

Smart Schools Investment Plan

Hudson City School District

July 25, 2016



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Smart Schools Investment Plan Overview

The Smart Schools Bond Act of 2014 was passed in the 2014-15 enacted budget and approved by the voters in a statewide referendum held during the 2014 General Election on November 4, 2014. The Smart Schools Bond Act authorized the issuance of \$2 billion of general obligation bonds to finance improved educational technology and infrastructure to improve learning and opportunity for students throughout the State. It focuses on four main areas of funds: construct or modernize educational facilities for pre-kindergarteners, installation of high-speed broadband or wireless, installation of high-tech security features, and acquire technology equipment.

The proposed allocation for the Hudson City School District is \$1,771,233. The 2014-2015 enacted state budget included a methodology to calculate the Smart Schools Bond Act allocation amount for each eligible school district. The amount is proportionate to the district's share of total formula based school aid in the 2013-14 school year, excluding building aid, universal prekindergarten aid, and the gap elimination adjustment. The funding available under the Smart Schools Bond Act is a one-time allocation, not an annual amount. Once these funds are expended, no additional funds will be made available.

The Smart Schools Bond Act of 2014 requires all school districts to establish plans that must be approved by the local school board and submitted to the New York State Education Department. In addition, each school district must meet the required elements including demonstrating students' needs, minimal speed requirements for internet connectivity, professional development, technical support, and sustainability. As part of the process, districts are required to submit a District Instructional Technology Plan survey in compliance with the Education Law and Commissioner's Regulation. The Instructional Technology Plan survey outlines the current and future plans of the district as it relates to infrastructure, devices, staffing, and professional development to improve teaching and learning. The Hudson City School District's Instructional Technology Plan was approved by the New York State Education Department in August 2016.

During the development of this Smart Schools Investment Plan, in pursuant to the requirements of the Smart Schools Bond Act, the planning process had to include consultation with parents, teacher, students, community members, and other stakeholders. The following is a list of stakeholders who have been actively engaged in developing the Smart Schools Investment Plan: Ian MacCormack, Associate Principal - grades 3-8, Terry Harclerod, Technology Director, Mark Brenneman, Principal – M.C. Smith Intermediate School, Marlene Parmentier, Parent, Kristy Frederick, Parent, Michelle Cousens, 5th grade teacher, Tiffany Shumway, 2nd Grade Teacher, Jennifer Merwin, Special Education Teacher, Molly Zucker, Health Education Teacher, Laura Bender, Social Studies Teacher and Google Help Desk Coordinator, Noah Taylor, Google Help Desk Student, and Ricardo Wise, Google Help Desk Student.

The spending of the allocated \$1,771,233 is outlined below in the appropriate budget categories.

Budget Category	Hudson City School District Sub-allocation
School Connectivity	\$400,000
Connectivity Projects for Communities	\$5,233
Classroom Technology	\$570,000
Pre-Kindergarten Classroom	\$496,000
High-Tech Security Features	\$300,000
Total	\$1,771,233

School Connectivity

In the Smart Schools Bond Act, it is outlined that districts are to maximize their return on investment in education technology and devices, and so necessary funds must be used to ensure infrastructure investments. Districts must increase the number of school buildings that meet or exceed the Federal Communications Commission minimum speed standard of 100 Mbps per 1,000 students in which the Hudson City School District exceeds this standard. The Hudson City School District currently has a 1Gb internet connection and has a 10Gb Wide Area Network (WAN) connection between the buildings, for 1,763 students. Although the district exceeds the Federal standard, the district believes that it needs to invest in upgrading its infrastructure to get the maximum benefit from our existing classroom technology and future technologies.

Use of Funds to Support High-Speed Broadband and Wireless Connectivity

Essential additions to expand the network infrastructure to enhance key capabilities:

1. Providing both additional and upgraded wireless access points throughout the District to provide both ubiquitous wireless coverage in buildings and sufficient wireless bandwidth capacity per access point in classrooms to allow for large-scale use. Furthermore, add wireless controllers for access points, and outside wireless capabilities for specific school buildings;
2. Continue the implementation of gaining access to high-speed internet by enhancing hardware in all the wiring closets in specific District school buildings. This will require purchasing additional supervisor modules and fiber modules, for all switches throughout district for more reliable and robust internet and better data dissemination. Please note that with the support of E-Rate funds the district has already begun to upgrade the wide area network (WAN) links between buildings to support up to the higher speeds, and within some buildings' Local Area Networking (LAN) closet switches. All data runs for wired and wireless access are cabled with Category 6e cable. There will be a need for additional cabling under the Smart Schools Bond to support security cameras and new access points;

3. Upgrade Uninterruptible Power Supply (UPS) backup battery systems in every wiring closet to protect sensitive network equipment from power surges, brownouts, and to ensure network connectivity in the event of a power outage;
4. Adding additional network storage for electronic files for students and staff.

Robust Network

The Hudson City School District has been continuously updating and enhancing the overall network infrastructure over the course of 5 years. Improvements include expanding wireless coverage so that there is as much of a ubiquitous access as possible. The District has also worked diligently to improve network speeds, reduce wireless access bottlenecks, and improve overall reliability.

Five years ago the District connected in strategic points of each building 802.11n wireless access points (WAPs) and over the past two years the District has been moving towards quicker and more robust 802.11ac WAPs, using centralized Cisco Wireless Local Area Network (WLAN) controller. The District will maintain the use of its 802.11ac WAPs, and continue to install additional 802.11ac WAPs to improve network speeds, reduce wireless access bottlenecks, and improve the District's network and system reliability.

The District wants to ensure all teachers, staff, and students have reliable wireless access when they need it. The informational technology department closely monitors and manages network traffic to make sure there is high output. To ensure the increasing demands are met with a suitable level of wireless access, every classroom in the District will have at least one 802.11ac WAP and large instructional locations will be equipped with multiple 802.11ac WAPs.

District Instructional Technology Plan

The Hudson City School District wants each and every student to obtain a world-class education by advancing the intellectual, social and emotional development of all students, preparing them for college, career, and citizenship. In order to support our students in obtaining this goal and gaining 21st century skills our District Instructional Technology Plan supports this. Some of the main initiatives in our Technology Plan are:

1. Adding Chromebooks and tablets to greatly enhance academic skills with the use of Google Apps for Education by providing differentiated instruction and expanding all students' curriculum;
2. New Bring Your Own Device (BYOD) policy for staff to increase communications between parents and staff, provide real-time information on students for teacher, parent, and administrator conversations;
3. Replacing all outdated District technology that is more than (4) years old to support learning in all learning environments;
4. Adding infrastructure to support the additional Chromebooks and other wireless based device.

Chromebooks and tablets are an essential part of differentiated instruction, and the development of 21st century skills. Teachers will be able to access Chromebooks and tablet carts in their classrooms to deliver interactive Math and ELA lessons to students. Through the use of Windows Applications and Google Apps for Education, students will be able to complete assignments, develop critical-thinking skills, and collaborate with peers and teachers. Teachers, parents, and students will be able to review

documents, complete homework assignments, and collaborate by using all of the applications in the District's Google Apps for Education domain.

Connectivity Projects	
Network/Access Costs	\$0
School Internal Connections and Components	\$300,000
Professional Service	\$50,000
Testing	\$0
Other Upfront Costs	\$0
Other Costs	\$50,000
<i>Subtotal</i>	<i>\$400,000</i>

Classroom Technology

(Equipment and/or Devices)

Device Purchases

The Hudson City School District will focus purchases in four main areas:

1. Add sets of Chromebooks to be housed within each school building;
2. Add tablet carts consisting of 7 devices within each cart to one building;
3. Add interactive whiteboards throughout the district;
4. Add audio and video equipment to non-classroom instructional spaces.

Student Achievement and Devices

The Hudson City School District has a major initiative to create 1:1 digital learning program for our secondary school. For this initiative the district will be assigning Chromebooks to students at the High School level. The Hudson City School District is a Google Apps for Education (GAFE) district and students and staff have been using GAFE for the past two years. There has been ongoing professional development throughout these years and several teachers have been modeling the use of GAFE, including Google Classroom, for their peers. Teachers have also begun flipping their classrooms and are using the classroom time to engage the students with project based learning. In order to maintain this, the students need access to technology. The availability of a few Chromebook carts spread across the district and computer labs are driving technology integration. The Hudson City School District is aiming to provide ample technology so that our teachers are able to create dynamic thought provoking lessons without being hindered by the lack of equipment and tools. The students are quick learners and often support each other and because of this, the District has started running a student help desk to support both their peers and teachers. Chromebooks will not be allowed to go home with the students, for the first year of implementation. Storage carts will be purchased to accommodate the storage and nightly charging responsibility. After the first year the district will consider allowing the upper grades to take home the devices. The charging carts will still be

necessary for the remaining grades. Due to outside factors, our district technology budget has endured cuts, and so it has substantially impacted our replacement cycle for the laptops we provide to teachers. In order to get us back on our replacement cycle, a small portion of our smart schools money will be used to replace the laptops we provide to our teachers.

As part of a universal design approach to differentiated instruction and support for students with disabilities, the Hudson City School District makes use of a variety of assistive technology tools that have been developed for use with Google Chrome and Google Apps for Education. These include speech to text and text to speech applications, the ability to enlarge print, simplify web pages, word prediction support, and access to word processing. These tools provide our students with the ability to fully participate in classroom learning activities. As needed, students are provided with audio versions of books. By having a Chromebook or tablet per student, providing appropriate timely access to all of these tools will be much more efficient. We have piloted all of these tools over the 2015-2016 school year. On a small scale basis, we recognize that these tools are an effective method for improving student learning if used on a consistent basis.

Increasing Communications

The Hudson City School District will continue to use various communication technologies, including email, text messaging, the district website, and other electronic applications to stay in touch with and to share information with parents and the rest of the community. The expansion of the wireless network capabilities and the implementation of a staff BYOD pilot program will allow for improved staff-to-parent communications. Also, the expanded connectivity across the district and to the internet will better support the student portal for student learning because the District strongly encourages parents to review student progress on these applications. Student access to web-based applications will greatly enhance student learning.

Professional development

An essential component of the Hudson City School District's Instructional Technology Plan is on-going professional development. The District provides a range of professional development opportunities each year for our teachers, teaching assistants, staff, and administrators. These trainings include instruction in the efficient use of interactive boards and promethean planet, document cameras, ENO Boards, Microsoft Suite products, Google Apps for Education products and applications, laptops, tablets, and Chromebooks. The Instructional Technology Specialists holds monthly sessions addressing district supported web-based applications that can be integrated into curriculum and instruction. In addition to monthly sessions by the Instructional Technology Specialists, teachers, teaching assistants, and staff are able to sign up for additional trainings at the building level. The District strongly believes that both the instructional leadership staff and the technical support staff need higher-level professional development in order to continue to evolve in their roles. Currently there is one staff member dedicated to instructional technology integration across the District. The District is committed and will continue to provide professional development on an on-going basis to the staff to allow them to utilize the technology tools and resources in the most effective manner

possible. Going forward, additional technology personnel will be needed to support the integration of the new initiatives supported by the Smart Schools Bond.

The Hudson City School District has communicated with the SUNY Albany teacher preparation program, as required by the Smart Schools Bond Act. SUNY Albany has provided insight and advice on innovative uses and best practices at the intersection of pedagogy and educational technology.

Sustainability Plan

The Hudson City School District is committed to the sustainability of infrastructure and devices purchased through the Smart Schools Bond Act. The plan includes funding supported through the general fund and grant opportunities. Staff will recommend hiring additional personnel to provide for general maintenance and technical support necessary for the additional devices. Staffing may include an Instructional Technology Specialist to support professional development, Technology Support Specialist for maintenance and repair of equipment, and a specialist to manage the addition of tablets into the school environment. There will be funding available for training and support for these positions.

Classroom Technology	
Laptop/ Chromebooks/Tablets with Carts	\$305,000
Interactive Displays/Casting Equipment	\$100,000
Other Costs	\$165,000
<i>Subtotal</i>	<i>\$570,000</i>

Pre-Kindergarten Programs/Classrooms

The Hudson City School District expects to further develop the educational opportunities of all students within the District by expanding and enhancing the pre-kindergarten programs. Currently the District provides two sessions (AM/PM) of pre-kindergarten in a single 950 square foot classroom, and recognizes the need to expand the pre-kindergarten program. The construction of two pre-kindergarten classrooms will be added to the existing M.C. Smith Intermediate School, and is consistent with the Commissioner’s Regulations (Section 151-2.7. Physical facilities).

Pre-kindergarten classroom areas will have approximately 6,000 total square feet of usable activity space which includes, but not limited to: cloakrooms, hallways, bathrooms, and storage facilities. The pre-kindergarten classrooms will be added to the first floor/ground level of the M.C. Smith Intermediate School, and will be accessible for children with handicapping conditions who may participate in the program. Each pre-kindergarten classroom will be 1,000 square feet and will exceed the minimum of 30 square feet of usable activity space per child, and allows for adequate indoor space to accommodate a variety of gross motor activities that encourages the physical, social and emotional development of children. Although the total 1,000 square feet of classroom space excludes cloakrooms, bathrooms, storage facilities, etc.; a bathroom will be part of the pre-kindergarten

classroom. The construction of the additional classrooms will not affect the minimum outdoor play area per child, and so no additional changes will be necessary on the school grounds in regards to the outdoor play area.

Pre-Kindergarten Classrooms	
Construct Pre-K Classrooms (2)	\$485,000
Enhance/Modernize educational facilities	\$0
Other Costs	\$11,000
<i>Subtotal</i>	<i>\$496,000</i>

Installation of High-Tech Security Features

The Hudson City School District security plan furnishes upgrades and replacements to be implemented in all buildings. The District plans to replace the remaining outdated keyed entry only system in all school buildings. The new system includes a keyless chip embedded keycard system with a control system. The keycard system can be used in conjunction to a keyed entry. In addition to a keyless chip embedded keycard entry system, the inside and outside security camera system will be upgraded in all buildings to a total of 64 channels. The hardware and software has been updated on the current ACTi video management system to provide a reliable video surveillance. In order to maximize security, additional video surveillance cameras need to be purchased, so that the District can increase the coverage and capitalize on the 64 possible channels at each building. The new cameras will provide a resolution up to 10 Megapixels and provide visibility in low light conditions.

Inventory Management

In addition to upgrades to the surveillance system and entry to the building, the Hudson City School District will utilize high-tech security to manage its devices throughout the district. Currently in the Google Apps for Education suite there is a device tracking application that the District uses to track, but also the District will utilize GoGuardian and NetOp, an outside source to increase the management of all the pieces of technology that are in place. With the use of these systems the District will be able to maintain detailed information and inventory of all technology in the district including purchases made through the Smart Schools Bond Act.

High-Tech Security Features	
Capital-Intensive Security Project	\$0
Main Entrance Electronic Security System	\$0
Main Entrance Entry Control System	\$0
Approved Door Hardening Project	\$0

Other Costs – Surveillance & Management Systems	\$300,000
Subtotal	\$300,000