

Madison County Public Schools

2019-2024 Technology Plan Analysis

This is the initial analysis based on current setup to help the committee develop the five year plan. An updated version of the lifecycle replacement costs will be provided when the plan is complete.

Sam Utz - Director of Technology



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Background & Purpose





Background

Current Technology Plan & Budget does not fully address
Network Infrastructure Lifecycle Replacement
Classroom/End User Lifecycle Replacement
District technology related CIP projects
Security

Current Budgets have been developed with current E-Rate Guidelines - which have changed.
Budgeting focus has to change in order to prepare the district for the next round of E-Rate.

Currently Madison is in a great place - leading the pack when it comes to Network Infrastructure
- it's imperative that there is a cohesive plan to not only sustain that, but to continue to move us forward.



Purpose

- To provide the Superintendent and the School Board with a snapshot of the current network infrastructure, user hardware infrastructure, and annual licensing/maintenance agreements.
- To provide the Superintendent and the School Board with an understanding of the fiscal impacts of maintaining the current network infrastructure, user hardware infrastructure, and annual licensing/maintenance agreements.
- To develop a sustainable technology plan for Madison County Public Schools that will allow the district the flexibility to accomplish anything from a technology standpoint while also continuing to be an educational leader in the 21st century.
- To provide the Superintendent and the School Board with a Technology plan that adequately addresses the ongoing requirements of Business Operations, Classroom Instruction, and Security.
- To provide the Madison County Public School Technology department an annual budget and lifecycle plan.



7 Pillars - MCPS Tech Plan

A Technology Plan that Supports
the District's Instructional Goals

Network Infrastructure &
Bandwidth

Help Desk & Network
Support Services

Technology Policies

Safety & Security

End User Hardware

Technology Integration

Professional Development

Technology planning needs to be based on requirements and research -
not fads or trends.

Technology is a critical player in education, providing the foundation for how the organization
operates and acting as a key enabler in the classroom.

Network Infrastructure and Bandwidth: Network infrastructure and bandwidth have become absolutely essential to the success of educational institutions. In order for Madison to continue to be successful in its educational goals, network infrastructure and bandwidth must continually be addressed in a predictable and forward thinking manner.

Help Desk and Network Support Services: To continue providing technology-related services, there have to be support services in place that can enable and maintain critical capabilities. This support goes beyond just the infrastructure, extending into the classroom and business operations where support is critical to the successful integration of technology.

Technology Policies: With a constantly and rapidly changing technology landscape, we must continue to establish, maintain, and update effective technology policies that address technology management, lifecycle replacement, network use and access (to include social media and online behavior), disaster recovery, records management and retention, security procedures, and communications policies. Effective policies will continue to provide the district with a framework for how each element of the technology enterprise is managed.

Safety and Security: Physical safety and security are of prime importance to Madison County Public Schools. In order to provide the safest and most secure environment possible for our students, we will continue to plan for, program, and implement the most effective security measures within our school district.

End User Hardware: User hardware is important in an instructional setting, as it allows the district to not only meet state mandates, but more importantly engage students in meaningful learning. Accordingly, MCPS will maintain a set of end user hardware that is capable of meeting the district's instructional goals.

Technology Integration: Technology integration is an often overlooked element within a technology plan. In order to ensure that technology is developmentally appropriate, will aid in the accomplishment of instructional goals, and will be integrated seamlessly in the classroom, there has to be a focus on evaluating, cataloging, and providing available technologies to improve teaching and learning.

Professional Development: Another element often overlooked is effective professional development for faculty and staff on the integration and use of technology. In order for the district to achieve its instructional goals, we will provide continual training, support, and staff development based on data analysis and best practices to ensure the most effective utilization of technology within schools.

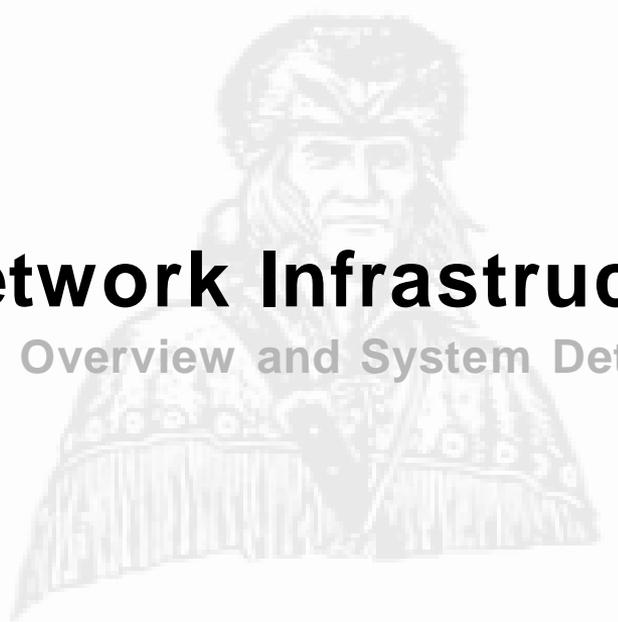


Important to Remember (5 of 7 Pillars)

Technology plans have to go beyond the device and should be based on requirements.
Technology Plans should be in support of business, safety, and Classroom objectives.

<u>Network Infrastructure</u>	<u>Helpdesk/Network Management</u>	<u>Policies</u>	<u>Safety/Security Systems</u>	<u>End User Devices</u>
<p>Necessary to ensure that the organization is able to perform its functions</p> <p>Perhaps the most important aspect of a technology plan in an organization in the 21st century - without it the others aren't necessary.</p> <p>Requires a lifecycle Replacement Plan</p> <p>Should be designed based on an organizational analysis and should be scalable</p>	<p>Helpdesk is necessary to perform network infrastructure and end user support</p> <p>Provides training as the network and devices are not important unless they know how to use them</p> <p>Provides capabilities to deploy new systems and maintain old systems</p>	<p>Require policies for:</p> <ul style="list-style-type: none">• Backup Data• System Security• Access Control• Device Management• User Management• Content Access• Disaster Recovery• Security Operations• Inventory• Lifecycle Management	<p>As a K-12 institution, security has become increasingly important and reliant on technology.</p> <p>Once network infrastructure, helpdesk/network management, and policies have been addressed, one is ready to address security systems and end user devices.</p>	<p>Once your Network Infrastructure, Helpdesk, and Policies/Security are in place an organization is ready to support the end user device</p> <p>End user devices need to have a lifecycle in mind</p> <p>Devices should be put in place based on an end user analysis</p>

<p>These areas need to be a focus. If done correctly it can support any security, safety, or end user requirement. Institutions routinely fail here.</p>	<p>Only 25 - 40% of the problem. Institutions routinely stuck here.</p>
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Network Infrastructure

Overview and System Detail



Network Summary

SBO

Switches - \$26,150
Wireless - \$8,800
Wireless Controller - \$10,000
Servers - \$57,600
Firewall - \$15,000
Routers - \$0
Phone Controller - \$7,890
UPS Power - \$4,000

Total = \$129,440

WYES

Switches - \$37,300
Wireless - \$24,000
Wireless Controller - \$10,000
Servers - \$3,000
Phone Controller - \$1,725
UPS Power - \$4,250

Total = \$80,275

MCHS

Switches - \$28,500
Wireless - \$35,200
Wireless Controller - \$10,000
Servers - \$3,000
Phone Controller - \$1,725
UPS Power - \$4,250

Total = \$82,675

MPS

Switches - \$20,100
Wireless - \$28,000
Wireless Controller - \$10,000
Servers - \$3,000
Phone Controller - \$1,725
UPS Power - \$4,000

Total = \$66,825

WMS

Switches - \$21,400
Wireless - \$28,800
Wireless Controller - \$10,000
Servers - \$3,000
Phone Controller - \$1,725
UPS Power - \$2,250

Total = 67,175

Bus Garage

Switches - \$1,600
Wireless - \$800
UPS Power - \$500

Total = \$2,900

**Total Lifecycle Network Lifecycle Replacement Costs = \$429,290

**Does not include plant infrastructure (Fiber and Cabling)



Switches

SBO (Revised 2019)

- 1 x Extreme X670G2-48x-4q (2015)
- 2 x Extreme X440-48p (2015)
- 2 x Extreme X440-24p (2016)
- 1 x Extreme X450-24p (2016)
- 1 x HP 2520-24G POE (2014)

MCHS (Revised 2019)

- 1 x Extreme X670G2-48x-4q (2015)
- 1 x Extreme Summit X440 48P Stacked (2014)
- 8 x Extreme Summit X440 48P (2015)
- 2 x HP 1910-8G POE 8P (2014)
- 20 x SFP Modules

WMS (Revised 2019)

- 1 x Extreme X460G2-48x-10G4 48p (2015)
- 1 x Extreme X460-48p (2015)
- 4 x Extreme X440-48p (2015)
- 2 x Extreme X440-24p (2015)

WYES (Revised 2019)

- 1 x Extreme X670G2-48x-4q (2016)
- 7 x Extreme X440 48p (2016)
- 5 x Extreme X440 24p (2016)
- 22 x SFP Modules

MPS (Revised 2019)

- 1 x Extreme X460G2-48x-10G4 (2015)
- 1 x Extreme X460-48p (2015)
- 3 x Extreme X440-48p (2015)
- 3 x Extreme X440-24p (2015)

Bus Garage (Revised 2019)

- 1 x HP 1910G 24P POE (2014)
- 1 x SFP Module

	SBO	MCHS	WMS	WYES	MPS	BUS GARAGE
Estimate Life Cycle Cost	\$26,150	\$28,500	\$21,400	\$37,300	\$20,100	\$1,600
Recommended Year	2021	2021	2022	2023	2020	2020



Wireless Access Points

Wireless Controller (2016)

2 x Meru 3200 @ SBO (2014 & 2016)

Wireless Licensing

154 Licenses

Wireless Licensing

3 x Multipoint Wireless Units (phase out with Fiber)

SBO (2016)

10 x 1020i
1 x 832i

MCHS (2016)

33 x 822i
6 x 832i
5 x 1020i

WMS (2015)

32 x 822i
4 x 832i

WYES (2016)

22 x 822i
2 x 1020i
6 x 832i

MPS (2016)

14 x 1020i
19 x 822i
2 x 832i

Bus Garage (2015)

1 x 1020i

	Controller	SBO	MCHS	WMS	WYES	MPS	BUS GARAGE
Estimate Life Cycle Cost	\$50,000*	\$8,800	\$35,200	\$28,800	\$24,000	\$28,000	\$800
Recommended Year	Varies	2020	2021	2021	2022	2020	2020



UPS Power Management

SBO (2016)

8 x GTXT2-700RT120
1 x GXT-3-3000

MCHS (2016)

1 x GXT3100 KVA 120
1 x GX102-1500RT120
3 x GXT2-700RT120
4 x GXT-3-1500
2 x GXT-3-3000

WMS (2014)

1 x GXT3-1500RT120
1 x GXT3-1000RT120
2 x GTX3-700RT120

WYES (2016)

4 x GXT2-700RT120
3 x PS1000RT3120
5 x GXT-3-1500
1 x GXT-3-3000

MPS (2014)

4 x GXT2-700RT120

Bus Garage (Last Lifecycle unknown)

None

	SBO	MCHS	WMS	WYES	MPS	BUS GARAGE
Estimate Life Cycle Cost	\$4000	\$4250	\$2250	\$4250	\$2000	\$500
Recommended Year	2021	2021	2022	2023	2020	2020



Servers & Virtual Environment

SBO (Installation Dates)

Nimble CS215 (2016) - Vsphere
2 x Dell Poweredge R710 (2017) ESX Host
2 x Dell Poweredge R730 - (2016) ESX Host
Dell Powervault MD3220i (2012)

MCHS (Installation Dates)

Powervault MD3000i (2010) -DR
Dell Poweredge R710 (2009) -DR
Poweredge T110 (2014) - Mstone

WMS (Installation Dates)

Poweredge T110 (2014) - Mstone

WYES (Installation Dates)

Powervault R210 (2009) - DC
Poweredge T110 (2014) - MStone

MPS (Last Lifecycle was in 2010/2011)

Poweredge T110 (2014) - Mstone

Bus Garage (Last Life cycle was in 2014)

NA

	SBO	MCHS	WMS	WYES	MPS	BUS GARAGE
Estimate Life Cycle Cost	\$57,600	\$3,000*	\$3,000	\$3,000	\$3,000	NA
Recommended Year	2023	2020	2020	2020	2020	NA



Controllers & Routers

SBO (Last Life cycle was in 2014)

3 x Cisco 2921 (Do not replace - change Metro E Connection Type Instead)
 2 x Meru 3200 (Covered in Wireless)
 XTM 8 Series Firewall - \$15,000
 Net Enforcer (Do Not Replace)
 Shoretel ShoreGear 220T1A - \$3,735.00
 Shoretel ShoreGear T1K - \$2,010.00
 Faxfinder Controller - \$2,145.00

MCHS

Shoretel ShoreGear90 - \$1,725.00
 XTM Firewall - \$15,000

WMS

Shoretel ShoreGear90 - \$1,725.00

WYES

Shoretel ShoreGear90 - \$1,725.00

MPS

Shoretel ShoreGear90 - \$1,725.00

Bus Garage

None

	SBO	MCHS	WMS	WYES	MPS	BUS GARAGE
Estimate Life Cycle Cost	\$22,890	\$16,725.00	\$1,725.00	\$1,725.00	\$1,725.00	NA
Recommended Year	2021	2022	-	-	-	NA



User Hardware

Overview and Detail



User Hardware Summary

SBO & Bus Garage

Staff Computers - \$23,750

Projectors = \$3,000

Document Cameras = \$0

Total = \$26,750

MCHS

Staff Computers = \$55,100

Student Computers = \$354,158

Projectors = \$50,200

Document Cameras = \$21,000

Total = \$480,458

WMS

Staff Computers/iPads = \$39,900

Student Computers = \$228,962

Projectors = \$44,400

Document Cameras = \$18,000

Total = \$331,262

WYES

Staff Computers/iPads = \$34,200

Student Computers/iPads = \$155,500

Projectors = \$57,200

Document Cameras = \$15,000

Total = \$261,900

MPS

Staff Computers/iPads = \$39,900

Student Computers/iPads = \$119,000

Projectors = \$70,400

Document Cameras = \$18,000

Total = \$247,300

**Recommended Life Cycle is 4 years on computers, 5 years on document projectors, 6 years on projectors



Computer Hardware - MCHS

Media Center (48)

Cart- Macbook Air (23) *Lavoie*
Cart- Macbook Pro (16) *Lavoie*
iMac (5) *Lavoie*
iPad Air (4) *Lavoie*

Foreign Language (46)

Cart- HP 14 G4 Chromebook (30) *Reyes*
Cart- Samsung Chromebook (16) *Kline*

Art (3)

iMac (3) *Wiberg*

CTE (228)

Lab- HP ProDesk600 G1 (23) *Faloon*
Cart- HP 14 G3 Chromebook (25) *Johnston*
Cart- Chrome 14 G4 (30) *S.Taylor*
HP EliteOne Desktop (2) *S.Taylor*
Cart- Macbook Air (25) *Tanner*
iPad Air (5) *Tanner*
Cart- White Macbook (25) *Kemp*
Lab- Mac Mini (8) *Miller*
Lab- HP ProDesk (2) *Miller*
Lab- Lenovo m92z (24) *Paramore*
Cart- Lenovo T420i (9) *Lindsay*
Cart- White Macbook (25) *Knight*
Cart- Samsung Chrome (25) *Nobblitt*

Social Studies (120)

Cart- HP 11 G4 Chrome (30) *Cordova*
Cart- HP 11 G4 Chrome (30) *Strong*
Cart- HP 11 G4 Chrome (30) *Hodges*
Cart- HP 11 G4 Chrome (30) *Weakley*

Guidance (6)

iMac (1) *Knighton*
Lab- Mac Mini (5) *Knighton*

Science (79)

Cart- Lenovo E440 (25) *Heffron*
Cart- HP 14 G4 Chrome (30) *Gabany*
Cart- HP 14 G4 Chrome (24) *Shared*

Band (2)

iMac (2) *Weaver*

English (150)

Cart- HP 11 G4 Chrome (30) *Hierholzer*
Cart- HP 11 G4 Chrome (30) *Temple*
Cart- HP 11 G4 Chrome (30) *Kashouty*
Cart- HP 11 G4 Chrome (30) *Burk*
Cart- HP 11 G4 Chrome (30) *Mitchell*

SPED (6)

Lenovo M93z (2) *Schienfeld*
iPad Air (4) *Schienfeld*

Math (80)

Cart- Lenovo E440 (25) *Taylor*
Cart- HP 11 G4 Chrome (30) *Wilson*
Cart- Lenovo E440 (25) *Davis*

Yearbook (19)

Lab- iMac (15) *Kashouty*
Macbook Pro (1) *Kashouty*
Macbook Air (3) *Kashouty*

Drivers Ed (30)

Cart- White Macbook (30) *Sacra*

Notes (2019)

- 52 Macbook Air = \$43,108
- 16 Macbook Pro = \$16,000
- 26 iMac = \$33,800
- 14 iPads = \$3,500
- 542 Chromebooks = \$135,500
- 52 PC Desktop = \$52,000
- 85 PC Laptop = \$42,500
- 14 Mac Mini = \$7,000
- 83 Macbook = \$20,750

Total Number of Computers = 884*

Test Capable Computers = 679 including CTE

Total Value = \$354,158



Computer Hardware - WMS

6th Grade (219)

Cart- HP 14 G4 Chromebook (30) *Hankla*
Cart- Samsung Chromebook (27) *Artale*
Cart- Samsung Chromebook (27) *Dame*
Cart- HP 11 G5 EE Chromebook (27) *Morel*
Cart- HP 11 G5 EE Chromebook (27) *Spurlock*
Cart- HP 11 G5 EE Chromebook (27) *Sprague*
Cart- HP 11 G5 EE Chromebook (27) *Adams*
Cart- HP 11 G5 EE Chromebook (27) *Tanner*

7th Grade (192)

Cart- HP 14 G4 Chromebook (30) *Rees*
Cart- Samsung Chromebook (27) *Houser*
Cart- Samsung Chromebook (27) *Welch*
Cart- HP 11 G5 EE Chromebook (27) *Walker*
Cart- HP 11 G5 EE Chromebook (27) *Kolb*
Cart- HP 11 G5 EE Chromebook (27) *Jennings*
Cart- HP 11 G5 EE Chromebook (27) *Everard*

8th Grade (186)

Cart- HP 14 G4 Chromebook (30) *Rowson*
Cart- HP 14 G4 Chromebook (30) *Mason*
Cart- HP 11 G5 Chromebook (20) *Milborne*
Cart- Lenovo E440 (25) *Milborne*
Cart- Samsung Chromebook (27) *Stanton*
Cart- HP 11 G5 EE Chromebook (27) *Yezzo*
Cart- HP 11 G5 EE Chromebook (27) *Keith*

Media Center (36)

Cart- Macbook Air (28) *Ford*
Lab- Lenovo Thinkcentre (8) *Ford*

Art (2)

iMac (2) *Kitner*

ISS (4)

Lab- Lenovo Thinkcentre (4) *Dunnivan*

SPED (12)

Lab-Lenovo Thinkcentre (4) *Lane*
iPad Air (8) *Lane*

CTE (57)

Cart - White Macbook (23) *Daniel*
Lab- Mac Mini (14) *Daniel*
Cart- Lenovo E440 (20) *Rublea*

Notes (2019)

- 120 HP 14 G4 Chromebook = \$30,000
- 135 Samsung Chromebook = \$33,750
- 317 HP 11 G5 EE Chromebook = \$81,000
- 28 Macbook Air = \$23,212
- 45 Lenovo E440 = \$22,500
- 2 iMac = \$2,000
- 14 Mac Mini = \$7,000
- 8 iPad Air = \$2,000
- 16 Lenovo Thinkcentre = \$16,000
- 23 Macbook = \$11,500

Total Number of Computers = 708

Test Capable Computers = 633 including CTE

Total Value = \$228,962



Computer Hardware - WYES

Media Center (45)

Lab- Chromebase (23) *Jasman*

Mac Mini (4) *Jasman*

Cart- Lenovo E440 (18) *Jasman*

Downstairs Classroom (210)

Cart- HP 11 G5 EE Chromebook (27) *Harrison*

Cart- HP 11 G5 EE Chromebook (27) *Davis*

Cart- HP 11 G5 EE Chromebook (27) *Lloyd*

Cart- HP 11 G5 EE Chromebook (27) *Ingram*

Cart- HP 11 G5 EE Chromebook (27) *Bader*

Cart- HP 11 G5 EE Chromebook (27) *Blincoe*

Cart- iPad Air (28) *Weigle*

Cart- iPad Air (20) *Allimon*

Upstairs Classroom (151)

Cart- HP 11 G5 EE Chromebook (27) *Lam*

Cart- HP 11 G5 EE Chromebook (27) *Cash*

Cart- HP 11 G5 EE Chromebook (27) *Tilbe*

Cart- HP 11 G5 EE Chromebook (27) *Azhari-Harris*

Cart- iPad Air (22) *Seale*

Cart- iPad Air (21) *Morehead*

Alt-Ed (25)

Mac Mini (5) *Gentry*

Cart- HP 11 G5 EE Chromebook (20) *Gentry*

Upstairs Lab (26)

Lab- HP ProOne 400 (26) *Shared*

SPED (9)

Mac Mini (3) *Knighting*

iPad Air (4) *Knighting*

Mac Mini (2) *Henshaw*

Art (23)

Cart- Samsung Chromebook (23) *Gigliotti*

Notes (2019)

- 23 Chromebase = \$11,500
- 14 Mac Mini = \$7,000
- 18 Lenovo E440 = \$9,000
- 290 HP 11 G5 EE Chromebook = \$72,500
- 95 iPad Air = \$23,750
- 26 HP ProOne = \$26,000
- 23 Samsung Chromebook = \$5,750

Total Number of Computers = 394

Total Number of iPads = 95

Test Capable Computers = 380 including Alt-Ed

Total Value = \$155,500



Computer Hardware - MPS

Library (75)

Lab- HP ProOne 400 (25) *Butterworth*

Lab- HP ProOne 400 (25) *Wintersgill*

Cart- Lenovo E440 (25) *Butterworth*

iPads (170)

Cart- iPad (25) *Shared*

Cart- iPad (25) *Shared*

Cart iPad (30) *Shared*

Cart- iPad (30) *Shared*

Cart- iPad (30) *Shared*

Cart- iPad (30) *Shared*

First Grade Pod (14)

Chromebase (14) *2 per room*

Second Grade Pod (14)

Chromebase (14) *2 per room*

Notes (2019)

- 25 Lenovo E440 = \$12,500
- 50 HP ProOne 400 = \$50,000
- 28 Chromebase = \$14,000
- 170 iPad = \$42,500

Total Number of Computers = 103

Total Number of iPads = 170

Test Capable Computers = 103

Total Value = \$119,000



End User Hardware - Staff Machines

SBO and Bus Garage (Revised 2019)

25 Computers

Total Cost = \$23,750

MCHS (Revised 2019)

58 Computers

Total Cost = \$55,100

WMS (Revised 2019)

42 Computers

Total Cost = \$39,900

WYES & ALT Ed (Revised 2019)

36 Computers

Total Cost = \$34,200

MPS (Revised 2019)

42 Computers

Total Cost = \$39,900

** Total cost = \$192,850 which is \$48,212/year

Note: This number may vary depending on need and staff size

** Recommend a 4 year life cycle with the SBO being completed with WYES and the Bus Garage



End User Hardware - Projectors

SBO (Revised 2019)

3 x Standard Projector
Recommend 3 Standard
Life Cycle Cost = \$3,000

MCHS (Revised 2019)

2 x Smart Projector
35 x Standard Projector
Recommend 26 Standard / 11 Smart
Life Cycle Cost = \$50,200

WMS (Revised 2019)

11 x Smart Projector
19 x Standard Projectors
Recommend 12 Smart Projectors / 18 Standard
Life Cycle Cost = \$44,400

WYES & ALT Ed (Revised 2019)

22 x Smart Projector
4 x Standard Projector
Recommend 28 Smart Projectors
Life Cycle Cost = \$57,200

MPS (Revised 2019)

8 x Smart Projectors
24 x Standard Projectors
Recommend 32 Smart Projectors
Lifecycle Cost = \$70,400

Bus Garage

None

- ** Total cost at recommended level is \$225,200 which is \$56,300/year
- ** Smart Projectors anticipated for Science, Math, and SPED and K-5
- ** Recommend 6 year life cycle
- ** This is an item where risk is acceptable if funding not available



End User Hardware - Document Cameras

SBO (Revised 2019)

None

MCHS (Revised 2016)

29 Document Cameras

Recommend 35 Document Cameras

Life Cycle Cost = \$21,000

WMS (Revised 2019)

23 Document Cameras

Recommend 30 Document Cameras

Life Cycle Cost = \$18,000

WYES & ALT Ed (Revised 2019)

22 Document Cameras

Recommend 25 Document Cameras

Life Cycle Cost = \$15,000

MPS (Revised 2019)

24 Document Cameras

Recommend 30 Document Cameras

Life Cycle Cost = \$18,000

Bus Garage

None

- ** Total cost at recommended level over 5 years = \$72,000 which is \$14,400
- ** Many of these cameras are routinely purchased out of Instruction or department funds
- ** Recommend a five year life cycle

Recommended Lifecycle Replacements

Network and Hardware





Network Lifecycle

Recommend Life-cycle of 5-7 years on network infrastructure to avoid catastrophic failures.
These costs do not necessarily include installation.

<u>2019</u> <u>YR 0</u>	<u>2020</u> <u>YR 1</u>	<u>2021</u> <u>YR 2</u>	<u>2022</u> <u>YR 3</u>	<u>2023</u> <u>YR 4</u>	<u>2024</u> <u>YR 5</u>
APs 1:1 at all locations DR - SBOMCHS Server software update	Wireless APs - (SBO, MPS) Wireless Controller - MPS Switches - MPS, Bus Shop UPS - MPS Mstone Server - All Schools	Firewall - SBO Switches - (SBO, MCHS) Wireless APs - (MCHS, WMS) Wireless Controller - (WMS, MCHS) UPS - SBO, MCHS	Switches - WMS Wireless APs - (WYES, B&G) Wireless Controller - WYES UPS - WMS XTM Firewall - MCHS	Switches - WYES, B&G Wireless Controller - SBO UPS - WYES, B&G ESX HOST 1 - SBO	Server Software Update Backup switches- All locations ESX HOST 2 - SBO ESX HOST 3 - SBO
	<u>Annual Cost = \$62,800</u>	<u>Annual Cost = \$161,900</u>	<u>Annual Cost = \$72,650</u>	<u>Annual Cost = \$58,050</u>	<u>Annual Cost = \$48,000</u>



User Hardware Life Cycle

Staff & Student
Computers

iPads

Projector

Document
Cameras

	<u>2019</u> <u>YR 0</u>	<u>2020</u> <u>YR 1</u>	<u>2021</u> <u>YR 2</u>	<u>2022</u> <u>YR 3</u>	<u>2023</u> <u>YR 4</u>
Staff & Student Computers	<u>Student Computers</u> 300 Chromebook - WMS 30 Chromebook - CTE <u>Staff Computers</u> 42 HP Probook - WMS <u>Annual Cost = \$122,400</u>	<u>Student Computers</u> 108 Chromebook - WMS 108 Chromebook - MCHS 25 Chromebook - CTE 25 Laptop - CTE <u>Staff Computers</u> 58 Laptops - MCHS 8 Laptops - SBO <u>Annual Cost = \$135,450</u>	<u>Student Computers</u> 108 Chromebook - WYES 108 Chromebook - MCHS 50 Chromebook - CTE 25 Desktop - MPS 26 Desktop - CTE <u>Staff Computers</u> 42 Laptops - MPS <u>Annual Cost = \$</u>	<u>Student Computers</u> 108 Chromebook - WMS 108 Chromebook - WYES 108 Chromebook - MCHS 25 Desktop - MPS 55 Chromebook - CTE <u>Staff Computers</u> 36 Laptops - WYES <u>Annual Cost = \$</u>	<u>Student Computers</u> 108 Chromebook - WMS 108 Chromebook - WYES 108 Chromebook - MCHS 26 Desktops - CTE <u>Staff Computers</u> 42 Laptops - WMS <u>Annual Cost = \$</u>
iPads	<u>Student iPads</u> 125 iPads - MPS <u>Annual Cost = \$31,250</u>	<u>Student iPads</u> 100 iPads - WYES <u>Annual Cost = \$25,000</u>	NA	NA	<u>Student iPads</u> 50 iPads - MPS <u>Annual Cost =</u>
Projector	NA	NA	<u>Projectors</u> 15 Standard - All locations <u>Annual Cost = \$15,000</u>	<u>Projectors</u> 15 Standard - All locations <u>Annual Cost = \$15,000</u>	<u>Projectors</u> 15 Standard - All locations <u>Annual Cost = \$15,000</u>
Document Cameras	NA	<u>Document Cameras</u> 25 Devices (MPS) <u>Annual Cost = \$15,000</u>	<u>Document Cameras</u> 25 Devices - All locations <u>Annual Cost = \$15,000</u>	<u>Document Cameras</u> 25 Devices - All locations <u>Annual Cost = \$15,000</u>	<u>Document Cameras</u> 25 Devices - All locations <u>Annual Cost = \$15,000</u>

\$153,650

\$175,450

\$182,600

\$173,950

\$154,700



5 Year Life Cycle Costs

	Year 1	Year 2	Year 3	Year 4	Year 5
Network	\$62,800	\$161,900	\$72,650	\$58,050	\$48,000
Hardware	\$175,450	\$182,600	\$173,950	\$154,700	\$171,675
Total	\$238,250	\$344,500	\$246,600	\$212,750	\$219,675

- ** This does not complete the life cycle as this only runs five years
- ** This only shows total costs - not revenues
- ** CTE included
- ** Year 5 hardware is average of years 1-4. That final number is yet to be determined.

Anticipated Funding Sources (FY19)

E-Rate, VPSA, Perkins, Security Grant





VP SA & Perkins

Funding Source	Year 1	Year 2	Year 3	Year 4	Year 5
VP SA	\$184,800	\$184,800	\$184,800	\$184,800	\$184,800
Perkins	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000
Lease Purchase	\$0	\$0	\$0	\$0	\$0

Current Technology Budget is only \$1,014,000 over five years to accomplish **\$1,261,775** worth of lifecycle replacement. Much of what has been put in place for iPads, projectors, document cameras, and computers was put into place with one time grant funds.
Current infrastructure and classroom setups not sustainable at current level



E-Rate Funding (Change Summary)

Changes Summary

E-Rate has changed and it WILL have impacts on our Telecommunications and Infrastructure funding
Focus will shift from traditional services (Cellular, PRI & POTS, Internet Access) to Internet access and bandwidth

Services that go away in 2015-2016 - paging, web hosting, email, voicemail services (NO IMPACT TO US)

Services that will go away in 2018-2019 is Cellular, Local, long distance, and PRI lines - (THIS WILL HAVE A LARGE IMPACT ON US OVER NEXT 5 YEARS)

Services will continue to focus on WAN and there may be money available for Category 2 services

Category 2 services that are eligible:

- Wireless APs
- Cabling and connectors
- Caching
- Firewalls
- Switches
- Routers
- Racks
- UPS
- Standard 3 year warranties
- Basic Maintenance of these items



E-Rate Funding (Category 2)

Amount allowed for Category 2 services is according to Enrollment and F/R discount percentage. According to Education Consortium the POTENTIAL reimbursement rates based on historical enrollment are as follows:

Num	School	Enrollment	F/R Count	Five Year Budget
1	MPS	394	176	\$59,100
2	WYES	380	162	\$57,000
3	WMS	425	207	\$63,750
4	MCHS	541	204	\$81,150
	Totals	1740	749	\$209,700

**Please note that this does not mean that we will get this funding

**These numbers are based on a F/R of 41.27% and 70%

**We need to have a plan ready each year if we hope to receive any funding



Security Grant

Details:

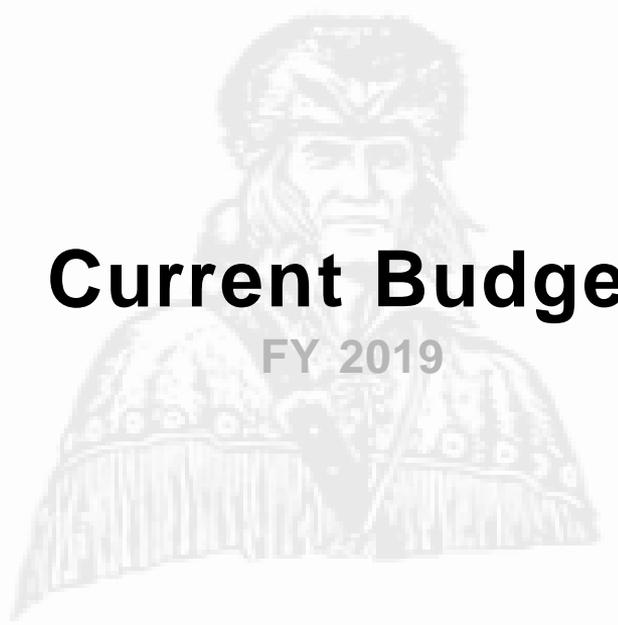
Grant has maximum of \$100,000 with a \$25,000 required local match

Grant can fulfill some of our Security CIP needs

Security Grant Project:

Additional camera coverage – All locations

Upgrade camera servers – All locations



Current Budget

FY 2019



Current Budget (FY19)

Line	Amount
Purchased Services - 3000	\$32,862.00
Telecommunications - 5001	\$80,100.00
Software - 6040	\$111,567.00
Hardware Lease - 6050	\$50,000.00
Hardware Replacements - 8110	\$100,000.00
Infrastructure Replacements - 8120	\$84,800.00
Total	\$459,329.00

** Does not include personnel line

** Lines 6050, 8110, and 8120 are fixed

Technology Capital Improvement Projects

Projects Outside of Normal Scope





Technology CIP

Background:

- Currently there isn't a CIP budget for technology related items
- This line is for projects that are out of the normal scope or additions to current architecture/capabilities

Currently Needed Items:

Network cabling for MPS renovation

Other Items:

Fiber to Football Field/Field House