Smart Schools Investment Plan

Phase 1: Network Infrastructure Upgrade

Schenectady City School District

Approved March 20, 2019

Contents

Overview

In November 2014, New York state voters approved the Smart Schools Bond Act (SSBA) through a referendum. The SSBA stipulates a $2 billion investment in New York's public schools to ensure students have the resources and increased connectivity necessary for long-term success. This includes a $9,364,497 allotment for Schenectady City School District. School districts are permitted to spend the funds in the following six project categories: (1) school connectivity, (2) community connectivity, (3) classroom learning technology, (4) high-tech security, (5) replacement of classroom trailers, and (6) modernization of pre-kindergarten instructional spaces.

To access funding, the Schenectady City School District (SCSD) must submit a finalized Smart Schools Investment Plan (SSIP), approved by the school board, after posting a preliminary plan for a 30-day review period and holding a public hearing.

This plan was issued February 6, 2019. Members of the public were offered the opportunity to submit comments electronically, via the Let's Talk (LT!) button on the district's website (go to http://www.schenectady.k12.ny.us/).Comments were also accepted in writing addressed to:

> Schenectady City School District
> 108 Education Drive, Schenectady, New York 12303
> Attention: Dr. Aaron Bochniak, District Director of Planning and Accountability

A public hearing was held on March 20, 2019 during the Schenectady City School District Board of Education meeting at the Schenectady High School cafeteria, at 7 p.m., where the school board passed a resolution approving the plan.

SCSD has an aging technology infrastructure that is at risk of becoming obsolete, as existing network equipment is no longer supported by its manufacturer and does not meet the latest standards for connectivity.

The district is committed to increasing equitable access to high-quality digital resources and standards-based, technology-rich learning by ensuring that students have similar technology experiences, regardless of classroom or teacher. To fulfill this commitment, the district has identified school connectivity and classroom learning technology as top funding priorities and will invest its Smart Schools allocation in three phases.

SCSD Smart Schools Allotment, Proposed Phase 1 Expenditure, and Remaining Funds	
Allotment	$9,364,497
Phase 1: Network Infrastructure Upgrade	$2,375,773
Phase 2: Classroom Learning Technology	TBD
Phase 3: Instructional Tech., Student Devices	TBD
Remaining Allotment	$6,988,724

Proposed Smart School Bond Act Roll-Out

The Smart Schools Bond Act allows school districts to access funds in multiple phases. This ensures each school district is prepared to implement the identified components in a timely manner. It also affords districts the flexibility and resources to best meet the needs of students while keeping pace with technology.

Schenectady plans to sequence work in the following three phases:

> Phase 1: Network Infrastructure Upgrade (June 2019)
>
> Phase 2: Classroom Technology: Desktops, Laptops, Projectors, etc. (June 2020)
>
> Phase 3: Classroom Technology: Instructional Technology, Student Devices and Supports (September 2020)

This proposal concerns only the first phase, but also contains general information on Phases 2 and 3 for reference. Proposals for Phases 2 and 3 will be made available for public review and comment subsequent to the launch of Phase 1 initiatives.

During Phase 1, Schenectady City School District will implement and sustain a regionally supported, robust, secure network to ensure sufficient, reliable, high-speed connectivity for students and staff by updating every school's building network and wireless infrastructure. This refresh will provide stable ground to build upon. Phases 2 and 3 will focus on equipping schools with enhanced classroom technology and increasing the number of high-tech learning devices available to staff and students.

At the conclusion of all three phases, the district will be compliant with existing connectivity standards, as well as upcoming requirements for grades 3-8 computer-based state testing. The upgrades will also ensure that SCSD can provide technology-enhanced, culturally and linguistically responsive learning environments. Ultimately, SCSD intends to pilot and implement programs to highlight student expertise. To accomplish this, SCSD will work to develop a student-led help desk and embed technology enrichment opportunities that will extend beyond just the school day.

Preconditions

Connectivity

To be eligible for Smart Schools funding, the district must meet Federal Communications Commission (FCC) minimum requirements for connection speed. The New York State Education Department (NYSED) guidance to districts provides a thorough explanation of the requirement:

> "In order for students and faculty to receive the maximum benefit from the technology made available under the Smart Schools Bond Act, their school buildings must possess sufficient connectivity infrastructure to ensure that devices can be used during the school day. Smart Schools Investment Plans must demonstrate that sufficient infrastructure that meets the Federal Communications Commission's 100 Mbps per 1,000 students standard currently exists in the buildings where new devices will be deployed, or is a planned use of a portion of Smart Schools Bond Act funds, or is under development through another funding source. Achieving this speed standard is a precondition for the purchase of devices."

Instructional Technology Plan

The Smart Schools Investment Plan is one component of the district's overall technology plan, called an Instructional Technology Plan (ITP). Before a district can apply for Smart Schools funding, NYSED must approve the district's ITP. Schenectady's ITP was approved on November 9, 2018. It addresses implementation, upkeep, documentation and accountability measures, and identifies other funding sources that SCSD will use—in addition to Smart Schools funds—to ensure all Schenectady students receive a technology-rich education.

Schenectady School District's ITP is available for review here:

http://www.schenectady.k12.ny.us/UserFiles/Servers/Server_412252/Image/Technology/2018-2019%20Instruction%20Technology%20Plan.pdf

To perform the work detailed in the proposed school connectivity project, SCSD is required to submit a letter of intent to the Office of Facilities Planning. According to NYSED guidance to applicants, "Capital-intensive infrastructure projects (such as those that require the installation of wiring or other construction projects to support the investments) will require approval by the Office of Facilities Planning." This requirement ensures that all work will be conducted safely and that all equipment will be installed properly.

Goals

The Schenectady City School District will use SSBA funding in increments to achieve the overarching goal of increasing equitable access to high-quality digital resources and delivering standards-based, technology-rich learning experiences to all students. In order to reach students with culturally relevant, curriculum-based technology instruction, the district must first design, implement, and sustain a robust, secure network. Therefore, SCSD's goal for its first phase of Smart Schools activities is to ensure sufficient, reliable high-speed connectivity for learners, educators, and leaders. Achieving this goal requires improvements to both wired and wireless network infrastructure.

Wired Network Upgrade

Existing network equipment is obsolete or no longer supported by its manufacturer. The upgraded network will ensure all school buildings have fast, secure connections through state-of-the-art equipment including new routers and switches, and an expanded web of high-capacity cable.

Wireless Network Upgrade

The goal of the wireless upgrade is to provide sufficient network access in every instructional space and learning commons. The interior walls of many schools in SCSD are constructed with concrete, brick, or similar material. This is a harsh environment for wireless access that is made more difficult by the sheer numbers of devices and increasing bandwidth needs. The upgraded network will simultaneously support an array of devices and functions, such as teacher devices, embedded devices, Chromecasts, Apple TVs, VoIP, video streaming for 25 devices in classrooms, staff and guest devices, as well as some level of smartphone usage by students. Wireless access equipment will include new wireless access points at every school to ensure between 1.1 and 1.3 access points per classroom and one access point for every 50 people allowed by fire code in common areas used for instruction or testing.

Timeline

✓ Prepare and submit an Instructional Technology Plan to NYSED.

    ✓ Conduct technology needs assessment.

    ✓ Develop RFP for wireless and wired networking upgrades (not required for Smart Schools, but timely for leveraging E-rate purchasing).

✓ Obtain Instructional Technology Plan approval from NYSED.

✓ Submit a letter of intent on the project to the New York State Office of Facilities Planning.

✓ Draft Smart Schools Investment Plan and obtain SCSD Board of Education approval for public posting.

✓ Allow 30 days for public review of the district's Smart Schools Investment Plan web version and consult directly with stakeholders, including parents, teachers, students, community members, and non-public schools within district boundaries.

✓ Hold a public hearing on the Smart Schools Investment Plan (*March 20, 2019*).

✓ Obtain Board of Education approval to submit the plan in the appropriate NYSED format (*March 20, 2019*).

✓ Submit the NYSED version of the plan using the online business portal (*March 21, 2019*).

☐ Obtain NYSED approval for the Smart Schools Investment Plan.

☐ Begin the Schenectady City School District network infrastructure upgrade (Phase 1, $2,375,723 for wireless and wired networking upgrades).

☐ Develop proposals for subsequent project phases, including:

    ☐ Phase 2: Classroom Technology: Desktops, Laptops, Projectors, etc. (*fall 2019*); and

    ☐ Phase 3: Classroom Technology: Instructional Technology, Student Devices and Supports (*spring 2020*).

Allowable Expenditures

Categories of Eligible Capital Projects are defined as:

a. Installing high-speed broadband or wireless internet connectivity for schools and communities;
b. Acquiring learning technology equipment or facilities, including but not limited to interactive whiteboards, computer servers, and desktop, laptop, and tablet computers;
c. Constructing, enhancing, and modernizing educational facilities to accommodate pre-kindergarten programs and provide instructional space to replace classroom trailers
d. Installing high-tech security features in school buildings and on school campuses, including but not limited to video surveillance, emergency notification systems, and physical access controls.

In this first phase, the Schenectady City School District will request funds specific for School Connectivity only. The following chart identifies the total request for Phase 1.

Sub-allocation	Requested Amount
School Connectivity	$2,375,773
Connectivity Projects for Communities	$0
Classroom Technology	$0
Pre-Kindergarten Classrooms	$0
Replace Transportable Classrooms	$0
High Tech Security Features	$0
Totals:	$2,375,773

Purchasing Plan

The Schenectady City School District has developed a Request for Proposals (RFP) with specific and detailed requirements for each of the components listed below to ensure proper function and durability. A competitive bid process was completed to ensure the district would receive maximum value for the overall project cost. The specifications contained in the RFP was based on industry standards, experience, empirical data and knowledge of the network capabilities required to support digital teaching and learning in schools.

Funds for School Connectivity will be allocated as identified below:

Sub-Allocation	Requested Amount
Network/Access Costs	$2,037,338
Outside Plant Costs	
School Internal Connections and Components	
Professional Services	$140,437
Testing	
Other Upfront Costs	
Other Costs	$197,948
Totals	$2,375,723

Professional Learning for Educators

SCSD will provide ongoing professional learning opportunities to ensure technology is an integral part of instruction both inside and outside the classroom. While not funded as a part of the SSIP, this is a key to the successful implementation of Instructional Technology, as outlined in the District's Technology Plan. This requires more than simply equipping every classroom with diverse technologies, but also supporting teachers in making shifts in their pedagogical strategies to allow the integration of technology as a part of effective instruction.

Professional learning will be facilitated throughout the district through a phased process over the course of three years beginning in fall 2019. In the first year, the goal will be to increase awareness of the functionalities of the tools available, while beginning to build the training and support structure to aid continued integration of technology. A baseline will be established initially by surveying teachers and evaluating current levels of equipment and integration. From there, the district will develop specific trainings to allow for the influx of new technology in response to teacher and student needs.

The second year of professional learning will be dedicated to building capacity to support teachers in their ongoing modification, redefinition and use of instructional technology. The district will accomplish this by developing a core group of instructional technology trainers. The third year of Schenectady's professional learning activities will focus on increasing the reach and depth of instructional technology integration so both educators and students are empowered to be technological leaders.

Sustainability

This refresh will provide a stable foundation for enhanced classroom technology and increased device count to staff and students. It focuses first on building technological capacity and network access rather than immediately reaching for the latest teaching and learning devices. The district has taken care to develop the infrastructure upgrade project to leverage E-rate funding, a federally-supported telecommunications discount program for schools and libraries. Additional phases of the Schenectady's technology plan will also take advantage of E-rate savings. Schenectady City School District is also determined to aggressively pursue other funding sources for projects that align with or expand on SSBA-eligible initiatives.

Next Steps

ON March 20, 2019, the Schenectady City School District Board of Education voted to approve this proposal. The proposal will be submitted to the New York State Education Department. If NYSED approves the proposal, Schenectady will begin work on the network infrastructure upgrade project. Upon completion of the work (anticipated in fall of 2019), SCSD will introduce a detailed Phase 2 Smart Schools Investment Plan for public review.