Mohonasen
CENTRAL SCHOOL DISTRICT

Smart Schools Investment Plan 2016-2019

Hearing 1/11/16

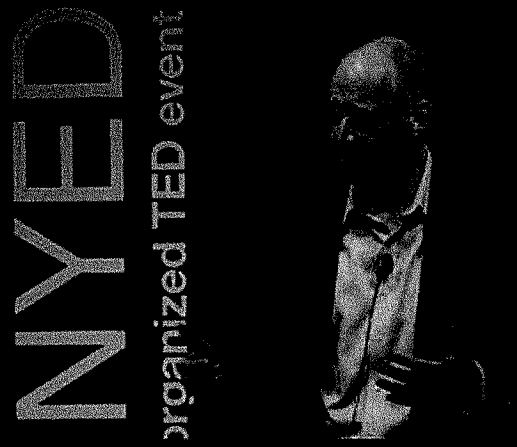
Technology needs to be as integrated and as easy to use as the chalkboard was.

Technology Vision

The Mohonasen Central School District continues to embrace technology that enhances learning, engages students and improves student achievement. As such, Mohonasen has adopted a *21st Century Learning* approach which requires methods of instruction that integrate innovative, research proven teaching strategies, modern learning technologies, and real-world resources and contexts from which to use and apply student learning.

We believe that significant and continuing improvement in student achievement requires creating a new classroom teaching and learning model. Simply adding technology to the classroom isn't the solution. The teacher's role must change to that of a facilitator, mentor, and manager of instruction. Students become active participants in learner-centered, collaborative, project-based learning situations and are taught to acquire and apply critical thinking, creativity, communication and collaboration skills. Parents and community members are engaged with the school, where this newer teaching and learning model is effectively supported by a variety of classroom technology.

Our instructional philosophy



Alan November TED Talk

"The real problem is not adding technology to the current organization of the classroom, but changing the culture of teaching and learning."

** Alan November is scheduled as Part of our Parents as Learning Partners Event on Thursday evening March 10, 2016 from 6:30-8:00 in the high school LGI.*

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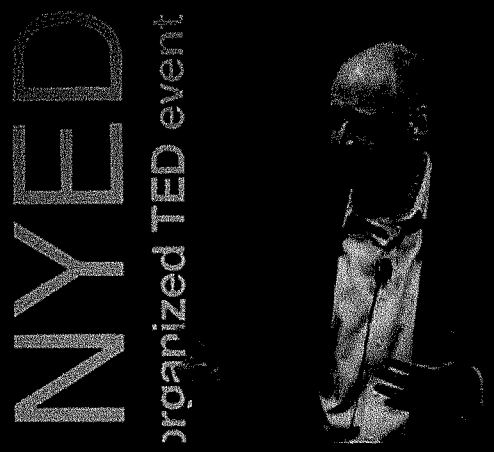

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Technology Goals for 2016-2019

1. Teachers will continue to transform their classrooms into 21st century learning environments utilizing technology as an important tool to do so, with the goal of increasing student achievement.

2. Students will demonstrate skills that will allow them to thrive in a 21st century environment.

3. Faculty and staff will leverage the power of technology to help measure student understanding and use assessment data for continuous improvement.

4. The district will continuously look to using technology to improve communications, (including safety related topics), throughout the school community.

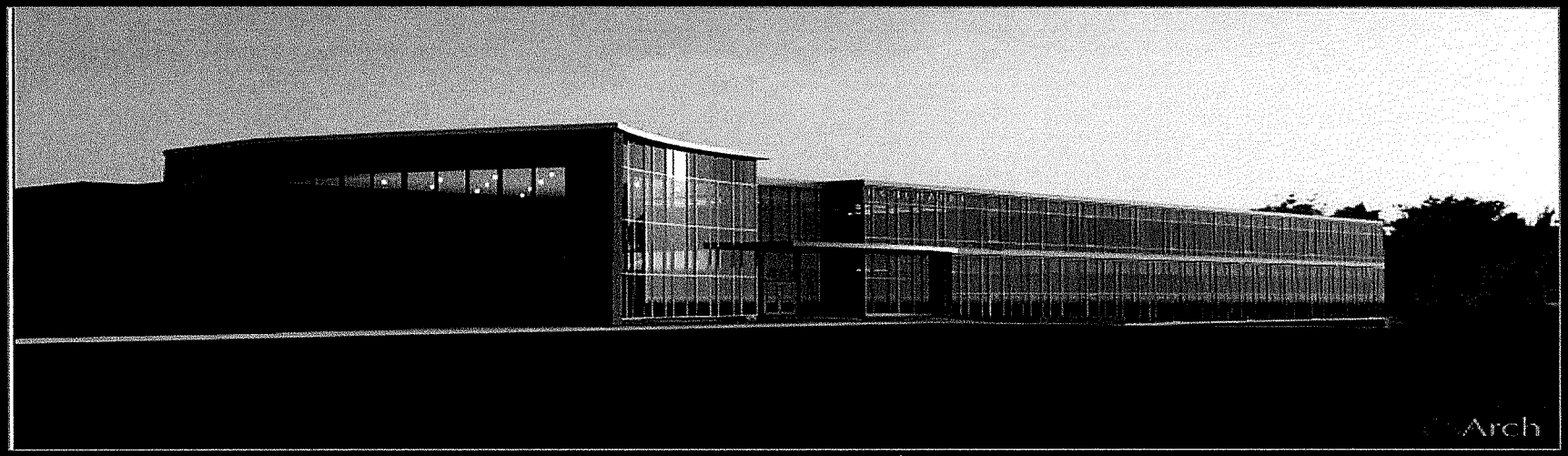
5. The district will maintain a technology plan that addresses the infrastructure, professional development and end-user devices necessary to support an ever-changing 21st century learning environment.

Technology Plan Focus 2016 - 2019

➤ <u>Priority areas in the technology plan include:</u>

- *Creating a sustainable support model for instructional technology*
- *Embedding comprehensive, ongoing, relevant technology professional development*
- *"Re-visioning" learning spaces within current buildings to maximize instructional technology*
- *Increasing the acquisition of end-user devices for all educators and students*
- *Updating infrastructure work districtwide*
- *Constructing a new* ***Center for Advanced Technology,*** *including specialized learning spaces, state-of-the-art technology access and instructional resources*
- *Upgrading safety and security capabilities across the district*

Center for Advanced Technology @ Mohonasen



In November 2013, the Mohonasen community approved a $48 million dollar capital project focused on updating all four district schools' aging physical and technological infrastructures. Included in the project was districtwide updating of wireless broadband connectivity. Connectivity updates have been completed in all schools. Also included in this capital project is the construction of a brand new, approximately 53,000 square foot, state-of-the-art facility, home to a variety of modern, high-tech laboratories and classrooms that offer learning experiences in environments that mirror the real-world. Through a unique partnership between Mohonasen Central School District, Capital Region BOCES and Schenectady County Community College (SCCC), classes will be offered to high school, college and workforce development students. This is yet another example of Mohonasen's forward thinking in terms of offering students opportunities to learn in programs and facilities unique to the Capital Region.

www.mohonasen.org/cat

Instructional Technology Purchases/Work in the last 3 years:

2012-2013	- Established purchasing plan for interactive whiteboards/projectors K-12 - Began purchasing plan for iPads at Bradt
2013-2014	- Began purchasing plan for chromebooks, carts for Pinewood - Continued purchasing plan for interactive projectors K-12 - Continued purchasing plan for ipads at Bradt - Began purchasing plan for tablets at Pinewood, Draper, High School

➢The yearly upgrading cycle for software (including online and blended learning initiatives), hardware and peripherals is not explicitly detailed in these charts, but does occur on an annual basis.

Instructional Technology Purchases/Work in the last 3 years:

2014-2015	- Began massive infrastructure upgrade as part of the November 2013 Capital Project. Completed October 2015. - Continued purchasing plan for interactive projectors districtwide - Created purchasing plan for chromebooks, ipads and storage carts districtwide - Purchased iPads for teacher leader use - Purchased green screens for production use - Purchased digital video cameras and iPad stands in all schools

➢ $100,000 was dedicated to security upgrades district-wide, and is not included in above hardware and equipment chart.

Other Instructional Technology notes

- Approximately 21% of the total number of students with disabilities in district are provided with assistive technology as documented on their Individualized Education Programs (IEPs)

- Examples of assistive technology devices: iPads, laptops, augmentative communication devices, interactive projectors, personal and field sound systems.

- Additional necessary instructional technology resources: variety of text to speech, speech to text, audio-books and other language-based software applications

District technology inventory less than 5 years old:

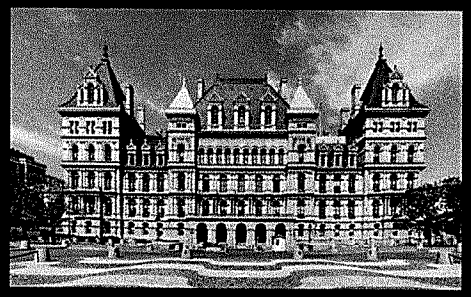
PC desktop computers	568
Macs	41
PC Laptops	85
iPads/tablets (none with access to external keyboards)	104
Chromebooks	270
Total end user devices < 5 yrs old	**1068**

Document cameras	10
Interactive projectors	40
Interactive whiteboards	8
Projectors	45
Multifunction printers	14
Total peripheral devices < 5 yrs old	**117**

Other inventory notes:

- The district has an inventory tagging system for district-owned instructional technology equipment
- The district allows adults to bring their own device and log onto the district's internet

Smart Schools Bond Act 2014



- *The legislation is meant to provide all NYS districts with the ability to build* ***21st century learning environments.***
- Mohonasen received a $1.7 million allocation.
- Districts can expend the funds in any of six specific areas below:

1. *Install high speed broadband or wireless connectivity*
2. Install high speed broadband or wireless connectivity for communities
3. *Acquire Learning Technology equipment or facilities (devices)*
4. Construct, enhance or modernize educational facilities to accommodate pre-k programs
5. Construct, enhance, and modernize educational facilities to provide instructional space to replace classroom trailers
6. *Install high-tech security features in school buildings and on school campuses*

Mohonasen Smart Schools focus

Allocation: $1,737,958

Smart Schools Allowable expenditure areas	Mohonasen's Smart Schools Plan focus
1. Install high speed broadband or wireless connectivity	• Ensure that high quality wireless access is available across the district and • Ensure that the speed of the district's internet connection speed is able to meet the needs of all 21st Century learners
3. Continued acquisition of classroom learning technology (end-user devices and peripherals)	• Work toward end-user technology devices for all teachers and students such that they have state-of-the-art classroom technology and "anytime" access to 21st century information and tools. • Provide a 1:1 device to classroom environment, working toward 1:1 student to device ratio • Ensure upgraded presentation equipment in all district classrooms and including specialty larger group instruction areas • Ensure equipment for specialty classroom spaces such as production studios, blended learning spaces, and advanced technology labs
6. Continued Installation of High-Tech Security Features	• Ensure safety and security of our personnel, physical plant, protection of operations and data systems • Updating of surveillance camera system and data capture • Enhanced access control measures and tracking

2016-2019 acquisition of classroom learning technology

Elementary Schools Description

In each of the schools in the district, technology is accessible to our students, is integrated into our classrooms and is a basic component of our programs. Physical education teachers also use iPads as instructional tools in their classes.
With additional training on Google apps for education, we have seen an increase in Google apps use in creating and sharing projects.We have invested heavily in the elementary schools technology over the past few years, and thus the need for end-user technology is not as great here as it is in the high school and middle school. Teacher leaders throughout the district use iPads in their classrooms. See chart below for the elementary needs.

At the grade K-2 Bradt elementary, there is a computer lab with PCs, 60 chromebooks distributed into classrooms in clusters, as well as the opportunity to access a full class set on a rotating basis. All of Bradt's classrooms will have interactive projectors by the end of the 2016 school year. The K classes also have 3-4 iPads to use for center work as part of the Daily 5 routine. The iPads can also function as document cameras, and some classrooms also have Apple TV access to expand the functions of the iPads.

At the grade 3-5 level at Pinewood, there is a computer lab with PCs, as well as an additional learning lab with PCs. There are two rolling carts with 30 chromebooks each available for sign-out on a rotating basis. Three quarters of the classrooms at Pinewood also have either interactive projectors or interactive whiteboards and projectors.

$ Estimated Costs **SS:** Smart Schools **GF:** General Fund **CP**: Current Capital Project	**Funding source**	**Quantity**	**Cost**
Complete interactive capabilities in all classrooms K-5 by June 2016	GF	30	appx $45,000
Purchase additional chromebooks & storage units moving toward one-to-one class set/classroom	GF/SS	500	appx $200,000
Begin purchasing one-to one mobile devices for all teachers	SS	90	appx $32,000

2016-2019 acquisition of classroom learning technology

Secondary Schools Description

It is the goal for our Draper Middle School and Mohonasen High School students to learn in a technology-rich environment where all students have access to current technology and are provided with the opportunities, knowledge and skills needed to be competitive in the 21st century. Teachers have received training in Google apps for Education, and will continue to receive ongoing professional development in how to integrate these applications into their daily instruction. With the purchase of mobile devices for all teachers, they will be able to more easily use Google apps, to communicate assignments, facilitate school/home communication and access student data. Teacher leaders throughout the district use ipads in their classrooms.

Draper Middle school has two PC computer labs, as well as two rolling carts with 30 chromebooks each available for sign out on a rotating basis. Teachers are also piloting using chromebooks this year in some math classes. We are looking to outfit the remainder of Draper's classrooms with interactive capabilities within the next three years.With technology being integrated more frequently into daily instruction, more opportunities for all stakeholders to better learn, communicate and collaborate are provided.

Mohonasen High School has two computer labs with PC's, as well as an additional graphics lab with a combination of Macs and PC's. Macs are also used in the music theory classes, where there are 20. There are two rolling carts with 30 chromebooks each available for sign-out on a rotating basis. The science department shares an additional class set of 30 chromebooks. We are looking to outfit the remainder of the high school's classrooms with interactive capabilities within the next three years. Part of the plan also includes exploring distance learning options as way to increase exposure to different learning environments, and offer students more potential opportunities This may also coincide with our partnership with SCCC and students using a more forward thinking approach to taking college classes, online or via a blended setup.

$ Estimated Costs **SS:** Smart Schools **GF:** General Fund **CP**: Current Capital Project	**Funding source**	**Quantity**	**Cost**
Address interactive capabilities in all secondary classrooms by June 2019	GF/SS	90	appx $135,000
Purchase additional chromebooks and storage units moving toward one-to-one class set/classroom	GF/SS	500	appx $200,000
Begin purchasing one-to-one mobile devices for all teachers	SS	130	appx $39,000
High School Large Group Instruction Room projection & presentation system upgrades	GF/SS	various	appx $100,000

2016-2019 acquisition of classroom learning technology

The Center for Advanced Technology @ Mohonasen will offer innovative academic programs and career training in laboratories and classrooms that mirror today's evolving high-tech, high-demand workplace. Through hands-on learning, students will gain skills and knowledge to meet the growing workforces demands of the regional, national and even international economy. Providing a state-of-the-art 21st century learning environment, complete with technological resources, is a critical cornerstone of the educational programs offered in this facility.

Additionally, the transportation facility will also require technology equipment for meeting driver safety and training, and keeping up with the latest developments in transporting students safely.

$ Estimated Costs

SS: Smart Schools **GF:** General Fund **CP**: Current Capital Project	**Funding source**	**Quantity**	**Cost**
interactive projectors	GF/CP/SS	25	appx $75,000
desktop/laptops	GF/SS	125	appx $125,000
mobile devices	GF/SS	60	appx $25,000
Flat screen displays	GF/CP/SS	10	appx $15,000
Wireless infrastructure & connectivity	CP	servers/ cabling	appx $100,000
Access point hardware	SS	30	appx $36,000

2016-2019 Districtwide video broadcast capabilities

Currently the district is able to broadcast events across all four buildings. The district is looking at updating the hardware and software necessary to allow this to happen more easily and in a more accessible manner. The district has also created the ability to access content for educational purposes within the classroom, including select cable tv access, along with the streaming capabilities that internet access provides. In addition, the capability to redistribute district content for public consumption is an area the district is looking to expand. This includes the ability to broadcast board meetings, talent shows, and any other school related events. Through the purchase of additional redistribution equipment the district will be able to more quickly and easily share a quality product to the community.

$ Estimated Costs

SS: Smart Schools **GF:** General Fund **CP**: Current Capital Project	**Funding source**	**Quantity**	**Cost**
Core infrastructure equipment: main controller and encoders, decoders, servers & related items	SS	1 controller 20 encoders/decoders	appx $160,000

Continued installation of high-tech security feature details

The following plans allow for enhanced video surveillance, as well as additional access and control measures to district buildings. Each building's digital safety and surveillance systems are currently under evaluation as to what needs to be updated. The two new buildings, the Center for Advanced Technology (CAT) and the Transportation Facility, each need complete surveillance systems. An added necessity to the security aspect is ensuring that each building is able to effectively communicate with the remaining district buildings in case of emergency. Products and services that allow this to occur are being vetted.

$ Estimated Costs **SS:** Smart Schools **GF:** General Funds **CP**: Current Capital Project	**Funding source**	**Quantity**	**Cost**
Complete security system for CAT building, including cameras, cabling, mounting hardware, desktop systems, software, cameras in classrooms and hallways, flat screen monitors.	CP-infrastructure GF/SS - hardware	25 cameras & supporting equipment	appx $70,000 in project budget
Complete security system for transportation building including cameras, cabling mounting hardware, desktop systems, software, cameras in classrooms and hallways, flat screen monitors.	CP	13 cameras & supporting equipment	appx $ 30,000
Security: Operational, data protection/disaster recovery, emergency notification Update telephone system to full VoIP and include key functionality for unified messaging system	GF/SS	Various	$635,000

Smart Schools Categories and *Maximum* Potential Costs

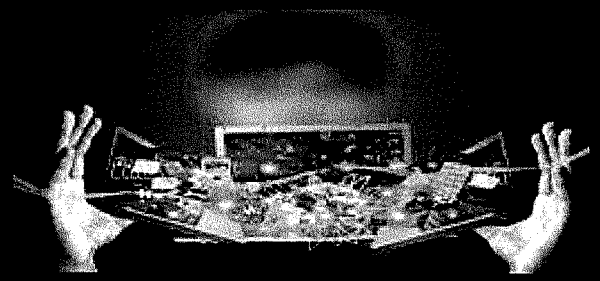
Category	Sub-Allocation
School Connectivity	$36,000
Connectivity Projects for Communities	$ -
Classroom Technology	$1,106,000.00
Pre-kindergarten Classrooms	$ -
Replace Transportable Classrooms	$ -
High Tech Security Features	705,000
*TOTAL	$ 1,847,000

*Total exceeds SSIP allocation by $110,000, general fund $ will be used to offset the difference

Timeline for rollout of new equipment through Smart Schools Plan

2015-2016	1. mobile devices for teachers 2. additional chromebooks K-12 3. additional other end-user devices per plan K-12 4. security enhancements
2016-2017	1. mobile devices for teachers 2. chromebooks K-12 3. additional other end user devices per plan K-12 4. equipment through “re-visioned” learning environments - blended learning, projectors, peripherals. Explore BYOD options at all buildings
2017-2019	Continue to purchase chromebooks & end user devices per plan Create replacement cycle plan Review technology plan for updates and next cycle

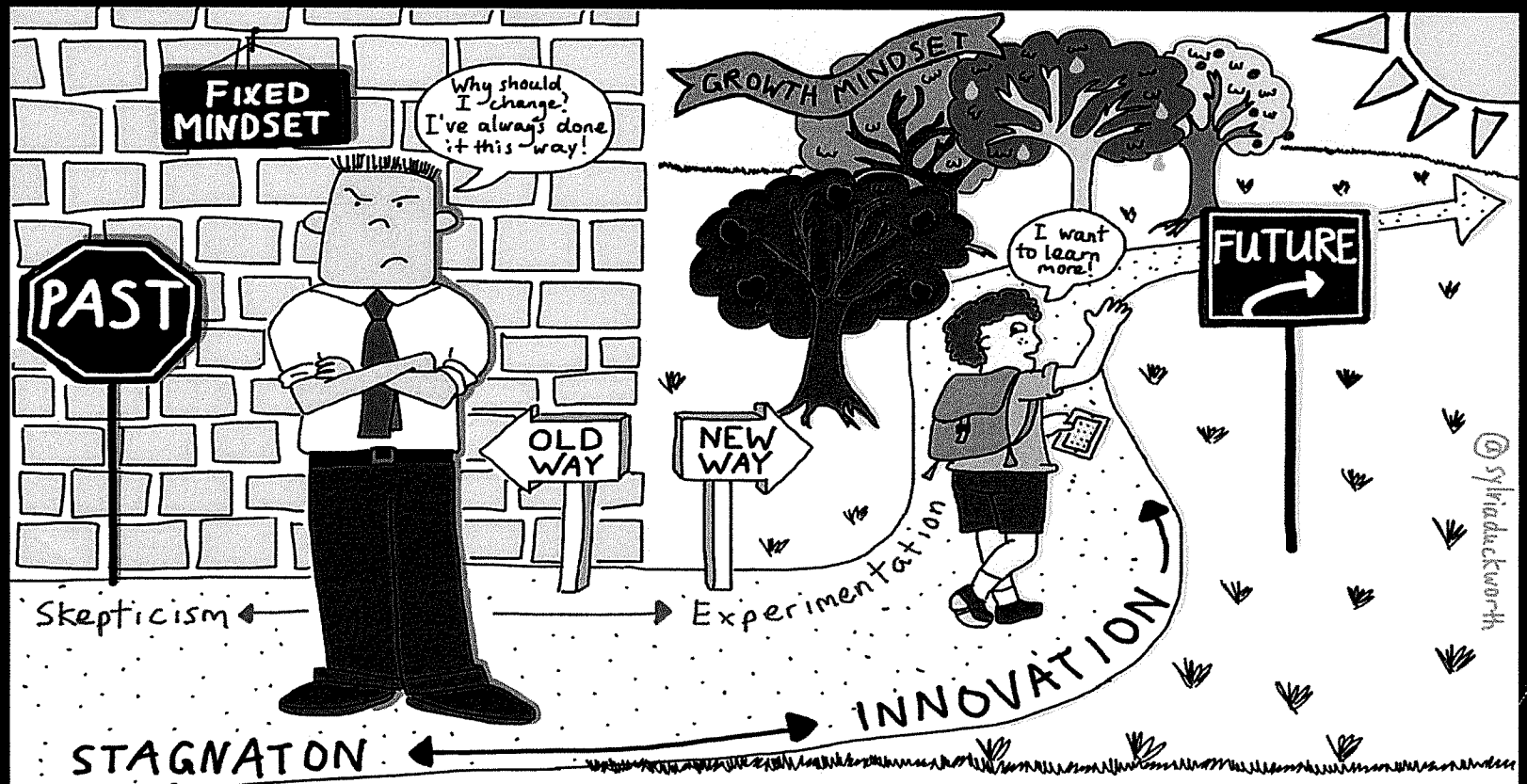
Final thoughts:



- ***Mohonasen's Technology Plan*:**
  - -Creating and expanding 21st century learning environments
  - -Technology is integrated into what we expect students to know and do
  - -Ongoing professional development & instructional support model is critical
  - -Ongoing evaluation of the plan as we implement

- ***Smart Schools Investment Plan (SSIP) expenditures:***
  - -Instructional technology to support 21st Century learning
  - -Safety

- *Sustainability:*
  - -Various Funding Sources



"If you don't like change, you're going to like irrelevance even less."
-General Eric Shinseki