

This project will essentially add the *powered* switching needed to support district-wide WiFi. And then, one access point will be installed in every classroom. Offices and populated areas will be covered as well. A WiFi management system will enable them to all work together, handing off devices as they move through the district. The remaining older network switches will be replaced. New and longer lasting battery backup units will be installed in every network closet to protect our equipment. If funding is awarded, then ERate will reimburse 70% of the cost.

Items associated with the Ed Complex, Bus Garage, and Franklin building cannot be funded with ERate dollars. ERate is based on the October student count. Funding is calculated using the number of students who participate in the National School Lunch Program per building. Our Tri Star kids are included in the high school count already. The Head Start program is not ERate eligible in Ohio.

The PARCC Cache Server listed in the original quote summary is not necessary since I have already built these servers in the buildings using existing equipment. Therefore, \$12,347.85 has been subtracted from the original quote total.

The following have also been subtracted from the original quote total:

- \$14,539.29 - Ed. Complex switch upgrades to support additional building WiFi
- \$5,150.00 - Franklin-to-Ed. Complex Wireless bridge - Although an improved connecting bridge across the lake is needed, this cost cannot be funded by ERate.
- \$9,937.40 - Ed. Complex WiFi access points
- \$10,434.27 - Franklin WiFi access points
- \$993.74 - Bus Garage WiFi access points

Therefore, all of the mentioned items above, including the cache server can be subtracted from the quote total: $\$361,524.31 - \$53,402.55 = \$308,121.76$. If funded for Category 2, then ERate will reimburse 70% or \$215,685.23, leaving Celina Schools to fund the balance of \$92,436.53. Installation, warranty, and tech support is included in the pricing. All HP switches and WiFi access points carry a lifetime warranty and can be moved to new buildings if necessary.

Two additional area of potential savings:

- Cabling - it is highly possible that WiFi access points in many rooms can be connected with existing cabling.
- WiFi access point installation - If time permits, we can hang the access points and pull the cables ourselves.

Our ERate form 471 must be submitted by midnight on April 16th. A contract, or in this case a purchase order needs to be signed prior to submitting form 471. If our Category 2 request is *not* funded for this year, then the "contract" between Celina Schools and TSI will be cancelled. TSI, from Gallion, Ohio is the same contractor who did our infrastructure upgrades last year.

By the way, a form 471 will be submitted for ERate Category 1 as well. This is a separate form which will fund 70% of our telephone, cell phone, and Internet bandwidth services. ERate will no longer fund website hosting, email, or cellular data. Beginning 2015-2016, ERate is decreasing it's funding for telephone, or voice services by 20% each year for the next 5 years.

Keith Gudorf
03/19/2015

Part Number	Description	Qty	BID CAT	Installed COST
Celina eRATE Upgrades				
WE MDF - Add new HP POE+ Switch - 92 Ports				
J9533A	HP 5406-44G-PoE+-2XG v2 zl Switch with Premium Software	1	WE	\$ 4,796.09
J9306A	HP 1500W PoE+ zl Power Supply	1	WE	\$ 619.21
J9534A	HP 24-port Gig-T PoE+ v2 zl Module	2	WE	\$ 3,416.58
J9151A_	X132 10G SFP+ LC LR Transceiver	4	WE	\$ 1,398.50
SubTotal WE MDF Upgrades:		WE		\$ 10,230.38
MS MDF - Add new HP POE+ Switch - 188 Ports				
J9532A	HP 5412-92G-PoE+-2XG v2 zl Switch with Premium Software	1	MS	\$ 8,485.79
J9306A	HP 1500W PoE+ zl Power Supply	2	MS	\$ 1,238.43
J9534A	HP 24-port Gig-T PoE+ v2 zl Module	4	MS	\$ 6,833.15
J9151A_	X132 10G SFP+ LC LR Transceiver	4	MS	\$ 1,398.50
SubTotal MS Upgrades:		MS		\$ 17,955.86
ES MDF - Add new HP POE+ Switch - 136 Ports				
J9533A	HP 5406-44G-PoE+-2XG v2 zl Switch with Premium Software	1	ES MDF	\$ 4,796.09
J9306A	HP 1500W PoE+ zl Power Supply	1	ES MDF	\$ 619.21
J9536A	HP 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zl Module	1	ES MDF	\$ 2,032.04
J9534A	HP 24-port Gig-T PoE+ v2 zl Module	3	ES MDF	\$ 5,124.86
J9151A_	X132 10G SFP+ LC LR Transceiver	4	ES MDF	\$ 1,398.50
SubTotal ES MDF Upgrades:		ES MDF		\$ 13,970.70
ES IDF - Add new HP POE+ Switch - 44 Ports				
J9533A	HP 5406-44G-PoE+-2XG v2 zl Switch with Premium Software	1	ES IDF	\$ 4,796.09
J9306A	HP 1500W PoE+ zl Power Supply	1	ES IDF	\$ 619.21
J9150A_	X132 10G SFP+ LC SR Transceiver	4	ES IDF	\$ 553.50
SubTotal ES IDF Upgrades:		ES IDF		\$ 5,968.80
HS MDF - Add new HP POE+ Switch - 140 Ports				
J9533A	HP 5406-44G-PoE+-2XG v2 zl Switch with Premium Software	1	HS MDF	\$ 4,796.09
J9306A	HP 1500W PoE+ zl Power Supply	1	HS MDF	\$ 619.21
J9534A	HP 24-port Gig-T PoE+ v2 zl Module	4	HS MDF	\$ 6,833.15
J9283B	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	2	HS MDF	\$ 250.58
SubTotal MS Upgrades:		HS MDF		\$ 12,499.03
HS IDF - Add new HP POE+ Switch - 136 Ports				
J9533A	HP 5406-44G-PoE+-2XG v2 zl Switch with Premium Software	1	HS IDF	\$ 4,796.09
J9306A	HP 1500W PoE+ zl Power Supply	1	HS IDF	\$ 619.21
J9536A	HP 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zl Module	1	HS IDF	\$ 2,032.04
J9534A	HP 24-port Gig-T PoE+ v2 zl Module	3	HS IDF	\$ 5,124.86
J9150A_	X132 10G SFP+ LC SR Transceiver	4	HS IDF	\$ 553.50
WALL_CABIN ET	Enclosed Wall Mounted Data Cabinet	1	HS IDF	\$ 1,512.50
SubTotal HS IDF Upgrades:		HS IDF		\$ 14,638.20
Cabling Drops - Est				
LAB_CBL	Additional Lab Cable drop	100	CBL	\$ 8,125.00
WAP_CBL	New CAT6 WAP Cable Run	250	CBL	\$ 46,875.00

Part Number	Description	Qty	BID CAT	Installed COST
Celina eRATE Upgrades				
SubTotal CABLING Upgrades:		CBL		\$ 55,000.00

UPS Upgrades

5PX3000RT2 U	HP (Eaton) 5PX 3000VA GPH-LCD RK/TWR 2U 120V	6	UPS	\$ 7,594.43
NETWORK-MS	HP (Eaton) NETWORK CARD - MS	6	UPS	\$ 1,078.13
5PXEBM72R T2U	HP (Eaton) 5PX 72V EXT BATT PACK RK/TWR 2U	6	UPS	\$ 3,593.25
5PX2200RT	HP (Eaton) 5PX 2200VA GPH-LCD RK/TWR 2U 120V	12	UPS	\$ 13,005.30
NETWORK-MS	HP (Eaton) NETWORK CARD - MS	12	UPS	\$ 2,156.25
SubTotal UPS Upgrades:		UPS		\$ 27,427.35

Project Summary

WEST ELEMENTARY

Replace existing old switches in West Elementary School with a new HP 10 Gig Switch - all user ports are Gigabit POE+
All new Patching and Closet Cleanup and Organization and Documentation

All ports will be POE+ and ready for Cameras, WAPs and VoIP Phones
Price includes credit for existing 1 Gigabit fiber-optic interfaces and trade out to 10 Gig Fiber Interfaces
Includes Switch Programming, Documentation
When we are done -- The West building will have dual 10 Gig links - home run back to HS core -- no intermediate failure points
The 5406 will have 2 open slots for future WAP, Camera and Phone expansion
All available slots are equipped with Power Supplies - 2 total

MS BUILDING

Replace existing old switches in MS Building with a new HP 10 Gig Switch - all user ports are Gigabit POE+
All new Patching and Closet Cleanup and Organization and Documentation

All ports will be POE+ and ready for Cameras, WAPs and VoIP Phones
Price includes credit for existing 1 Gigabit fiber-optic interfaces and trade out to 10 Gig Fiber Interfaces
Includes Switch Programming, Documentation
When we are done -- The MS building will have dual 10 Gig links - home run back to HS core -- no intermediate failure points
The 5412 will have 2 open slots for future WAP, Camera and Phone expansion
All available slots are equipped with Power Supplies - 4 total

ES BUILDING - MDF

Replace existing old switches in ES Building with a new HP 10 Gig Switch - all user ports are Gigabit POE+
All new Patching and Closet Cleanup and Organization and Documentation

All ports will be POE+ and ready for Cameras, WAPs and VoIP Phones
Price includes credit for existing 1 Gigabit fiber-optic interfaces and trade out to 10 Gig Fiber Interfaces
Includes Switch Programming, Documentation
When we are done -- The ES building will have dual 10 Gig links - home run back to HS core -- no intermediate failure points
Two 1/10 Gig Fiber ports will be available for the ES-IDF
All available slots are equipped with Power Supplies - 2 total

ES BUILDING - IDF

Replace existing old 3COM switch in ES Building IDF with a new HP 10 Gig Switch - all user ports are Gigabit POE+
All new Patching and Closet Cleanup and Organization and Documentation

All ports will be POE+ and ready for Cameras, WAPs and VoIP Phones
Price includes credit for existing 1 Gigabit fiber-optic interfaces and trade out to 10 Gig Fiber Interfaces
Includes Switch Programming, Documentation

Part Number	Description	Qty	BID CAT	Installed COST
	Celina eRATE Upgrades			

When we are done -- The ES IDF will have dual 10 Gig links - home run back to ES core
The 5406 will have 4 open slots for future WAP, Camera and Phone expansion

HS BUILDING - MDF EXPANSION

Replace existing old switches in HS Building MDF with a new HP 10 Gig Switch - all user ports are Gigabit POE+
All new Patching and Closet Cleanup and Organization and Documentation

All ports will be POE+ and ready for Cameras, WAPs and VoIP Phones
Includes Switch Programming, Documentation
Includes additional ports for LAB Consolidation and Mini SW Elimination

HS BUILDING - IDF

Replace existing old switch in HS Building IDF with a new HP 10 Gig Switch - all user ports are Gigabit POE+
All new Patching and Closet Cleanup and Organization and Documentation

All ports will be POE+ and ready for Cameras, WAPs and VoIP Phones
Price includes credit for existing 1 Gigabit fiber-optic interfaces and trade out to 10 Gig Fiber Interfaces

Includes Switch Programming, Documentation
When we are done -- The HS building ISF will have dual 10 Gig links - home run back to HS core -- no intermediate failure points
Two 1/10 Gig Fiber ports will be available for the CART-IDF
All available slots are equipped with Power Supplies - 2 total
Includes additional ports for LAB Consolidation and Mini SW Elimination
Includes fiber ports for CART Building

Once the above projects are completed, All IDFs will have Gig POE Ports and at least 1 UPS
Existing surplus HP switches will be re-deployed to outbuildings and classroom IDFs
The majority of the Computer Labs can have their mini-switches eliminated and user PCs can be home run back to a 10 Gig Switch - we estimated 100 cables
There will be sufficient ports for WAP Expansion - by repurposing existing cables, you will be able to deploy wireless quickly into buildings w/o adequate wireless and eliminate the cart mounted WAPs and associated poor performance. We estimated 260 new WAP Cables - adjust as required.

Bldg	Budget
WE	\$ 10,230.38
MS	\$ 17,955.86
ES MDF	\$ 13,970.70
ES IDF	\$ 5,968.80
HS MDF	\$ 12,499.03
HS IDF	\$ 14,638.20

TOTAL NETWORKING:	NET	\$ 75,262.96
TOTAL CABLING:	CBL	\$ 55,000.00
TOTAL UPS UNITS:	UPS	\$ 27,427.35
TOTAL BRG UNITS:	BRG	\$ -
TOTAL Cache UNITS:	Cache	\$ -

Wireless Upgrades

Here's a list of projected WAPs
If you hang these WAPs and re-purpose cable, you can save some cash

School	Floor	WAPs
BOE	1	0
	Sub-Total	0
East Elem.	Basement	2

Part Number	Description	Qty	BID CAT	Installed COST
Celina eRATE Upgrades				
	East Elem.	1	36	
	Sub-Total		38	
	High School	1	76	
	High School	2	12	
	High School	3	12	
	Sub-Total		100	
	Intermediate	1	41	
	Intermediate	2	12	
	Sub-Total		53	
	Middle School	1	50	
	Sub-Total		50	
	West Elem.	1	25	
	Sub-Total		25	
	Franklin	1	0	
	Sub-Total		0	
	Bus		0	
	Sub-Total		0	
	Total		266	

802.11ac WAPs - adjust qty as required - Includes Install

J9845A	HP 560 Wireless 802.11ac (AM) AP	266	\$	496.87	\$	132,166.25
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Each WAP requires a controller license - and the base controller already has 40 - HP sells them increments of 10 & 40- You will want to add a second WAP Controller - since each controller can handle 200 WAPs

J9840A	HP MSM775 zl Premium Controller Module	1	\$	3,729.19	\$	3,729.19
J9697A	HP MSM Additional 10 AP License	3	\$	351.83	\$	1,055.48
J9371A	HP MSM760/765 Add 40 AP Lic	5	\$	1,408.55	\$	7,042.73
JF414AAE	HP IMC Wireless Service Manager Software Module with 50-Access Point E-LTU	1	\$	1,196.40	\$	1,196.40
JF415AAE	HP IMC Wireless Service Manager 50-Access Point E-LTU	6	\$	873.60	\$	5,241.60

All Buildings w WAPs:

\$ 150,431.64

Average Cost per 802.11ac WAP + License + Controller Installed:

\$ 565.53

SUMMARY

10 Gig and POE+ Network Upgrades	\$	75,262.96
Cabling Upgrades	\$	55,000.00
Wireless Upgrades	\$	150,431.64
Wireless Bridge	\$	-
UPS Upgrades	\$	27,427.35
PARCC Cache Server	\$	-
Total Project:	\$	308,121.95