

NEWBURGH ENLARGED CITY SCHOOL DISTRICT

**NEW YORK STATE SMART SCHOOLS BOND ACT
PRELIMINARY INVESTMENT PLAN
2015-2018**



PUBLIC HEARING ON SMART SCHOOLS BOND FUNDING

There will be a Public Hearing on Smart Schools Bond Funding at the Board of Education Meeting, May 10, 2016 at 7:00 p.m. at the Board of Education Auditorium

News Date: March 29, 2016

We encourage our community to submit written comments on the NECSD Preliminary Proposed Plan, please email:

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PLAN OVERVIEW

In January 2014, Governor Andrew M. Cuomo called for New York State to invest \$2 billion in its schools through a Smart Schools Bond Act (SSBA). Voters approved the Smart School Bond Act in November 2014 and as a result the Newburgh Enlarged City School District was allocated to receive \$12,831,056. In alignment with the goals set by the Newburgh Enlarged City School District 2015-2018 Technology Plan, adopted by the District, the Smart Schools Investment Plan will utilize the SSBA funding allocation in the following instructional technology priorities:

- Upgrade NECSD network infrastructure
- Expand the NECSD wireless equipment in place
- Refresh uninterrupted power supply
- Provide for instructional devices and classroom technology

In collaboration with the NECSD District Wide Superintendent's Committee for Technology, and in consultation with groups of District Administrators, Teachers, Students, Parents, and Community Members located within the Newburgh Enlarged City School District geographic boundaries, and aligned with the NECSD 2015-2018 Technology Plan, this three-year investment plan has been drafted to focus this funding on the Smart Schools Bond Act allowable expenditures that include:

- School Connectivity
- Classroom Technology
- High-Tech Security Features

PRECONDITIONS

All New York State public school districts are required to complete and submit a District Instructional Technology Plan survey to the New York State Education Department in compliance with Section 753 of the Education Law and per Part 100.12 of the Commissioner's Regulations. Districts that include investments in high-speed broadband or wireless connectivity and/or learning technology equipment or facilities as part of their Smart Schools Investment Plan must have a submitted and approved Instructional Technology Plan survey on file with the New York State Education Department (NYSED). The Newburgh Enlarged City School District submitted their required Instructional Technology Plan survey to NYSED in September 2015 and was approved in October 2015.

As established by the Smart Schools Bond Act Guidance, as a precondition to utilizing the SSBA funds the District has to ensure there is adequate Internet bandwidth to further expand wireless connectivity for classrooms, additional technology devices for classrooms. The minimum adequate Internet bandwidth is 100Mbps per 1,000 students to support the inclusion of additional learning technology devices for the classroom.

NECSD has a managed fiber system between buildings in our school district's wide area network which provides capabilities of up to 10 Gigabit of interconnectivity. However, currently NECSD is using only 1 Gigabit between sites for district interconnectivity. The Smart Schools Bond funding will provide for important upgrades to the NECSD network infrastructure allowing increased connectivity to 10 Gbps.

PLAN GOALS

The Newburgh Enlarged City School District Smart Schools Bond Act Funding goals aligns with the District's 2015-2018 Technology Plan that includes:

Goal 1: Digital Convergence: An overarching goal of our Digital Convergence Initiative is to maximize the learning potential of all students in an effort to prepare them for a successful future as 21st century citizens. The plan is to bring together different technologies – mobile devices, interactive whiteboards, streaming media, and digital content – to enhance student learning, by increasing student engagement and student technology literacy.

POLICIES

Policies established in this plan will reflect Newburgh's transition to 21st century teaching and learning.

ROBUST DIGITAL INFRASTRUCTURE

To provide access to all scholars, the District seeks to enhance and expand advanced infrastructure systems for communication, computing, and networking throughout Newburgh Enlarged City School District. The establishment of a robust infrastructure will provide enhanced connectivity for students, staff, and parents; increased security; and continuity of operations in the event of an emergency

DIGITAL CURRICULA

Digital curricula maintain cost-effective, current and up-to-date information and provides universal access for all. Moving towards a digital curriculum will allow our district provide more flexibility in how students can take courses and classes.

Goal 2: Students: Through the meaningful integration of technology in all levels of curriculum, instruction and assessment, the Newburgh learning community will engage in deep learning and acquire 21st century skills necessary to become leaders beyond Academy Field.

Many advanced technologies will be introduced within the district that will give creative teachers many more options to enrich the curriculum, open windows to new educational experiences, and engage students in exciting new ways. While teachers will always be our "best App", technology-based instructional tools are valuable for infusing real-world learning experiences into the daily curriculum, an important part of the strategy articulated in Vision 2020.

KEY TECHNOLOGY-BASED INSTRUCTIONAL TOOLS:

MICROSOFT OFFICE 365

Office 365 for Education enables students to collaborate with peers and access homework and resources from any internet-capable device during and beyond the school day. Teachers and students can create websites to organize and showcase learning. High school students can also create independent research and visual arts portfolios online to share with potential colleges and employers. This productivity tool is a step towards universal access for all scholars.

BYOD (BRING YOUR OWN DEVICE)

In the future, after careful planning and preparation a BYOD policy will become a reality in Newburgh. A bring your own device (BYOD) policy would allow students and staff to use personal devices for NECSD–approved activities and connect to the Internet for approved instructional activities. Students and staff will reap a number of benefits, including ease in completing assignments and accessing online resources that enhance classroom content; an increase in student engagement, autonomy, and responsible use of technology in school; and a decreased need for printed instructional materials.

DIGITAL EDUCATION

Digital Education enhances traditional instruction with digital content, combines blended and online instruction to promote anywhere, anytime learning, and enables students to extend learning through advanced and college-level courses. NECSD will offer a selection of digital course options, which mix in-person and online coursework to give students the dual advantage of individualized interaction with the teacher and the flexibility to progress at an individual pace. These programs will accommodate different learning styles and allow much broader access to specialized course material.

ADAPTIVE TECHNOLOGIES

Adaptive technologies can be transformative for many NECSD students who have developmental disabilities or other special needs. Technologies can be used both for accessing curriculum and supporting communications and to help students thrive in the least restrictive educational environment. Teachers will match any of a wide variety of technology tools to accommodate individual needs.

In Newburgh our teachers are in a range of special education programs, with most in special class and co-teaching models. With the special education professional in the classroom there are additional opportunities for targeted instruction and the development of strategies to assist all students in learning. There has been some instructional support for special education students in the area of technology. Some inroads have been made with making technology accessible to special education students such as providing Microsoft One Note, apps to strengthen understanding, collection of data, and the development of content. Equitable access can be time and place for our students. Many of our resources and instruction can be accessed in the cloud through Microsoft Office 365 making it flexible.

We enlist the services of Orange Community College to provide assistive technology assessments for our students with disabilities and those on a 504. Additional relationships have begun with AT providers who have extensive knowledge with special education solutions related to specific disabilities in learning and autism. General and special education teachers work together to modify curriculum and develop instructional strategies for success based on individuals. The assessment will address these issues and make recommendations. This plan gives us the ability to consider almost any device as we rebuild wireless to an

enterprise level and improve bandwidth. Many of these opportunities require access to different web based resources. We have begun to utilize Bookshare which gives our learning disabled and visually impaired students access to digital content through the web. Audio books, online courses, and iPad technology are all connected to the web. Our infrastructure plan will build capacity to give our students great access to what is needed rather than what we can accommodate. Our intent is to move the obstacles out of the way so we can make informed decisions without roadblocks.

NAVIANCE

Naviance is already being used to empower middle and high school students to take ownership of their own learning, by choosing a direction they want to follow and creating a plan. Students, school counselors, and parents can access the web-based platform to identify colleges and careers that align with each student's interests and goals. Self-discovery activities and lessons help students navigate their personal, career and academic goals.

Goal 3: Staff:

ENGAGING INSTRUCTION

The Newburgh Enlarged City School District Plans to develop a 21st Century setting where educators will deliver technology-rich instruction. This will support evolving student learning and will include online and connected learning. Technology-rich teaching practices will ultimately lead to improvements in student success and create broader understanding of the skills that comprise success in a digital age.

PROFESSIONAL LEARNING

To accomplish this goal, NECSD will provide ongoing staff development and coaching to encourage and support professional competencies for 21st century skills & deeper learning. By expanding access to high-quality, ongoing, job-embedded opportunities for professional growth for teachers, administrators, and other education professionals, we will offer teachers and administrators vast new opportunities to collaborate, learn, share, and produce best practices with colleagues in school buildings across the country.

Goal 4: Families and the Community: The District is dedicated to seeking out and fostering external partnerships that support technology enhancements. A world-class educational system cultivates the full participation, support and resources of families and community partners.

As it relates to technology, NECSD will seek community partnerships that include formal and informal local and global community connections, collaborative projects, and relationships that advance the school's learning goals. Digital communications, online communities, social media, and digital learning environments often serve as connectors for these partnerships.

A goal of this initiative will be to develop and sustain educational programs supported by advanced technology systems provided in conjunction with community and government partners.

Specifically, the District's Smart Schools Bond Act funding allocations will focus on:

- Expanding NECSD network Infrastructure to upgrade connectivity and speeds (Bandwidth) between NECSD schools out to the Internet
- Expanding current WiFi infrastructure for WiFi access points for all classrooms

- Expanding devices for NECSD Classrooms
- Expanding NECSD High-Tech Security Features
- Providing devices for Non-Public Schools as required by Smart Bond

PURCHASE PLAN & ALLOCATION OF FUNDS

To prepare Newburgh for the transformative changes called for in Vision 2020, it is critical to first address problems with the current network. What types of devices, how many we purchase, etc. are insignificant if our wireless network cannot handle the digital, technological, and creative needs of today's teaching and learning practices. Newburgh must focus on providing a robust, converged network infrastructure including voice, data, video and a wireless communications network throughout the district. The network infrastructure must provide flexibility, mobility, and secure access to students, teachers, administrators, schools operations, schools services staff and the community.

The Newburgh Enlarged City School District is committed to the development of curriculum, teacher expertise and assessment to develop the appropriate 21st century skills that our scholars must acquire to become global citizens. Newburgh is committed to the development of our students' technological literacy skills through the use of research-based strategies that integrate technology into curriculum, instruction and assessment. Shifting towards student centered learning opportunities where teachers are facilitators of learning will occur. Lesson planning will gradually shift from focusing from teacher delivery of content to designing collaborative inquiry based projects that tap into cross-curricular content, abstract concepts and learning in meaningful ways. We will develop engaging assessments and make the most of collaborative online spaces.

Technology will be used to support instruction, reinforce student skills, provide alternative instructional methodologies for teaching and learning, and foster internet safety and digital literacy. This will ensure that the students develop the 21st Century technological literacy skills necessary to meet both national and New York State standards. Technology resources will support the delivery of instruction according to individual student learning needs and assist teachers with the development and delivery of assessments, and the organization and analysis of assessment data.

The NECSD supports a technology network of over 13,000 users. Under current funding resources for technology equipment, that include District technology department yearly budget allocations, e-Rate funding, and any grant funding available, we are fiscally unable to move as rapidly as we would like to equip all schools with wireless technology and devices in all classrooms, as desired District-wide. We would use the SSBA funds towards increasing the speed of our backbone to 10 gigabyte/sec throughput to prevent any bottleneck issues that might hinder performance.

We plan to meet the demand as quantified by industry standards of 25-35 students per access point by installing one high-speed gigabyte enabled wireless access point per classroom. Our average class size is between 20-30 students.

Due to the District's large allocation of funding, as well as the immediate need for improvements to the technology infrastructure, we have determined that it is advantageous to create phases for the maximization of the SSBA opportunity. As described above, Phase I will concentrate on ensuring the appropriate infrastructure. In alignment with the approved NECSD 2015-2018 District Technology Plan, the District plans to utilize Phase I SSBA funds as described below in Table 1 for the SSBA allowable expenditure Budget Category areas. Future phases will be planned and implemented under the guidance of the executive director of technology, a position that is currently being recruited.

TABLE 1: SSBA Allowable Expenditure Summary of \$12,831,056 by Budget Category

	Sub-Allocations
School Connectivity	\$2,471,650
Connectivity Projects for Communities	0
Classroom Technology	\$3,546,375
Pre-Kindergarten Classrooms	0
Replace Transportable Classrooms	0
High-Tech Security Features	\$4,012,500
Totals:	\$

The following information below summarizes the SSBA Budget Category in Table 1. for **School Connectivity**.

Phase I will also include the completion of a data center equipped with a generator, cooling, battery backup and redundant equipment. Some of the equipment for this project has been funded through e-Rate. We anticipate needing an additional \$1 million from Smart Schools Bond Act funding to complete this project. The planning for this is a work in progress.

Upgrade NECSD Network/Access Connections

Expand network Infrastructure at all NECSD schools to upgrade to 10 Gigabit switches, 10 Gigabit fiber uplinks between sites, server refresh, and upgraded UPS modules, along with network management and environmental monitoring for these new devices. This is designed to increase internet and network speeds between NECSD schools from 1 Gigabit to 10 Gigabit capacities.

Upgrade and Expand NECSD School Internal Connections and Components

Currently NECSD has a wireless network at all schools and Cisco wireless access points in every third classroom. We will be upgrading all current access points to the latest IEEE 802.11 standards, and expanding Cisco wireless components at all schools to include wireless access points for all classrooms, instructional areas, and other areas in the district.

Refresh Uninterrupted Power Supply

NECSD plans to refresh all UPS modules in each of the main wiring closets for all schools.

TABLE 2. SSBA Sub-Allocation Category: School Connectivity

SSIP #1: SSBA School Connectivity Projects for Schools	Sub-Allocation
Network/Access Costs <ul style="list-style-type: none"> • Upgrade NECSD Core Network Infrastructure, including servers • Expand NECSD Wireless Access for Classrooms • Uninterrupted Power Supply (*pricing subject to change) Stage 1 Buildings (complete upgrade) Balmville, Fostertown, Gardnertown, Gidney Avenue, Horizons, New Windsor, Vails Gate, West Street, Pre-K Center, Chestnut Street, Grand Street Stage 2 Buildings (partial upgrade) NFA North, South Middle, Heritage Middle, Temple Hill, Meadow Hill	\$1,768,350
Outside Plant Costs	0
School Internal Connections and Components	0
Professional Services	\$166,000
Testing	0
Other Upfront Costs	0
Other Costs	0
TOTALS	\$1,934,350.00

SSIP #2: SSBA School Connectivity Projects for Schools	Sub-Allocation
Network/Access Costs <ul style="list-style-type: none"> • Upgrade NECSD Core Network Infrastructure, including servers • Expand NECSD Wireless Access for Classrooms • Uninterrupted Power Supply (*pricing subject to change) Stage 3 Building Newburgh Free Academy	\$494,300
Outside Plant Costs	0
School Internal Connections and Components	0
Professional Services	\$43,000
Testing	0
Other Upfront Costs	0
Other Costs	0
TOTALS	\$537,300.00

The following information below summarizes the SSBA Budget Category in Table 1. for **Classroom Technology.**

The District plans to purchase Latitude 13 Education Series (3350) laptops to support early literacy through the iRead program. The District will pay for the software from the General Fund. This District-wide initiative will target all students in Kindergarten, First and Second grade. Each Dell Laptop features a 13.3" HD (1366x768) LED-backlit Touch LCD Panel, Intel Processor, 8 GB of Memory, Intel Dual-Band wireless capabilities and features a (13) hour battery. They can be added to the District's existing NECSD Microsoft Office 365 for Education CLOUD.

These units are allocated in groups of 8 per classroom (K,1,2) and will be charged and secured in Dell Mobile Computer carts. This technology has a proof-of-concept for portability, excellent durability, and successful integration into curriculum. In addition, we will need to use the funds to purchase headsets for each student device.

We will also use the same model in 6 classrooms in our middle schools for another Reading intervention program called Read 180. For each of these deployments we will use the SSBA funds to purchase charging cabinets for each classroom.

We plan to equip all active classrooms with interactive projectors and teacher laptops in alignment with our instructional technology plan.

According to Smart Schools Bond Act Guidelines located at:

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

NECSD is making every effort to provide for all children in the District based on the provisions by the SSBA guidance documents and regulations. Therefore, we have divided our purchase of classroom technology devices proportionally to the last BEDs reported enrollment for each of the Non-Public Schools located in the NECSD boundaries. *All Classroom Technology available to non-Public Schools is in the format of a loaning technology program. This will be available to the Non-Public Schools after fulfilling requirements in alignment with Smart Schools Bond Guidelines document and rules. Table 3. below reflects this.

**TABLE 3. SSBA Sub-Allocation Category: Classroom Technology
(EQUIPMENT OR DEVICES)**

Phase II	
SSBA Budget Category	Allocations
Classroom Learning Technology <ul style="list-style-type: none"> • 625 Interactive PROJECTOR W/WALL MT (i.e. interactive white board) includes all needed accessories and installation • 625 Dell Latitude 3350 for projectors • 1,024 Dell Latitude 3350 for K-2 iRead • 180 Dell Latitude 3350 for 6 Read 180 Classrooms at the middle schools • 1204 Avid On-Ear Headset with Microphone for the reading programs • 136 Ergotron Zip12 Charging Desktop Cabinet 	\$3,546,375
Classroom Technology:	\$122,000

Non-Public Schools Loaning Program for 448 Non-Public students x SSBA \$250.00* per student as required by SSBA	
TOTALS	\$3,547,597

The following information below summarizes the SSBA Budget Category in Table 1. for **High-Tech Security Features**

14 Buildings Campus Wide – including NFA Main, NFA North, GAMS, Heritage, Balmville, Fostertown, Gardnertown, Pre-K Center, Meadow Hill, South Middle, Horizons-on-the-Hudson, Temple Hill, Vails Gate

Security Cameras

- Replace all servers and the Video Management System
- This server & VMS Upgrade will allow for the incorporation of Ultra High MegaPixel Cameras such as 16MP and 30MP using specified varifocal lens for coverage more complete than PTZ cameras
- Replace all older technology analog cameras, retain all existing IP cameras
- Server storage capability increased to 30 days plus and the growth potential is unlimited
- Replacement of some PTZs with Ultra High MegaPixel Cameras – relocate PTZs as needed
- Installation of Megapixel Cameras for the interior & exterior of all schools with Ultra High MegaPixel Cameras used accordingly at most schools
- Provide detailed coverage of key areas such as the bus drop off and pick up
- Provide detailed coverage of loading docks & kitchen delivery areas
- Install MegaPixel Cameras with Analytics in some key areas
- Install (37) New Servers & Storage, 2,160TB
- Replace Analog Cameras – up to 40 w/ 3MP Cameras (NFA Main)
- Install 318 Interior cameras
- Install 179 exterior cameras varying from 5MP – 30MP Cameras
- Integrate All Existing PTZ and Fixed IP Cameras
- Provide (15) Video Workstations w/ 22” Monitors
- Provide (24) 24 Port PoE Switches
- Provide (14) Rackmount UPS

Access Control

- Install an Avigilon Access Control access control server in NFA Main Campus
- In each school install access control doors as needed for use by the staff using proximity readers and electric releasing hardware such as door strikes or electric hinges. This will allow for egress/ingress from the playground, athletic fields, etc.
- Provide proximity cards or keyfobs to each staff person with their card designating where they can go and when. This will provide for accurate information and records and is particularly useful for part time employees, coaches and contractors

- All other doors will have door contacts to monitor the door status for propped open or forced open generating an alarm in such instances
- If desired rooms such as IT closets or storage areas can have an access reader to know who has access or has tried to gain access
- The system will have lockdown capability by a workstation, smartphone, designated manual lockdown buttons in the main office or security office
- Install an IP intercom at all main location where one is not currently used. This camera will also be recorded on the server
- Install a Visitor Management System (Easy Lobby) at each school. This allows for an electronic record of visitors and can be used to know if someone is a felon, on the sex offender registry, or if they are the parent who is not supposed to pick up their child
- Install Avigilon Access Control Server
- Fourteen (14) Access Control Workstation
- 101 Access Control Doors – Includes Electronic Hardware
- Door Status Monitoring On All Other Exterior Doors
- Lock Down – Red Card Capability – All Schools
- Visitor Management System (Easy Lobby) – one at each school (14)
- Badging Printer w/ ID Camera & 2500 Proximity Cards (1) at NFA Main
- IP Intercom at each school – (14)

TABLE 4. SSBA Allocation Category: High-Tech Security Features

<i>SSBA High-Tech Security Features</i>	Sub -Allocation
Capital-Intensive Project (Standard Review)	0
Main Entrance Electronics Security System (Streamlined Review)	\$2,746,900
Main Entrance Entry Control System (Streamlined Review)	\$1,265,600
Approved Door Hardening Project (Streamline Review)	0
Other Costs	0
TOTALS	\$4,012,500

PROFESSIONAL DEVELOPMENT

Please note that Smart Schools Bond funds **may not** be used for professional development.

As technology becomes more widely available and continues to change, there is a compelling need to provide ongoing professional development to support educational reform goals, New York State standards

to model collaborative inquiry based learning and to guide staff toward incorporating the global infrastructure in instruction and productivity.

The Newburgh Enlarged City School District is dedicated to providing students with the technological skills to become productive members of an ever changing global society. In order to meet this goal, we must provide our district's staff with the skills necessary to implement best practices into their classroom. As a result, our overarching goal for professional development is:

“To continue to provide professional development to facilitate the use of technology as an integral tool to enhance teaching and learning.”

In order to achieve the goals in the NECSD 2015-2018 District Technology Plan, the district will focus on the following:

- Continue using the District's technology specialists as the primary source of ongoing and on-demand professional development for teachers, administrators, and support staff.
- Lead teachers will have opportunities to attend external conferences to incorporate new learning strategies that utilize technology to engage students.
- Teachers will also have opportunities to share “best practices” during internal professional development time.

TECHNICAL SUPPORT

Please note that Smart Schools Bond funds **may not** be used for technical support.

SUSTAINABILITY

In addition to the existing NECSD Technology Refresh plan in which the district budgets and allocates funds toward computers replacements, the District is committed to working upgraded and new devices purchased through the Smart Schools Bond Act into the existing equipment replacement cycle already in place. Each year, over the next 4 years, an allotment of funds will be budgeted for the normal repair costs of a percentage of the total devices. After (4) years the devices will be replaced and/or reallocated in order to ensure the equipment stays current and new technology is supported.

PROVISIONS AND DISTRIBUTION TIMELINE

Once the NECSD Smart Schools Bond Act Investment Plan is reviewed by the state education department and then approved by the Smart Schools Review Board, equipment will be purchased in accordance with the District's purchasing policies and budget cycles. Once equipment arrives the Technology Department Staff will prioritize inventory and provision of the equipment in accordance with our multiyear plan. Based on proposed quantities, equipment should be in place and operational within 60-90 days after it arrives. Projects are prioritized in the below order:

1. Upgrade NECSD network infrastructure
2. Upgrade and Expand the NECSD wireless equipment in place

3. Uninterrupted Power Supply refresh
4. Add devices for classroom technology
5. Upgrade NECSD security systems

The district will include this new equipment in its inventory database and monitor it to ensure equipment is securely maintained in its designated locations. The District's asset insurance database will be updated to reflect the additional equipment as well.

REFERENCES

To learn more about the Smart Bond Act Guidelines go to:

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

<http://www.p12.nysed.gov/facplan/SmartSchoolsBondAct.html>