



SMART SCHOOLS INVESTMENT PLAN UPDATE
MIDDLE COUNTRY CENTRAL SCHOOL DISTRICT
DISTRICT ALLOCATION = \$8,318,342
June 10, 2018 - “Computers & Security”

Introduction and Rationale

“Our students are at the center of everything we do. As educators, our foremost goal is to prepare them for their future.” - International Society for Technology in Education

The International Society for Technology in Education (ISTE) provide an internationally recognized set of standards that describe the skills and knowledge students, teachers and administrators need to learn, teach, and plan for respectively, to live productively in an increasingly global and digital society. Every piece of technology that is purchased by the Middle Country Central School District is scrutinized against these standards to provide the best learning resources for our students to increase student achievement.

In addition to project(s) listed in this Smart Schools Investment Plan, possible District projects that may be funded by the NYS Smart Schools investment plan include a structured SMART Board replacement plan, and a student desktop replacement plan vs. desktop virtualization.

Middle Country Central School District is in a good financial position. In addition to available Smart School funds, the district recently passed a local bond which contained a number of technology projects. In addition, the district also has federal money available to us via E-Rate. Current District projects that were already in progress are listed in our District Technology Plan, but the District is currently evaluating options with regard to using budget, District bond, E-Rate, and Smart Bond funds. This is done to maximize the value for the tax payers of the Middle Country Central School District. This is supported by New York State, who approve of the leveraging of as many resources as are available for these purposes.

Classroom Learning Technology

2019-2020 Fourth and 10th Grade 1:1 Chromebooks and Grades 1-3 Classroom Set

To Be Presented to BOE on 6/20/2018 – Approval on 7/11/2018

The purchase of 1800 Chromebooks will provide fourth and possibly tenth grade students with Chromebooks in the 2019-2020 school year.

Description	Quantity	Unit Price	Ext. Price
HP Chromebook 11 G6 EE - 11.6" Celeron N33350 - 4 GB RAM - 16 GB SSD	1800	260.00	\$468,000.00
Electronic HP Care Pack Pick-Up and Return Service with Accidental Damage Protection	1800	61.40	\$110,520.00
Google Chrome Management Console License	1800	30.00	\$54,000.00
GoGuardian License	1800	10.50	\$18,900.00
		Total	\$651,420.00

In addition, Middle Country plans to provide a classroom set of 15 Chromebooks to each classroom, Grades 1-3, and one for each teacher. Middle Country currently supports 81, grade 1-3 classrooms districtwide.

Description	Quantity	Unit Price	Ext. Price
HP Chromebook 11 G6 EE - 11.6" Celeron N33350 - 4 GB RAM - 16 GB SSD	1215	260.00	336,960.00
Electronic HP Care Pack Pick-Up and Return Service with Accidental Damage Protection	1215	61.40	79,574.40
Google Chrome Management Console License	1215	30.00	38,880.00
GoGuardian License	1215	10.50	13,608.00
Total			469,022.40

Rationale

Middle Country started its initial 1:1 program with 5th grade students taking Chromebooks home during the 2017-2018 school year. As with the 5th grade students, the technology purchased supports student learning both inside and outside the classroom. Students will use web-based software to enhance skills, both to accelerate and/or remediate learning. They can conduct research, collaborate with peers both in Middle Country and around the world, solve problems, and create projects without being limited to the physical boundaries of time and space. This initial Chromebook program is in direct alignment with the work of the Middle Country Commission for Educational Advancement and will help to support students as they work towards their capstone projects.

"Middle and High School Lab Desktops and Elementary STEM Laptop Cart Computer Replacements"

To Be Presented to BOE on 6/20/2018 – Approval on 7/11/2018

The purchase of 330 desktop computers will cover the replacement of districtwide high school classroom and lab computers. The purchase of 325 laptops will enable us to replace currently existing laptop carts with 9 laptops in 10 buildings with new carts of 30 in all 10 buildings.

Rationale

Because the district lab computers support software with higher hardware requirements, these computers are replaced more often. As such, these computers will be repurposed to replace computers at the middle school and elementary level.

Description	Price	Qty	Ext. Price
Desktops for Middle and High School Labs HP EliteDesk G3 w/ 5-year warranty	\$450	800	\$360,000.00
Desktops for an additional CAD/Media Lab at each High School HP EliteDesk	\$800	80	\$64,000.00
Laptops for Elementary STEM Labs HP Probook 440 G5 w/ 3-year warranty	\$500	325	\$162,500.00
Total:			\$586,500.00

Network Storage

To Be Presented to BOE on 6/20/2018 – Approval on 7/11/2018

An HPE Nimble Storage area network (SAN) to be provided and installed by Vandis.

Description	Price	Qty	Ext. Price
HPE Nimble Storage HF20/20C Hybrid 84TB Flash Array	\$82,071.72	1	\$82,071.72
		Total:	\$82,071.72

Rationale

Middle Country Central School District's current primary storage area network (SAN) is a 42TB NetApp, purchased in 2013. It is housed in our district MDF. Middle Country Central School District's current backup storage area network (SAN) is a 72TB Nimble, purchased in 2016. It is housed in our disaster recovery site. It is responsible for District data storage and backups. In an era of multimedia learning environments and specialized content, data storage is instrumental for high quality instruction, continuous improvement, and effective communications. These multimedia learning environments include courses from Technology, Art and Music, as well as video clubs in each high school.

Non-Public Schools in District Allocation – July 2018

Nonpublic Classroom Technology Loan Calculator

The Smart Schools Bond Act provides that any Classroom Learning Technology purchases made using Smart Schools funds shall be lent, upon request, to nonpublic schools in the district. However, no school district shall be required to loan technology in amounts greater than the total obtained and spent on technology pursuant to the Smart Schools Bond Act and the value of such loan may not exceed the total of \$250 multiplied by the nonpublic school enrollment in the base year at the time of enactment.

See: http://www.p12.nysed.gov/mgtserv/smart_schools/docs/Smart_Schools_Bond_Act_Guidance_04.27.15_Final.pdf.

All districts with nonpublic students attending school within their boundaries must fill out the following table to determine the required nonpublic Classroom Educational Technology loan amount.

How to Determine Your Nonpublic Loan Amount:

1. Enter your total budgeted sub-allocation in this SSIP for the Classroom Educational Technology category. Include the amount to be loaned to nonpublic schools in your district.
2. Enter your total district public school enrollment for 2014-15.
3. Enter the total number of nonpublic students attending any school within your district boundaries for 2014-15. http://www.p12.nysed.gov/mgtserv/smart_schools/NP_DistOfAttend-2014-15.xlsx
4. Add Columns 2 and 3 together to arrive at your total pupil count.
5. Divide Column 1 by Column 4 to calculate a per-pupil SSBA Classroom Educational Technology amount. **Note: This amount may not exceed \$250.**
6. Multiply Columns 3 and 5 to derive the total nonpublic loan amount your district must make available to all nonpublic schools within your district. (If Box 5 is greater than \$250, the statutory maximum); multiply Column 3 by \$250 and enter in box 6.)

Nonpublic Loan Calculator	1. Classroom Technology Sub-allocation	2. Public Enrollment (2014-15)	3. Nonpublic Enrollment (2014-15)	4. Sum of Public and Nonpublic Enrollment	5. Total Per Pupil Sub-allocation	6. Total Nonpublic Loan Amount
Calculated Nonpublic Loan Amount	1,789,014	10,177	174	10,351	173	30,102

Classroom Learning Technology – Previously Submitted

“Fifth and Sixth Grade 1:1 Chromebook Rollout”

Submitted to NYSED for Approval on 11/3/2017

Initial 1:1 Chromebook program with fifth and sixth grade students.

The purchase of 2100 Chromebooks will provide fifth and sixth grade students with Chromebooks in the 2017-18 school year, as well as provide for incoming fifth grade students in the 2018-19 school year.

Description	Quantity	Unit Price	Ext. Price
HP Chromebook 11 G5 - 11.6" Celeron N3060 - 4 GB RAM - 16 GB SSD	2100	252.36	\$529,956.00
Electronic HP Care Pack Pick-Up and Return Service - extended service agreement	2100	31.00	\$65,100.00
Google Chrome Management Console License	2100	30.00	\$63,000.00
GoGuardian License	2100	10.50	\$22,050.00

Total			\$590,646.00
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Rationale

As Middle Country starts its initial 1:1 program with students taking Chromebooks home, the technology purchased supports student learning both inside and outside the classroom. Students will use web-based software to enhance skills, both to accelerate and/or remediate learning. They can conduct research, collaborate with peers both in Middle Country and around the world, solve problems, and create projects without being limited to the physical boundaries of time and space. This initial Chromebook program is in direct alignment with the work of the Middle Country Commission for Educational Advancement and will help to support students as they work towards their capstone projects.

School Connectivity

"Phase 2 Wireless to High School"

To Be Presented to BOE on 6/20/2018 – Approval on 7/11/2018

Initial 1:1 Chromebook program with fifth and sixth grade students. This also includes starting phase two of the district wireless network expansion, which amounts to increasing access point density in the required areas, i.e. an access point every other classroom to an access point in every classroom.

Description	Quantity	Unit Price	Ext. Price
Aruba - Access Points and Licensing			265,860.00
Aruba - Mounting Kit Options			11,400.00
Total			277,260.00

Rationale

The purchase of addition Aruba wireless controllers and access points will mark the beginning of phase two of Middle Country's wireless network build out. In short, phase one provided for a rough coverage in every instructional building. This equated to approximately an access point in every other classroom. With phase 2, access point density will be increased to an access point in every fifth grade classroom, as well as an access point in each middle school classroom.

"Districtwide IDF Edge Switch Replacement"

To Be Presented to BOE on 6/20/2018 – Approval on 7/11/2018

Replacing all remaining IDF edge switches with current, manufacturer supported equipment.

With the exception of the Computer Center, each IDF installation will include one each of the following:

- OS6450-P48-US, OS6450-XNI-U2 stacking module, OS6450-CBL-60 stacking cable and 1-year support
- OS6450-SW-PERF: Performance Software License allowing the 2 fixed SFP+ ports to Operate at 10Gig

And as many of the following as necessary to replace existing switches:

- OS6450-48-US Gigabit Ethernet chassis in a 1U form factor with 48 10/100/1000 Base T ports
- 1 Year Support Software for OS6450

All switches will include 24x7 Remote Telephone Support, 24x7 remote Problem Diagnosis.

Description	POE	NON-POE
Computer Center	3	4
Dawnwood Middle School	3	14
Centereach High School	7	14
Newfield High School	9	12
Eugene Auer	2	5
Oxhead	2	5
Holbrook Road	3	3
Unity Drive	2	5
Stagecoach	3	6
Hawkins Path	3	3
New Lane	4	14
North Coleman	3	6
Selden Middle School	8	10
Jericho	3	6
Bicycle Path	3	5
Transportation - Connection to Special Education, Buildings and Grounds, Central Registration and Data Services	4	4
Total Switches	62	116
Switch Cost	\$ 2,200.00	\$ 1,615.00
Switch Sub-Total	\$ 136,400.00	\$ 187,340.00

Total	\$ 323,740.00
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Rationale

The current switches that are installed in each building's MDF are at end-of-support as of March 2017. Building on the Middle Country Central School District Bond project where all district data closets were upgraded to switches capable of supporting 20 Gbps connections between data closets (Phase 1), this installation would replace the remaining switches in each MDF to equipment covered by support and capable of supporting higher-speed communication between switches (Phase 2).

The switches that are removed from the MDF closets will be used to support the remaining switches in the all of the district IDF closets, until they are replaced in the next phase (Phase 3).

School Connectivity – Previously Submitted

"Fifth and Sixth Grade 1:1 Chromebook Rollout"

Submitted to NYSED for Approval on 11/3/2017

Initial 1:1 Chromebook program with fifth and sixth grade students. This also includes starting phase two of the district wireless network expansion, which amounts to increasing access point density in the required areas, i.e. an access point every other classroom to an access point in every classroom.

Description	Quantity	Unit Price	Ext. Price
Aruba - AoS8 Mobility Master			\$ 11,322.65
Aruba - 7220 Controller			\$ 16,495.65
Aruba - Alcatel License Migration			\$ 29,250.00
Aruba - Access Points and Licensing			\$ 265,860.00
Aruba - Mounting Kit Options			\$ 11,400.00
Total			\$ 334,328.30

Rationale

The purchase of addition Aruba wireless controllers and access points will mark the beginning of phase two of Middle Country's wireless network build out. In short, phase one provided for a rough coverage in every instructional building. This equated to approximately an access point in every other classroom. With phase 2, access point density will be increased to an access point in every fifth grade classroom, as well as an access point in each middle school classroom.

"Districtwide MDF Switch Replacement"

Submitted to NYSED for Approval on 10/20/2017

Replacing all remaining MDF switches with current, manufacturer supported equipment.

With the exception of the Computer Center, each MDF installation will include one each of the following:

- OS6450-P48-US with US power cord, OS6450-XNI-U2 stacking module, OS6450-CBL-60 stacking cable and 1 Year SUPPORT Software
- OS6450-SW-PERF: Performance Software License allowing the 2 fixed SFP+ ports to Operate at 10Gig
- SFP-10G-C1M: 10 Gigabit direct attached copper cable (1m, SFP+)

And as many of the following as necessary to replace existing switches:

- Gigabit Ethernet chassis in a 1U form factor with 48 10/100/1000 Base T ports
- OS6450-XNI-U2: Optional 10 Gigabit SFP+ module
- OS6450 60 Centimeters long SFP+ direct stacking cable
- 1 Year Support Software for OS6450

All switches will include 24x7 Remote Telephone Support, 24x7 remote Problem Diagnosis.

Description	Ext. Price
Computer Center	10,956.00
Dawnwood Middle School	12,173.00
Centereach High School	7,003.00
Newfield High School	7,003.00
Newfield High School - Computer Center	6,388.00
Eugene Auer	8,868.00
Oxhead	10,733.00
Holbrook Road	10,733.00
Unity Drive	10,733.00
Stagecoach	8,868.00
Hawkins Path	8,868.00
New Lane	12,189.00
North Coleman	7,003.00
Selden Middle School	10,733.00
Jericho	8,868.00
Bicycle Path	7003.00
Transportation - Connection to Special Education, Buildings and Grounds, Central Registration and Data Services	96.00
Total	\$ 148,218.00

Rationale:

The current switches that are installed in each building’s MDF are at end-of-support as of March 2017. Building on the Middle Country Central School District Bond project where all district data closets were upgraded to switches capable of supporting 20 Gbps connections between data closets (Phase 1), this

installation would replace the remaining switches in each MDF to equipment covered by support and capable of supporting higher-speed communication between switches (Phase 2).

The switches that are removed from the MDF closets will be used to support the remaining switches in the all of the district IDF closets, until they are replaced in the next phase (Phase 3).

“Districtwide Internal Building Fiber Optic Cable”

Submitted to NYSED 9/23/2016 – Approved 7/14/17

Supply and install 12 strand multimode 50 micron armored fiber from all instructional building MDFs to all building IDFs. The fiber will be terminated at both ends using LC type connectors in a rack mount fiber termination box. This fiber optic cable will support up to 40 Gbps interconnects between District data closets, but will initially be lit at 10.

Materials used will include:

- 12 Strand Armored 50 Micron Multimode Fiber
- Rack Mount Fiber Termination Boxes
- LC Type Connectors
- Fiber Adaptor Plates

Description	Ext. Price
Dawnwood Middle School (2 IDFs & connection to DAO – Approximately 1460’ of fiber)	\$11,372.00
Centereach High School (7 IDFs & connection to DMS – Approximately 3805’ of fiber)	\$39,205.00
Newfield High School (7 IDFs – Approximately 2480’ of fiber)	\$28,691.00
Eugene Auer (1 IDF – Approximately 410’ of fiber)	\$3,332.00
Oxhead (1 IDF – Approximately 330’ of fiber)	\$2854.00
Holbrook Road (2 IDFs – Approximately 605’ of fiber)	\$13,079.00
Unity Drive (1 IDF – Approximately 330’ of fiber)	\$6,704.00
Stagecoach (2 IDFs – Approximately 760’ of fiber)	\$10,156.00
Hawkins Path (2 IDFs – Approximately 630’ of fiber)	\$13,228.00
New Lane (2 IDFs – Approximately 595’ of fiber)	\$5,319.00
North Coleman (2 IDFs – Approximately 720’ of fiber)	\$9,917.00
Selden Middle School (7 IDFs – Approximately 2240’ of fiber)	\$31,108.00

Jericho (2 IDFs – Approximately 575’ of fiber)	\$31,108.00
Bicycle Path (2 IDFs – Approximately 840’ of fiber)	\$6,784.00
Transportation - Connection to Special Education, Buildings and Grounds, Central Registration and Data Services - (3 IDFs)	\$28,729.00
Total	\$219,627.00

Rationale

The current fiber optic cable that is installed intra-building between main distribution frame (MDF) closets and intermediate distribution frame (IDF) closets was installed approximately 16 years ago. This fiber optic cable has a maximum bandwidth capability of only 1 Gbps. With District support services, District educational supplemental resources and State testing increasingly moving to being internet-based—as well as systems that were traditionally on parallel, separate systems (i.e. security and voice) transitioning to sitting on the common data network—the new fiber will we be able to support all of these services. This system will also support the bandwidth requirements of the Smart Schools Bond, as well as any additional network requirements deemed necessary by a wireless expansion or potential 1:1 program.

High-Tech Security

Security and Communications

To Be Presented to BOE on 6/20/2018 – Approval on 7/11/2018

Description	Quantity	Unit Price	Ext. Price	Description
Security Screening Software and ID Card/Badge System				\$370,000
Student Validation and Access System				\$325,000
Digital Camera Network & Cameras				\$1,100,000
Access & Door Hardening, Control Systems Vestibule Technology				\$980,000
New UPK Entrance Vestibules	3		\$50,000	\$150,000
VoIP Communications and Alert System				\$790,000
Total				\$3,715,000

Rationale

The District’s security and technology network has exceeded its life cycle. Legacy hardware and software are deteriorating, antiquated, low functioning compared to contemporary systems, and are no longer cost-effective to maintain. The purchase of a multi-faceted security network and peripherals will substantially update the district’s safety program consistent with current standards and in connection

with guidance and partnership from the Suffolk County Police Department, NY State Emergency Management Office, NYSED guidance, and the school insurance standard of care, including the contemporary capability to integrate security systems with local emergency management and law enforcement support.

Smart Schools Investment Plan Summary

District Allocation	\$	8,318,342.00
School Connectivity Sub-Allocation	\$	1,303,173.30
Classroom Learning Technology	\$	2,409,762.12
High-Tech Security	\$	3,715,000.00
Unallocated Funds	\$	890,406.58

Sub-Allocation Summaries

School Connectivity Sub-Allocation Summary		
Computers and Security Submittal	\$	601,000.00
Initial 1:1 and Wireless Submittal	\$	334,328.30
MDF Switch Replacement Submittal	\$	148,218.00
Fiber Submittal	\$	219,627.00
Total	\$	1,303,173.30

Classroom Learning Technology Summary		
Computers and Security	\$	1,819,116.12
Initial 1:1 and Wireless	\$	590,646.00
Total	\$	2,409,762.12

High-Tech Security		
Computers and Security	\$	3,715,000.00
Total	\$	3,715,000.00