School Board Meeting: **February 13, 2012**
Subject: **2013-15 Technology Plan**
Presenter: **Josh Swanson**

SUGGESTED SCHOOL BOARD ACTION:
Report Only: No Action Required

DESCRIPTION:
To be eligible for eRate the school district is required to have a Technology Plan on file that has been approved by the Minnesota Department of Education (MDE). The last formal plan that was submitted to cover 2008-2011. In 2010 MDE announced that it was changing the process and required districts to submit a continuation or bridge plan based on their 2008-2011 plan. We completed the process and received approval on April 7, 2011. A new plan must be submitted to MDE and approved by June 30, 2012. The plan will remain in effect through June 30, 2015.

The new planning process defined by the Minnesota Department of Education (MDE) allows for greater flexibility and that is reflected in our plan. It is written to acknowledge and leverage the continuous improvement process, that carefully aligns our mission, core values, and key results with district and site goals, defined by our district. As technology is ever changing the plan provides flexibility so we can adapt, adjust, and grow.

As approved by the board on August 22, 2011 the district technology goals have remained in effect for the 2011-12 school year while a district technology advisory committee is convened and a thorough needs assessment is completed. That process is underway and engages stakeholders from across the district. The tech plan must be submitted before the district goals are revised and that is evident in the plan.

If approved on February 27, 2012 the plan will be submitted to MDE.

Buffalo-Hanover-Montrose Schools
2013-15 Technology Plan

1.   Technology Needs Assessment: Describe the processes(s) used to determine the technology needs for the LEA for 2013-2015 and briefly summarize the needs that have been determined. Make sure to include any technology needs that will be supported through E-rate discounts, such as telephone, telecommunications access, Internet, and other E-rate eligible services.

Summary of Priorities

Based on the needs assessment process detailed below, the following have been identified as priorities for the Buffalo-Hanover-Montrose Schools for the 2013-15 technology plan:

1. Increase student use of technology for learning that is reflective of ethical and transformative use of digital tools and environments to create, communicate effectively, collaborate, and think critically while meeting designed learning objectives.

2. Provide professional development that engages staff in continuous improvement of instructional practice that is relevant and leverages tools available.

3. Improve routing, switching, servers, wireless access and storage to meet increasing instructional use and bandwidth demands of student and district owned devices connecting to our infrastructure.

4. Maintain recommended replacement cycle and support levels with increasing demands.

Process

The Buffalo-Hanover-Montrose Schools uses a continuous improvement process driven by the [mission vision, and key results](#) defined by the board of education. District goals are developed based on the ["S.M.A.R.T."](#) methodology and are reviewed every 3-5 years. These district goals drive the development and execution of "S.M.AR.T." department and building

goals. All of the goals and outcomes are reviewed on an annual basis by the school board. This process promotes alignment of efforts, careful definition of strategic work, a measurement of results, and creates systems of accountability.

Two district technology goals have driven our technology planning and work since 2008.

1. [Increase the number of teachers who integrate technology to create authentic learning experiences that enhance existing curriculum or create new curriculum.](#)

2. [Increase the number of staff and students who utilize collaborative technologies that enhance existing curriculum or create new curriculum.](#)

The Technology and Information Services Department (TIS) sets goals aligned with the district goals in 4 areas: Infrastructure, Information Services, Support, and Instructional Integration. Under the creation, implementation, and measurement of these goals, changing needs are examined on an annual basis through: the collection of data from an annual technology survey, classroom walk through data collected on the quantity and quality of technology integration, analysis of the measurements collected from the [Service Level Agreements](#) on every service provided in the district, and an annual infrastructure review performed by the Director of Technology and Information Services and Infrastructure Coordinator. In addition to the data collected through our district annual survey and internal data collection, the instructional survey developed by METT and MDE was used to gather additional instructional information from teachers and the hardware and infrastructure worksheets provided by MDE were completed and reviewed. The survey results are available on the district website under [Technology Department Plans and Policies.](#)

When the district level goals are up for review, every 3-5 years, a District Technology Leadership Team (DTLT) and a District Technology Advisory Council (DTAC) are led by the

Director of Technology and Information Services to complete an extensive needs assessment

and provide a recommendation for new goals to the school board. This process is occurring

during the 2011-12 school year as the prior district technology goals were in effect from

2008-2012. The DTAC is currently collecting data through questionnaires and focus groups

to gather additional information from current and prior students, parents, staff, community

and business, post-secondary education, and resident families who do not attend the Buffalo-

Hanover-Montrose Schools. Promising practices are being reviewed by the DTAC and district

leadership is providing information based on the annual data collected, and current and emerging

capabilities.

Integration

Results of staff surveys, classroom walk-throughs, an assessment completed by the

District Technology Leadership Team, and student focus groups indicate that we have done a

good job at increasing the quantity of use of technology, but that we now need to address the

quality use of technology as an instructional tool. We will push toward creating learning

experiences that engage students not only in the content, but also in creating, working with

others, critical analysis, and sharing ideas. The district supports several collaboration tools and

software such as: Google Apps, Wordpress, Apple Wiki/Blog, Moodle, video streaming, and

online social media and networking, as well as traditional communication and productivity tools

like: office suites, interactive whiteboard tools, video editing, email, research tools, classroom

Internet access, curricular programs, and visualization or presentation tools. The Director of

Technology and Information Services provides leadership and direction for the district and

instructional leaders. Two half-time technology integration specialists work with staff across the

district to support teachers and administrators. Ten teachers across the district receive stipends

to support teachers using our student information system. A technology leadership team at each site is guided by the principal and supported by the TIS department.

Professional development is currently offered through a multifaceted approach for instructional, administrative, and support staff across the district. Classes are offered through numerous venues, times, and methods, exemplary professional development projects and pilots are supported, one to one coaching and training is conducted, and professional development time is set aside at the district and site level that focuses on effective instruction and integration of technology. Feedback from staff in the needs assessment process indicates that the approach we have been using is effective. Based on the assessment, we need to continue to leverage the teacher leaders within our sites and find ways for them to take an even more active leadership role. Areas of focus should be 21st Century learning skills and effective integration. This will be reflected in our plan as we move forward.

Infrastructure

All Buffalo-Hanover-Montrose Schools are connected by Fiber Optic Cable. A one gigabit (GB) connection is supplied to each elementary and middle school and a ten GB connection is provided to the high school. Through a joint project with Saint Michael-Albertville (STMA) schools a ten GB connection is maintained between school districts and a joint one GB connection is used to connect to the 511 building and TIES. A redundant one hundred megabit (MB) connection is used to create a fiber optic ring to TIES for both STMA and BHM Schools. This fiber connection to TIES is used to transport 35 Mbps Internet and support our HR and Finance solutions hosted at the TIES data center. BHM schools also maintains a secondary 10 Mbps Internet service connection in collaboration with the Wright Technical Center in Buffalo. The fiber connection will allow us to take advantage of

significantly increased Internet bandwidth to meet the exponentially increasing demand beginning in 2012-13 through TIES. As the traffic grows infrastructure will have to be improved as well. Our Internet load balancing appliance will need to be upgraded, the CIPA compliant filter currently used may require a new appliance, and our network including fiber will need to be improved.

The current WAN and LAN in the district provides a 10/100MB connection to all desktops and wireless access points throughout the district. Every building in the district is saturated with centrally controlled wireless access points on the 802.11bgn 2.4 ghz frequency. A phase two plan has begun in several buildings to offer higher density coverage and greater bandwidth on the 802.11an 5 ghz frequency. This will require strategically upgrading routing, switches, and wireless controllers to support the increased bandwidth.

The shared fiber network with STMA has allowed both school districts to maintain disaster recovery (DR) sites in each others data centers. A full fail-over disaster recovery test is being completed in 2012 as part of the annual TIS goals. As servers and storage devices age in both our primary and DR data centers we are replacing and reducing the hardware we have to maintain through virtualization and efficiencies in storage solutions. As of 2011-12 we have 65 virtualized servers, a production data center storage area networks (SAN) that is going on five years old, a nine year old disaster recovery SAN and 8 of 27 physical servers that are more than 72 months old. During the time the 2013-15 plan is in place several servers will need to be upgraded and SAN replaced and expanded.

Information Services

The district currently uses a single student information system to maintain all student records. This has eliminated inconsistent data silos and promotes the maintenance of accurate

data that can be used by all staff for decision making. A GIS system is used to overlay data

through a geographical interface. The district has been exploring various data warehouse and

analysis solutions, but has not found one with the capabilities of leveraging both formative and

summative data to support learning in an efficient and effective manner. This is a need that will

be addressed as the right tool is located and resources are available. We also have a need to

connect as many systems as we can through Single Sign On (SSO) through our Identity

Management Tool (IDM). We will continue to expand this capacity as funding allows for a

seamless experience for end users.

End User Hardware

The district inventory of hardware is maintained by the Technology and Information

Services Department (TIS), but technology budget decisions are managed at the site level.

End user hardware inventory is shared with principals and each site on an annual basis and

the Director of Technology works with the building principals to work toward maintaining

the district recommended replacement information. All purchasing is handled by the TIS

department to leverage volume pricing and maintain hardware standards and ensure support. At

this time a 7-8 year replacement cycle is recommended for hardwired computer labs that are

used for lower demand tasks. A 5-6 year replacement is recommended for laptop carts and a

5 year replacement schedule is recommended for all staff machines, mobile technologies, and

hardware that is used for higher demand tasks. VMWare View virtual desktops are used to

leverage old hardware and provide Internet and productivity tools to students in commons areas

and has allowed the extended use of district owned computers out to 10-13 years in some cases.

The district continues to work toward replacement cycle goals within budget limitations. We

have made great strides toward this target since 2008, but this will continue to be a challenge and

needs to remain a focus throughout the duration of the 2013-2015 tech plan. A chart outlining our current information is below.

Device	Total	BHS	BCMS	DES	HES	MES	NES	PES	TES	District
Windows Desktops <3 years old	179	100	1	1	4	3	2	2	59	7
Windows Desktops >3 years old	542	343	167	1		18	3	1	4	5
Windows Laptops <3 years old	441	158	213		37	15				18
Windows Laptops >3 years old	98	10	78		1	5	1			3
Mac Desktops <3 years old	199	0	35		33	35	0	65	8	23
Mac Desktops >3 years old	172	5	0		13		61	28	51	14
Mac Laptops <3 years old	294	23	44	83	28	10	59	15	8	24
Mac Laptops >3 years old	263	3	40	25	38	35	41		59	22
iPads	230	25	25	9	10	25		38	66	32
Student Response Devices	180		120					30	30	
Projectors	330	85	68	13	28	26	36	37	29	8
Sound Fields	167	3	2	13	26	24	33	35	26	5
Interactive Whiteboards	152	4	42	12	14	16	22	23	16	3
HP Networked Printers	138	46	20	3	7	7	13	12	8	22
Analog/Digital Telephones	793	212	142	33	65	60	5	92	65	119
VOIP Telephones	125	2	2	1	1	1	95	2	1	20

BHM School Computer Inventory by Age in Years

49.1%   50.9%

■ Less than Three   ■ More than Three
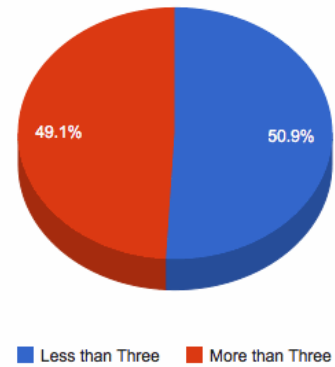
Beyond computers and end user devices the district leverages other classroom technologies to support learning. All classrooms K-12 have mounted projectors installed and all classrooms K-5 have a voice amplification system installed in the room. These are considered technology standards. Smartboards are installed in many classrooms across the district and document cameras are prevalent. These supplemental technologies have not been adopted as a standard, but instead have been installed based on curricular or instructional need. This model has been highly effective from both an instructional and cost perspective for the district.

A number of pilot programs have been put in place to explore the use of mobile technologies. The purpose of the programs is to identify success points before investing and to support professional development for the expansion of integrated technology. These pilots include student response devices, iPods, iPads, eReaders, netbooks, and other tablet devices. With current resources the district recognizes sustainability of wide scale programs like these could be difficult and is exploring other models to engage and connect students that are not cost prohibitive.

A program titled "Bring IT" is being used by the district to encourage and leverage student-owned technology to be used by students and teachers on our wireless network. Students can access a designated student network and use their school credentials to logon and gain filtered Internet access. The model is based on web interfaces becoming the standard access point. A need for equity of access to educational resources is being acknowledged and will be addressed throughout this process program. We expect the program to expand throughout the duration of this plan and that it will impact decisions we make in the future about hardware purchases.

2. Goals and Strategies: List the specific goals and strategies for 2013-2015 that address how your LEA will use technology to deliver education and assist with school administration:

All district goals are aligned with the district's Mission, Core Values, and Key Results. Our mission includes preparation in a changing world and technology is part of that vision. Technology's role in the district is specifically called out under the key results that are listed below:

Mission Statement
Making a difference by preparing all students for a successful future in a changing world.

Core Values
- All students can learn, though at different rates and in different ways.
- We are in the business of lifelong learning. All of our actions must be measured by our success in achieving this goal.
- Maximizing learning requires innovation, risk-taking and the ability to change.
- All staff has a critical role in enhancing student development.
- Honesty, integrity, fairness and ethics in all aspects of the district.
- Continuous improvement is essential.
- Intolerance for anything short of the very best.

Key Results
- All students demonstrating academic growth and success.
- Efficient and effective operations.
- Safe, comfortable environment for everyone in our schools.

- Increase student learning and expand instructional strategies by implementing technology.
- Provide more instructional options at the elementary and middle school level.

The BHM Schools will leverage an extensive needs assessment led by the Director of Technology and Information Services, which will result in the creation of new school board adopted district "SMART" goals in the area of 21st century learning and technology. A District Technology Leadership Team (DTLT) consisting of the Superintendent, principals representing elementary and secondary education, the Director of Teaching and Learning, Communications Coordinator, and integration specialists will aid the Director of Technology and Information Services in designing the process, and finalizing goals that will be presented to the school board for adoption. A District Technology Advisory Committee (DTAC) consisting of other district administrators, teachers, students, and school board, and other district personnel will engage additional stakeholders through focus groups, interviews, and questionnaires. The DTAC will conduct, analyze, and discuss the needs assessment while drafting proposed goals to be submitted to the DTLT. This process is underway and will conclude during the 2012 school year. The final 2012-2015 goals will be posted to the district website under [Technology Department Plans and Policies](#). The current district goals in effect and being measured are posted. Other district goals also leverage the use of technology and guide department and site level goals. They can be found on the district website under the [Teaching and Learning Department.](#)

3.   Professional Development Plan: Describe the professional development strategies you have in place for 2013-2015 to ensure LEA staff are prepared to use the technology infrastructure, software programs, and online resources provided:

We offered a multi-faceted staff development plan for staff. Opportunities are provided:

through training as new curriculum and technology to support learning is implemented, during a district-led day that focused on the effective use of technology to support learning and 21st Century education called "Teach 2.0", by two integration specialists on a one-one, small group, and large group training and consultation, through a 21st Century Skills Collaborative Cohort program, in staff development provided by our teachers and supported at the building principals, through our online tech help site, and through training provided by TIES. This provides many avenues for professional growth and development in an effort to meet the learning needs of the BHM staff. The two integration specialists have completed a needs assessment across the teaching staff to effectively target identified instructional integration professional growth. They offer individual guidance to classroom teachers, after school training, site level training, coordinate a faculty-wide technology integration day, provide online self-help resources, and lead a cohort of teachers who are focused on improving instruction using technology tools. They also maintain a blog which continues to challenge teachers to think about teaching and learning that is founded in 21st Century Learning Concepts. In addition to the development opportunities the district provides:

- Teachers are trained in the new technology tools and resources as curriculum adoption implementations take place.
- Site level and departments plan and carry out training sessions based on identified needs through tech leadership teams, professional learning communities, and grade level/ department teams.
- The district technology support team offers training for all district staff after school or during meetings times.
- The district uses TIES trainers for onsite training and uses services at TIES.

- The district uses teacher coaches to provide training on information systems.

4.   Evaluation: Explain the evaluation process for your technology plan for 2013-2015, including timeline, roles and responsibilities, and information gathered to assess how the technology plan goals and strategies are being met.

The four priorities identified, based on the needs assessment, for 2013-15 are listed below. The Director of Technology is responsible to ensure that each of the priorities is accomplished through the district or annual goal setting process and to work with staff to modify plans if necessary.

1. Increase student use of technology for learning that is reflective of ethical and transformative use of digital tools and environments to create, communicate effectively, collaborate, and think critically while meeting designed learning objectives.

TIS Staff Involved: Director, Integration Specialists

> Progress is being measured through qualitative data collection in focus groups, interviews, and observation that takes place annually. It is also being quantitatively measured through random classroom walk-throughs being completed by school administrators. Use and quality use of technology is being documented. The walk-throughs are not used for evaluation, but instead to examine district practice objectively for the purpose of continuous improvement planning.

2. Provide professional development that engages staff in continuous improvement of instructional practice that is relevant and leverages tools available.

TIS Staff Involved: Director, Integration Specialists, Director of Teaching and Learning

> The Teaching and Learning and Technology and Information Services departments work collaboratively to offer professional development opportunities that support technology

use and integration into the instructional setting. Programs and trainings are each

evaluated through feedback forms and debriefing with planning teams. Each is evaluated

for effectiveness based on the goals of the training or program. For example participants

take a survey following our district-wide technology integration day called [Teach 2.0](#).

Members of the [Tech Collaborative](#) participate in a debrief and document their learning

in a summary to share with other staff members. Each year in our district technology

annual survey, questions measure the effectiveness of our integration specialists and

training delivered at sites. Evaluation allows us to expand, modify, and discontinue

professional development models, so they meet the changing needs of staff. The impact

of the staff development should be evident in changing instructional practices measured

through the 1st priority listed above.

3. Improve routing, switching, servers, wireless access and storage to meet increasing

instructional use and bandwidth demands of student and district owned devices connecting to our

infrastructure.

TIS Staff Involved: Director, Coordinators

Projects are measured on completion within budget and project plan constraints. Services

are measured based on the collaborative [service level agreement](#). The TIS department

plans on implementing the following projects, budget allowing:

a. SAN Upgrade and Expansion: 2012-14

b. Phased Routing and Switching Upgrade: 2013-2015

c. Wireless Controller Upgrade: 2012-2013

d. High School and TES Wireless Phase 2: 2012-2013

e. Server Upgrades and Continued Reduction: 2012-15

f. Elementary School Wireless Phase 2: 2013-2014

g. Middle School and High School Wireless Phase 3: 2014-15

4. Maintain recommended replacement cycle and support levels with increasing demands.

TIS Positions Involved: Director, Sr. Technicians, Technicians

The TIS department maintains inventory and tracks replacement cycles to see if recommendations are being followed. The Director of Technology, Sr. Technicians and Technicians work with principals as budget allows to strategically replace equipment for the purpose of effective and efficient operations while providing the best learning environment possible. The district support team performance levels are measured on a quarterly basis through a customer satisfaction survey and annually on the district technology survey. The ticketing system used by the district is also analyzed to monitor incidents. The support team is also evaluated based on goals that are reset on an annual basis.

5. Optional Links: Provide links to district strategic planning documents, survey instruments, policies, or other resources that were used to provide data and help prepare the technology plan.

The planning and policies that are used by the TIS department and updated on an annual basis can be found on the District Technology Department Page.

6. Link to Current Technology Plan: Provide the link on the LEA website where the technology plan will be posted and updated throughout the planning period.

BHM Schools Technology and Information Services

Children's Internet Protection Act (CIPA)
This LEA has an Internet Safety/Acceptable Use Policy in place. **Yes**

If yes, please provide a link to access the policy at the LEA website.
http://bhmschools.org/departments/technology-info-services/technology-acceptable-use-policy

This school district deploys an Internet filter to protect minors from material that is pornographic or otherwise harmful to them. **Yes**