance? There are many options from the industry leaders which have better ratings from Gartner and NSS Labs. Benefits to PACC include more effective firewall, higher performance, lower cost, and a simplified management. The appliance we are proposing is Fortinet FG-3501F. This NGFW includes industry leading SDWAN capabilities (at no additional cost) so you can consolidate your firewalls and internet routers into this solution. (See data sheet sent.) Fortinet is the largest NGFW provider (based on units shipped) and we have a large and happy customer base in the Philadelphia area. Answer: We will not consider this option.

Attachments:

1) Amendments to the Technical Specifications – (2 pages)
2) New Bid Form and Scope of Work – Use this Bid Form and Scope of Work in lieu of the original Bid Form and Scope of Work included in the original bid document. The rest of the Bid Document stays the same. (3 pages)

AMENDMENTS TO THE TECHNICAL SPECIFICATIONS

These technical specification amendments apply to the original specifications provided for the IT Network Upgrade Project. These are to help clarify ambiguities, provide additional information, or address concerns that may affect the vendors' ability to submit accurate and competitive proposals.

The network design drawings that were provided with the bid pack are based on the current network topology.

Technical Specification Document

Section II – PRODUCTS

A. Network Switches

7: Uplink optics must be included in a quantity of (2) per every IDF with 25/40 GbE throughput on each.

8: Link between each of the (2) MDF’s and each switch must be 25/40Gbs on OS2, singlemode fiber (the fiber backbone is in place and not included in the scope of this RFP).

B. Core Switches

2: The links to each IDF will be over existing single-mode fiber at a minimum of 25Gbps with the option to breakout links at 10Gbps. The basis of design for line cards is the Cisco C9600-LC-48YL.

8: Support for up to 25.6Tbps switching capacity with up to 128 nonblocking 25 or 40 Gigabit QSFP56 ports.

9: Switch must be configured with line cards to support 25 or 40 Gigabit links to all IDF’s, plus 15% spare capacity with additional chassis included as necessary.

C. Edge Router

9: Configure for 1x100GE and bundled 3x40GE or 5x10GE.

D. Firewall

2: The basis of design for the firewall appliance is the Cisco Firepower 4215.

3: The firewall must be able to support 50G throughput with (8) SFP+ interfaces on the chassis.

E. PATCH CORDS

a: Fiber Optic jumpers of duplex 8/125µ Os2 fiber with appropriate connector types to mate between the fiber optic patch panel and fiber port on the associated switch (e.g. LC, SC, SM, etc.). Length determined by distance from switch to fiber patch panel with 1.5 meter added length allowance for future moves within the rack. Confirm connector compatibility with backbone infrastructure and switch ports prior to ordering.

BID FORM

BID PACKAGE: IT NETWORK UPGRADES

For the

PENNSYLVANIA CONVENTION CENTER
PHILADELPHIA, PA

TO: Pennsylvania Convention Center Authority — OWNER

1101 Arch Street — ADDRESS

Philadelphia, PA 19107

FROM: _____ — BIDDER

_____ — ADDRESS

_____ — CITY/STATE

SUB-PACKAGES BIDS:

A. **Bidders must include pricing for all Items**. Partial Bids are not acceptable.

B. To validate their Bid, the Bidder must provide a Total Bid-Package Price at the bottom of the Bid-Package list in both Arabic numbers and written form.

C. Having carefully examined the Bid Documents together with any Addenda as listed hereinafter, the undersigned hereby proposes and agrees to provide all labor, materials, plant, equipment, transportation and other work as necessary and/or required to execute all of the Work described by the Bid Documents, AS FOLLOWS:

Bid Package: IT Network Upgrades
The undersigned hereby proposes to furnish all materials and perform all of the Work for the erection, construction and completion of the subject Project as shown on the Drawings, described in the Specifications and specified in the General Conditions, Supplemental or Special Conditions, Addenda, if any, and other Contract Documents, or as referred to in the "Solicitation For Bids" and "Instructions to Bidders" for the following amounts:

BASE BID: Using Meraki MS390-48UX2 switches as the basis of design.

_____ (DOLLARS) ($ _____)

ADD ALT. No. 1: Using Cisco C9300X-48HXN switches as the basis of design.

_____ (DOLLARS) ($ _____)

Bid Package – IT Network Upgrades

Scope of Work

BASE BID: IT Network Upgrades

1) **Contractor to provide all labor, materials, and equipment required to perform the selective demolition and removal of the IT Network Upgrades, as stated on the drawings and specifications.**

2) **Contractor to provide all labor, materials, and equipment required to perform the complete installation of the IT Network Upgrades, as stated on the drawings and specifications.**

3) **Contractor to use Meraki MS390-48UX2 network switches as the basis of design.**

4) **Contractor to schedule work so not to disrupt the daily operations of the PA Convention Center.**

5) **Drawings & Specifications:**
   a. **PCCA Network Design and Diagram: (7 Pages) Drawings**
   b. **PCCA Switch Count by IDF: (2 Pages)**
   c. **Technical Specifications: (8 Pages)**
   d. **Standard Contract Requirements – General Conditions (25 Pages)**

ADD ALT. NO. 1: IT Network Upgrades

1) **Contractor to provide all labor, materials, and equipment required to perform the selective demolition and removal of the IT Network Upgrades, as stated on the drawings and specifications.**

2) **Contractor to provide all labor, materials, and equipment required to perform the complete installation of the IT Network Upgrades, as stated on the drawings and specifications.**

3) **Contractor to use Cisco C9300X-48HXN network switches as the basis of design.**

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   a. **PCCA Network Design and Diagram: (7 Pages) Drawings**
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c. **Technical Specifications: (8 Pages)**
d. **Standard Contract Requirements – General Conditions (25 Pages)**

Additional Project Documents:

1. **Exhibit AA** – Anti-Discrimination Policy
2. **Exhibit BB** – Solicitation for Participation and Commitment Form
3. **Exhibit CC**- Best and Good Faith Efforts
4. **Exhibit DD**- Code of Conduct
5. **Exhibit EE** – Drug-Free Workplace Policy
6. **Exhibit FF** – Contractor Safety Checklist
7. **Exhibit GG** – Sustainability Commitment Form and Guidelines
8. **Exhibit HH** – Contractor Compliance Form

Download all Exhibits from PCCA Website:

https://paconvention.cobblestone.software/gateway/DocumentLibrary.aspx