District Information Technology Office

Township of Union Public Schools

Memo

To: School Board Members

From: Sandra Paul - Director of Technology and Operations

CC: Gregory Tatum - Superintendent of Schools
Annie Moses - Assistant Superintendent
Gregory Brennan - Business Administrator

Date: 10/16/16

Re: Summary of the UHS WiFi Project

Project Objective:
- This infrastructure will provide Wifi access for 1-1 project in UHS (2400 devices)
- This will allow for UHS to move forward to fulfill the requirements for the 2014 NJ Technology Standards, NexGen Science Standards and the Common Core Standards.
- Providing technology access for all UHS students in any location within the HS including classrooms, gyms, library, etc. list all the areas in the building that will have access
- Allow for students to have access to a technology device; supporting the educational process to be available for HS students beyond school hours.
- To provide an opportunity for students and teachers at UHS to move forward with the district's goal of adopting Google Apps for Education (GAFE).
- Provide access to the Internet for all HS students.
- Provide an opportunity for the HS to move forward with adopting digital literacy (digital learning) for the students. This will be developed further in the district's technology plan as stated in the NJ state guidelines. This will allow for the UHS to move forward in the state initiative of "Future Ready School NJ". Click on the link to learn more about Future Ready School NJ.

- To prepare all UHS students for Career and College Readiness.Again ...the district's technology plan can back this up as well.
- Provide access for each HS student to complete the PARCC assessment with their assigned school device in any location in the HS.
- This infrastructure will accommodate teacher assigned district devices.
- The guest wifi network will be more robust to allow more devices to be connected to the district network.
- Will be able to accommodate BYOD/BYOT (Bring Your Own Device/Bring Your Own Technology).
- This is an initial process for the district to move forward to becoming paperless.
- This will be a cost savings in purchasing textbooks and other paper-type resources for students and teachers in UHS. Many textbooks and other school/instructional resources are now available online however we would have to purchase digital resources. Nevertheless, you are correct...support from the district technology plan. After the board approve the plan can be viewed by the county...all for the record.

Summary of the HS WiFi Infrastructure:
- All wiring (data drops) will be done with plenum CAT 6 wiring.
- Each classroom will be wiring with a data drop from the classroom to the designated (IDF - Intermediate Distribution Frame) wiring closet.
- One WiFi access point will be installed per classroom. The access point can have up to 30 devices attached for Internet access.
- Each Wifi access point will be functioning at 802.11 ac standard with the capacity of 1.9Gb.
- The type of WiFi access point that will be installed are controlled via the web.
- Multiple WiFi access points will be in the common areas such as library, gyms, cafeterias, auditorium.
- Main switch located in the UHD IT office will be changed to connect all IDFs directly to the main wiring closet MDF- (Main Distribution Frame).
- All switches in the UHS wiring closets will be replaced with POE (Power of Ethernet) switches. This allows for any future end-point device that will need power can be connected to the UHS network.
- Replacement switches and new switches will be installed in the current IDFs located throughout the building.
- All IDFs will have enough data drop and switching equipment for a 20% growth.
- At present, each wiring closet (IDF) is wired with multimode fiber connecting to the guidance closet and then wired to the main wiring closet (MDF) via single mode fiber. Single mode fiber will be installed to replace the multimode fiber from each wiring closet to the MDF located in the IT office.
- All single mode fiber will have extra looping for the future relocation of the MDF to it's new location Spring 2017.
- Installation of a new web-filter device that has a bandwidth up to 10GB per second.

- Installation of a new firewall device that has a bandwidth up to 10GB per second.
- All installations and configurations will be completed by the vendor by December 31, 2016.
- All quotes are for Cisco Meraki R42 Wireless Access Points.
- All quotes are for Cisco Catalyst 2960X POE switches.
- All proposal are from vendors with a state contract.
- This project will done via a 3 years finance leasing through Cisco Systems Capital Corp at 0% financing.

Proposals were received from the following companies. (The below costs is the full purchase price of the project.)

Presidio - Total project costs: $633,132.69 with a Firepower 4120. This device is a combination of a firewall and web-filter.

Aspire- Total project costs: *$721, 086.52* with a Firepower 4140 firewall and web-filter.

CDI, LLC - Total project costs: $635,354.47 with a Firepower 4120. This device is a combination firewall and web-filter.

Leasing agreement: At the end of the 3 years that district owns the equipment. The lease agreement is at 0% interest rate for the 3years.

Years of projected obsolescence of the equipment mentioned above: From personal experience the average lifespan for Cisco switches is approximately between 6 to 10 years. Waiting on confirmation from Cisco.

Recommendation: