Additional Notes

Project Scope:

To Complete Network equipment and material upgrades to accommodate bandwidth requirements as set forth by SETDA. This will include but is not limited to:

Switch upgrades

Cabling Upgrades

Materials needed for cabling (rj 45, etc.)

NIC card replacements

Additional Access Points

Fiber replacement (only, if necessary for a 10gig backbone) If existing fiber is capable, we will continue to use it.

Cable management

Project will be completed by Maynard Technology Department. Bids to complete this project for Maynard School District by the bidder, will be considered. Example; running the cable, installing equipment, etc. However, the idea is for our Technology Department to finish this project on their own.

The below information is provided to you for a more detailed idea as to what the project entails. These are notes for Maynard Technology Department and not specifically written for bidders. May they act as a reference to give a better idea as to what needs upgraded on our network for this project. Some of these notes will not pertain to bidders at all. So please disregard those.

Each place a phone is located will need a new run. Do not use phone as a switch for the computers anymore. They are only 10/100. They will need a drop of their own.

Need additional Aps where needed to handle wireless load appropriately.

Need Gigabit NIC cards in each desktop and laptop that is still holding 10/100 nics.

Where 10/100 switches are and need replaced, and if a new switch is not already going in that location, either replace the switch anyway and run additional drops or just replace the 10/100 switches with gigabit capable non smart switches. Non manageable.

10 gig backbone switches needed:		**Gig Switches needed:**
Server Room	24 port 1 gbic fiber	*Art
4-6	24 port 1 gbic fiber	Agri (good to go) stay same
K-3 Elem copy room	48 port 6 gbics fiber	Home-Ec (good to go) stay same
Jr High	24 port 3 gbics fiber	*Gym
HS	24 port 3 gbics fiber	**AE
Superintendent	16 port 3 gbics fiber	**BUED

*HS Library Lab
HS SPED (need 12 or 16 port) 1 gbic
Elem SPED (need 12 or 16 port) 1 gbic
*Elem Library
*Bus Garage
**Distance Learning
**BUED
Tech room (need 16 or 24 port) no gbic needed
**HS Library Lab
**Elem Lab

Additional small switches needed/hubs:

Art (8 port) non smart switch is fine
GT – non smart switch is fine. Gigabit. 8 port
Elem Sped – non smart switch is fine. Gigabit. 2, 5 ports and 1, 8 port.
Agri (8 port) non smart switch is fine
Home Ec – 2, 8 port non smart switches
Gym – 1, 8 port non smart switch
HS SPED – 1, 8 port non smart switch

*Will use one of the Cisco Catalyst that are getting replaced (7 port)
** Will use one of the Cisco Catalyst that are getting replaced (24 port)

CURRENT SWITCHES—as of 7-1-13

1 Gigabit Uplinks with 10/100/1000 Ethernet Connectivity

Cisco Catalyst 2960G-24TC-L

24 Ethernet 10/100/1000 ports, 4 of which are dual-purpose (10/100/1000 or SFP)
4 dual-purpose ports (10/100/1000 or SFP)

Cisco Catalyst 2960G-48TC-L

48 Ethernet 10/100/1000 ports, 4 of which are dual-purpose (10/100/1000 or SFP)
4 dual-purpose ports (10/100/1000 or SFP)

Compact Switches

Cisco Catalyst 2960-8TC-L

8 Ethernet 10/100 ports; compact size with no fan
1 dual-purpose port (10/100/1000 or SFP)

Cisco Catalyst 2960PD-8TT-L

8 Ethernet 10/100 ports; compact size with no fan
1 10/100/1000 PoE input port

Cisco Catalyst 2960G-8TC-L

7 Ethernet 10/100/1000 ports; compact size with no fan
1 dual-purpose port (10/100/1000 or SFP)

Cisco Catalyst 3560G-24TS: 24 Ethernet 10/100/1000 ports and 4 SFP-based Gigabit Ethernet ports; 1RU

Cisco Switches

Name	Location	Static IP Address	Model	Serial Number
mayk13sw1	elem copy room	170.211.115.198	WS-C3560G-24TS-S	FOC1414Y53Z
mayk3sw1	elem copy room	170.211.115.199	WS-C2960G-24TC-L	FOC1415V6VU
mayelrsw1	ele sped	170.211.115.200	WS-C2960G-8TC-L	FOC1411V0QD
may4-6sw1	4-6 Elem	170.211.115.201	WS-C2960G-8TC-L	FOC1411Y0Z2
mayagtsw1	tech server room	170.211.115.202	WS-C2960G-24TC-L	FOC1416Y0CJ
mayjr13sw1	jr high	170.211.115.203	WS-C3560G-24TS-S	FOC1413Y4VH
mayagrsw1	agri	170.211.115.204	WS-C2960G-8TC-L	FOC1411Y0UV
mayhecsw1	home ec	170.211.115.205	WS-C2960G-8TC-L	FOC1411Y0XS
mayhsrsw1	hs sped	170.211.115.206	WS-C2960G-8TC-L	FOC1411Y0T4
maysupsw1	super	170.211.115.207	WS-C2960G-24TC-L	FOC1416Y0BV
mayhsbsw1	hs library	170.211.115.208	WS-C2960G-24TC-L	FOC1416Y0BR
mayhsbsw2	hs DL	170.211.115.209	WS-C2960G-8TC-L	FOC1411Y0YB
mayagtsw2	tech room	170.211.115.210	WS-C2960G-8TC-L	FOC1409X3C3

Jr High Building

Network Closet (Bindea Classroom)

Cisco Catalyst 3560G-24TS

13/24 ports used; 3 gigabit (gbics) ports used. Incoming fiber from Elementary building. (1 gigbit fiber port). The other two go to other buildings.

3 APS are connected to this switch. Each classroom gets 1 drop, including teacher lounge

Teacher Lounge has a 10/100 switch with 4/5 ports used.

Marilyn Sullivan room has 10/100 switch 5 port. 3/5 ports used. But she only using the one drop. 9 drops total. 3 Aps. Makes 12 drops coming from switch and branching out.

AE

Transition Networks S24TXA 24 port switch

21/24 ports used. Feed AE only.

Resolution:

Run all new Cat6 cable for each drop in each classroom. Get rid of the 10/100 5 port or 8 port switches and replace only when needed, with another drop instead.

Need 16 (AE) port switch for this building. Gigabit would be fine. (Just backbone switches have to be 10 gig) (Closets)

Replace switch in network closet with 10 gig backbone switch.

Amount of CAT6 cable needed for this building:

K-3 Elementary

Network Closet – Copier Room in K-1

1. Cisco Catalyst 3560G-24TS

13/24 LAN ports used. 3 gigabit fiber ports used.

2. Cisco Catalyst 2960G-24TC-L

8/24 LAN ports used. 3 gigabit fiber ports used.

These switches are fed from the Tech Building (DMarc). They feed the entire district.

4 APs are fired up from the #2 switch in this closet. Various rooms branch from mostly #1 but some connections are also on #2 switch.

Each classroom has 1 drop. About 19 drops total. Most classrooms in this building have 1 10/100 switch in it for an extra computer.

Computer Lab has two switches. Both are the same

2- Unicom Dyna Switches. Both are full 16 port switches. That's 32 connections. But only about 8 are lighting up with a link light and being used.

16port 3Com switch in nurses office that feeds the whole south side of building.

Resolution:

Run all new CAT6 cable for each drop in each classroom. Replace all 10/100 switches in each classroom with actual drops for the extra student computer in each.

Replace the 2 switches in computer lab with one 24 port Gigabit switch.

Replace both switches in the network closet with 10 gig backbone switches.

Replace 3Com 10/100 switch in Nurses office. If enough ports are available in network closet. Make the runs from there. If not, then replace the switch with gigabit capable switch.

See if it is more cost effective to drop another switch on the office side of the building to save money on cable runs. Whichever is cheaper. But prolly the runs.

Replace 10/100 switch in GT with gigabit capable non smart switch.

Amount of CAT6 cable needed for this building:

Superintendent's Office

Network Closet – Very back room adjacent to Superintendent's Office

Cisco Catalyst 2960G-24TC-L

Fast Ethernet Switching Hub

1 Meraki AP

Allied Telesyn Fiber to cat 5 media converter

10/100 switch in the mailroom.

This closet feeds Art Room and Bus Garage via Fiber.

It also feeds ALE/Music room via Cat5e

6 Drops total in the building.

Resolution:

Replace all existing cable with CAT6 cable.

Replace 10/100 switch in mailroom with another drop from the core switch.

Replace Cisco Catalyst 2960 G with a 10gig backbone switch.

Remove fiber to cat5 media converter and utilize switch for that purpose.

Remove fast thernet switching Hub and make sure there are enough ports on the new 10 gig backbone switch to support all the fiber to Ethernet devices were carrying.

Move AP to center of Building.

Amount of CAT6 cable needed for this building:

TECH/ISS Building

Network Closet – Server Room

Cisco Catalyst 2960G-24TC-L

14/24 ports used; 1 Gigabit Fiber port used

This switch feeds ISS

Unicom Ethernet to Fiber Converter (feeds DL) 10/100

Ecessa Shieldlink FW/WAN Traffice Manager SL 100L EDU

M86 Security 500 Series 500-004-005 Content Filter

2 total drops in whole Building (ISS and Tech Room)

Cisco Catalyst 2960G-8TC-L

7/7 ports used. Sits in Tech Office. Feeds all drops in building except ISS

1 Meraki AP

Cisco Small Business SF-100D-08 8 port switch 10/100

4/8 ports used.

Resolution:

Run all new CAT6 cable in the entire building

Replace Cisco Catalyst in Server Room with 10 gig backbone capable switch

Rid of the Unicom Ethernet to fiber converter and use switch instead.

Rid of the Cisco Catalyst switch in Tech Room and get one with more ports for Tech Room and rest of building.

Rid of the Cisco Small Business Switch as well and run those from the new Cisco Catalyst.

Run the Meraki AP to more center of building.

Get rid of the 10/100 switch in ISS and replace with Gigabit capable switch.

If Ecessa and M86 are not Gigabit capable, find replacements.

Amount of CAT6 cable needed for this building:

Art Building

Network Closet – Top shelf of outside wall facing HS building

10/100 switch 5 port. 4/5 ports used

Fiber to Ethernet Converter 10/100

3 total drops

10/100 8 port D link switch at student desktops

7/8 ports used

Meraki AP

10/100 switch at teacher station.

Resolution:

Replace all cable with new CAT6 cable.

Replace all three 10/100 switches with one gigabit capable switch. Run cable drops instead.

Rid of fiber to Ethernet converter. Use switch instead

Amount of CAT6 cable needed for this building:

High School Building

Network Closet – Library-librarian office

Cisco Catalyst 2960G-24TC-L

18/20 ports full; 2 fiber/1 ethernet gigabit ports used. Feeds HS SPED and gym. The other is incoming. 3 total needed on new switch.

10/100 media cat5 to fiber converter (goes to gym)

Library

Qty. 2 – D Link DSS-16T 16 port 10/100 switches for Library lab.

Both use 14/16 ports used.

Distance Learning

Cisco Catalyst 2960G-8TC-L

4/7 ports used

10/100 fiber to Ethernet converter

Qty. 2 – Dlink DES-1108 10/100 switches for lab. 7/8 ports used on each.

BUED

Netgear FS524 10/100 24 port switch. 16/24 ports used.

Qty. 3 – Dlink DES-1105 10/100 switches. 4/5, 4/5, 5/5 ports used.

Trendnet 7E100-524 24 port 10/100 switch. 16/24 ports used.

Counselor Office

DLInk 10/100 5 port switch. 4/5 ports used.

HS Office

DLInk 10/100 switch . 4/5 ports used.

2 Meraki AP's in building.

Resoution:

Run all new Cat6 cable in entire building.

Replace Cisco Catalyst in HS Library office with 10 gig capable backbone switch

Rid of fiber to Ethernet converter and use switch instead.

Replace switches in library lab with gigabit capable switches

Replace all 10/100 switches and use cable drops instead when needed.

Replace DL switch with 10 gig backbone switch capable of handling all the drops in that room after ridding of the 10/100 switches in the lab.

Rid of fiber media converter in DL and use switch instead.

Replace Netgear switch in BUED with gigabit capable switch capable of handling all drops in that room. This allows ridding of all 10/100 switch and the Trendnet switch.

Amount of CAT6 cable needed for this building:

H.S. Special Education Building

Network Closet – P Vandergriff room, north wall

Cisco Catalyst 2960G-8TC-L

7/7 ports used.

Meraki Access Point

10/100 switch in gsullinger room. 3/8 ports used.

Resolution:

Run all new CAT6 cable through entire building.

Rid of 10/100 switch and replace with additional drop if needed.

May have to upgrade switch to handle the extra drops.

Amount of CAT6 cable needed for this building:

Home Ec. Building

Network Closet – East wall in Home Ec room

Cisco Catalyst 2960G -8TC-L

7/7 ports used.

Meraki AP

Resolution:

Run all new CAT6 cable throughout the building.

Need additional AP in building closer to Harper's room.

Amount of CAT6 cable needed for this building:

4-6 Elementary Building

Network Closet – Old Counselor Office – back of building

Cisco Catalyst 2960G-8TC-L

7/7 ports full. 1 gbic fiber port.

D Link DES-1105. 5/5 ports used

Each Classroom has a 10/100 switch.

1 Meraki AP

Resolution:

Replace all cable with new CAT6 cable.

Replace Cisco Catalyst with 10 gig backbone switch. Capable of holding all drops.

Replace all 10/100 switches with additional cable drops from the network closet in this building.

Amount of CAT6 cable needed for this building:

Agri Building

Network Closet – Teacher Office

Cisco Catalyst 2960G -8TC-L

7/7 ports used

Meraki AP

10/100 switch. 5/5 ports full.

Resolution:

Replace all cable with Cat6 cable.

Replace 10/100 switch with either additional drops or a gigabit capable switch. Whichever is cheaper.

Amount of CAT6 cable needed for this building:

Bus Garage

Network closet – Bus Mechanic's office

HP procurve switch 408 – J4097B – 8 Port 10/100

4/8 ports used

Fiber to Ethernet media converter 10/100

Resolution:

Run all new CAT6 cable in the entire building.

Replace the HP provurve with a gigabit capable switch

Rid of the fiber to Ethernet converter and use switch instead

Elementary Library

Network Closet – South room close to south entrance door

Fiber to Ethernet converter 10/100

10/100 8 port switch. 4/8 ports used.

Meraki AP

Resolution:

Replace all cable with new CAT6 cable

Replace 10/100 switch with gigabit capable switch.

Rid of fiber to Ethernet converter and use switch instead.

Amount of CAT6 cable needed for this building:

Elem Special Education Building

Network Closet – Rosie West Room – North Wall

Cisco Catalyst 2960G-8TC-L

7/7 ports used

Meraki AP

10/100 switch. 5/5 ports used.

10/100 switch. 4/8 ports used.

C Kimble

8 port 10/100 switch. 6/8 ports used.

Resolution:

Replace all cable with CAT6 cable

Replace all 10/100 switches with additional drops or gigabit non smart switches.

Amount of CAT6 cable needed for this building:

Gym

Network Closet – Above soda cooler in concession stand

10/100 SMC switch 5 port

3/5 ports used

Fiber to Ethernet converter 10/100

D Byers office

10/100 8 port D Link switch

5/8 ports used

Resolution:

Run all new Cat6 cable in entire building.

Replace switch and fiber to Ethernet converter in concession stand with gigabit capable switch.

Remove switch in Byers office and use drops instead.

Amount of CAT6 cable needed for this building:

ALE/Music Building

Network Closet – ALE Room

Cisco Small Business SG100D-08. 5/8 ports used

AP Meraki

This building is ran by Cat5e from Superintendent building. No Fiber.

Resolution:

Run all new CAT6 cable to and within this building.

Keep same switch.

New Cable Runs

Building	Cat6 Needed (ft.)	Total # of Drops
Tech	400	2 (and all SR equip)
Art	200	4
4-6	1600	16
Agri	200	4
K-3	4500	34
Home-Ec	600	6
Jr High	1300	13
Gym	650	2
HS	2700	16 (rewire DL lab)
Superintendent	580	7
HS SPED	210	6
Elem SPED	400	5
Elem Library	100	2
Bus Garage	50	2
ALE/Music	200	4

Approx. 14,000 ft of CAT6 cable needed

14 boxes of 1000ft. CAT6 cable

RJ 45 for all ends of every drop and every run that gets upgraded to CAT6

Gigabit Wired and Wireless Nics for all devices that are currently sitting at 10/100 nics, if available.

Other Items needed:

Cable Management – each drop, etc to conceal cable

Bidders are welcome to provide additional project items that may be needed for this project (something we may have forgotten or may need). However, Maynard School District reserves the right to reject any equipment or materials in the bid that it does not see necessary. Maynard School District also reserves the right to accept any said items into the bid that may be necessary to complete the scope of this project.

E-Rate Bid Specifications for P2 Network Equipment Upgrades

Upgrading Network Equipment to accommodate network bandwidth requirements as set forth by SETDA. Requiring a 10gig backbone on core switches and 1 gig minimum on the network.

All equipment must be compatible and manageable with existing network infrastructure that includes Meraki Wireless AP's (MR16) and Cisco Catalyst 2960 and 3560 Switches. All requested equipment must be manageable via internet/"the cloud" as existing infrastructure is.