West Mifflin Area School District Technology Department Strategic Plan

2016-2019

Table of Contents

1. Planning Process Overview

The West Mifflin Area School District has had ongoing technology plans for more than a decade. Until 2013, technology plans were mandated by the Pennsylvania Department of Education. New guidelines by PDE no longer require a technology plan be included with a district's Strategic Plan. However, the West Mifflin Area School District Technology Department feels that it is crucial to maintain an ongoing technology plan that defines the strategic mission, goals, activities and budget for the next 3 years as it relates to information technology and educational technology initiatives.

The Technology Committee is comprised of volunteers from a body of stake holders that were asked to serve on this committee. Stake holders invited to serve on the committee are: elementary, middle, and secondary teachers, librarians, administrators, and students. The Director of Technology oversees the committee and provides statistical and other pertinent information. The Committee met on several occasions to review information and develop the initial plan. The committee will meet at least annually to review and evaluate the technology plan.

2. Membership List

Name	Role/Organization
Greg Roth	Director of Technology
Kevin Kocher	Instructional Technology Coordinator
Patricia King	High School Library Information Specialist
Jason Tatrai	Middle School Teacher
Brian Getz	Computer Technician
Greg Schaefer	Network Administrator
Shane Craig	High School Senior

3. Mission

The mission of the WMASD Technology Department is to provide a safe, secure, and stable technology system which promotes a productive 21st century learning atmosphere for our students.

4. Technology Analysis

Current Technology

The West Mifflin Area School District currently has 3 elementary schools, 1 middle school, 1 high school, an administrative building and 2 athletic complexes that all contain highly sophisticated technology systems. These technology systems require continual maintenance, support and ongoing training for staff. Clara Barton and Emerson Elementary schools each have one large computer lab, while Homeville Elementary has two. All elementary schools have a "mini lab" of VDI end-points, located in the library, designated for research and providing access to library media services. The vast majority of elementary classrooms are outfitted with document cameras, interactive whiteboard (IWB) technology and ceiling mounted projectors. Each elementary school utilizes several software packages as part of the elementary curriculum. These software packages are reviewed annually. The current software in use at the elementary level is *Go Math*, *Essential Skills*, *Study Island* and *Espresso Elementary*. The middle school is a newer building that consists of several key 21st century technology resources. The middle school houses five mobile iPad carts each consisting of 30 iPads, two classroom sets of 30 iPads, eight Windows laptop carts each consisting of 30 devices, two stationary computer labs, a Graphics Lab, Tech Ed Lab, and a "mini lab" of VDI end-point computers located in the library designated for research and providing access to library media services. Each middle school classroom is outfitted with document cameras, IWB technology, a ceiling mounted projector, and built-in audio amplification systems. Software packages utilized at the middle school are: *Study Island*, *Think Through Math*, *Schoology* (Learning Management System), *AirServer*, *LAN School* (teacher control of student computers), *Solid Works* (Drafting), and various educational iPad apps. The 6th grade is also in the middle of a one-to-one iPad pilot program with the expectation of expanding the program through at least the 8th grade. The high school houses 10

laptop carts each consisting of 30 tablet/laptop hybrid devices, four business computer labs, a video productions lab, a graphics art lab, a CAD lab, a robotics lab, a music lab and a computer lab in the library designated for research and providing access to library media services. The majority of high school classrooms are outfitted with document cameras, IWB technology and ceiling mounted projectors. The high school uses numerous software packages across all departments to infuse technology into the curriculum.

The West Mifflin Area School District infrastructure consists of several thousand network connections both wired and wireless across all locations. All local area networks are connected via the District's fiber optic WAN consisting of speeds at 1Gbps and above. The District's Internet connection of 40 Mbps is provided as part of the Allegheny Connect Network. This network also connects the West Mifflin Area School District to Internet 2 and PAIUNet. Internet 2 service includes high-capacity connections to leading U.S. universities, corporations, government agencies, and not-for-profit networking organizations, as well as international partners. PAIUNet provides educational, media, and collaborative resources to educators. Connected to these Internet resources, the District currently manages over 2,000 clients consisting of desktops, laptops, tablets, and VDI (virtual desktop) clients. The current technology inventory consists of over 4,000 pieces of equipment and over 125 software titles. The District has wireless internet access throughout all locations and are currently utilizing centrally located shared printing services. The technology staff currently consists of a Director of Technology, a Network Administrator and 2 ½ Desktop Technicians. The District also employs a full-time teacher as a part-time Technology Integration Specialist.

The strengths of the technology services at the West Mifflin Area School District rely on a solid infrastructure, core classroom technologies, advanced wireless network system, and a first-class IT support team. Most servers are less than 5 years old and unplanned system outages are a rare occurrence due to a robust and stable virtual server system, network monitoring resources, battery and generator power backup systems, and redundant storage arrays in place. The weaknesses of the technology services are with understaffing of the IT department, training, educational integration, and aging technology, in particular, core network gear, IWB technologies and staff issued mobile devices. Due to budget constraints with the

previous years, the vast majority of the technology support staff have been eliminated, although we have made strides toward rebuilding the department by expanding one of the part-time technicians into a full-time role and the re-instatement of the 2/3 Educational Technology Integration position. With the continued push for a 1:1 program, current tech support staff numbers will need to increase commensurately. Without the addition of the necessary tech staff, it will become increasingly difficult to continue to deliver an efficient, effective, and meaningful technology learning platform for our staff and students.

Needs Assessment

Through feedback from the staff and the Strategic Planning Committee, the West Mifflin Area School District realizes that the top priority for future technology services will be achieved by focusing on updated technology for staff and students and continued renovation of the core infrastructure. These areas will help the district move forward by allowing for greater and more reliable content delivery onto advanced and pervasive devices.

The District has and will continue to address software needs on an annual basis by replacing and updating legacy programs with more up to date and cloud-based solutions; such as has been the focus for the previous two years. The District now utilizes a cloud email, storage, and web-based office productivity suite of applications. Much of the educational software that is used has also been exchanged for comparable web-based tools. The District will continue to use and plans to expand the usage of the *Power School* student information system and the *OnHandSchools* instructional and assessment management system. These software systems provide both basic and high level analysis of student and teacher data.

The District will continue the replacement of computers and servers on an annual basis, however, increased funding is necessary as the number of computers added to the district over the last several years has increased significantly. Computers are replaced no earlier than every 5 years and servers are replaced no earlier than every 4 years. The local area network equipment will likely need replaced within the next 2 years in order to provide reliable network operations and to aid in the improvement of access to student learning resources. In order to provide reliable communications between various district locations, the fiber optic WAN service

should be expanded from 1GB to 10GB, and the lease agreement will be extended through 2021, as of 7/1/16. The District's internet connection agreement, currently provided by the Allegheny Intermediate Unit, expires at the end of the 15-16 school year. The AIU, with the aid of the Technology Directors Committee, has negotiated new terms for the continuation of the AIU RWAN. Beginning the 16-17 school year, and for a five-year term, the RWAN provider will be through DQE. The new agreement will provide the District with a 150mbps commodity internet connection (more than doubling the current connection), increase Internet2 service from 1GB to 10GB, and all at a lower rate. The increase in internet service will assist the District's technology initiatives; especially considering the current reliance and increasing demand for online resources.

Finally, the District will continue to participate in the federal *Erate* program. The *ERate* program provides generous discounts for data/telecommunication systems and internet services. As part of the *Erate* requirements, the District will provide a student internet safety instruction program to all students. Beginning with the 15-16 school year, *ERate* rules have changed, resulting in lower and, eventually, a total loss of reimbursements for many telecommunications systems as related to Priority 1 funding. Priority 2 funding was never an option in the past since the District did not meet the minimum requirements. Since the reorganization of the funding model, the District now falls within the upper limit for receiving Priority 2 funding. This opens opportunities for the District to receive significant funding for upgrading and replacing wired and wireless network equipment. Utilizing these funds is critical for the continued progress of providing a consistent availability of network and Internet based resources.

Budget Analysis

The District has historically cut technology spending, staff and hardware, to compensate for shrinking budgets. As a result of years of budget cuts coupled with aging equipment and new educational technology initiatives, a reinvestment into the technology infrastructure, including increasing personnel, is becoming necessary. Below is a chart of prior years' budget expenditures and projected future spending required to maintain and expand the District IT services.

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Total	$832,000	$817,472	$855,991	$1,048,104	$1,062,674	$1,134,611	$1,149,449
Non Personnel Costs	$443,000	$437,500	$444,400	$592,550	$615,933	$640,000	$640,000
Salaries & Benefits	$389,000	$379,972	$411,591	$455,554	$446,741	$494,611	$509,449
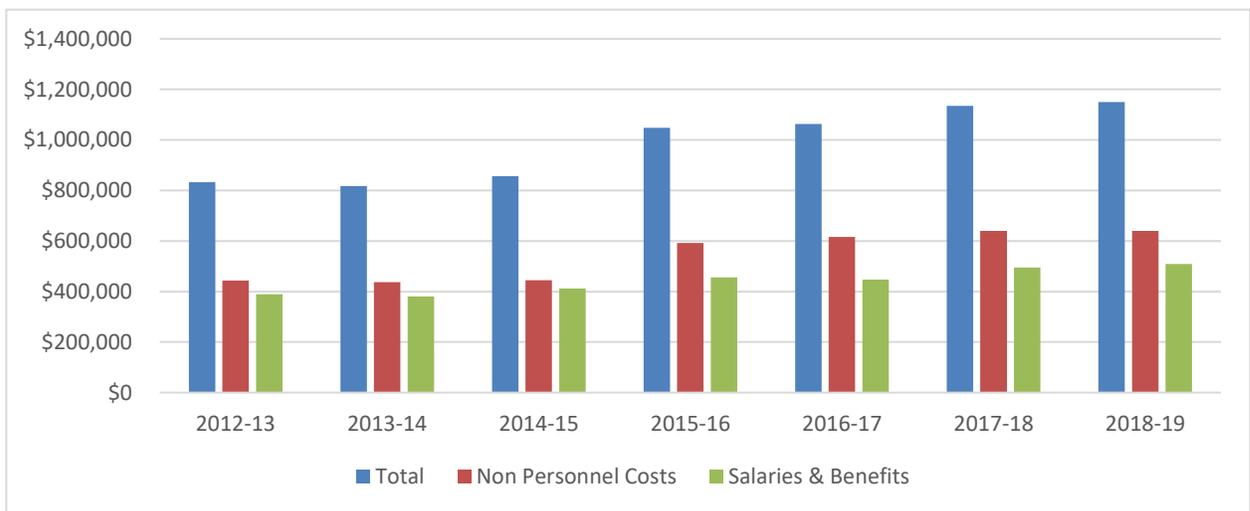
5. Goals and Strategies

Goal – The District will enhance student learning and provide a more engaging and relevant experience for students.

> **Strategy –** The District will utilize cutting edge educational techniques by adapting and evolving with the ever-changing methodology.

> > **Activities**
> > - Continue VDI Replacement (offices) 16-17
> > - Upgrade VDI Infrastructure 17-18
> > - Replace HS Graphics/CAD Labs 18-19
> > - Replace MS Graphics/CAD Labs 17-18
> > - Upgrade/Replace district libraries technology 17-18
> > - Assist with implementation of library maker space
> > - Video Production 17-18
> > - Replace equipment that cannot be replaced by VDI Technology 17-18
> > - Continue editing and implementing K-12 Technology Curriculum (ongoing)
> > - Replace teacher laptops (16-17)
> > - Review/Upgrade educational software (ongoing)
> > - Research replacement Interactive Whiteboard technologies

Strategy – The Staff will share, utilize, and have staff development on proven and effective lessons, techniques and resources for 21st century teaching and learning.

Activities

- Ongoing staff development on 21st century teaching and learning methods
- Continue Instructional Technology Liaison
- Maintain Information Services Media Resources
- Investigate additional media resources for students
- Investigate grants from different foundations to create partnership opportunities
- Maintain and expand (update/add encoders) vBrick system to share video content (investigate other viable options)

Strategy – Investigate ways to facilitate increased access to technology for students and staff.

Activities

- Augment network/wireless as required to support increased technology access
- Purchase support software/licensing to support increased technology access
- Purchase hardware/devices to support increased tech access
- Staff training and professional development to support increased access to technology
- Provide access to student training resources
- Increase technology staff to support increased access to technology

Strategy – The District will use innovative strategies to meet curricular needs that overcome geographical barriers.

Activities

- Maintain the equipment and software for Cyber Academy
- Continue Instructional Technology Liaison
- Maintain an online curriculum to be used for cyber academy, enrichment, remediation and other activities
- Maintain Information Services Media Resources
- Expand use and training of Office 365 for Education
- Continue to provide office at home for staff and students.
- Home VDI connection Portal.
- Website and Intranet as tool for disseminating at home access to school resources

Goal – The management and administration of the District network resources will continue to be highly efficient and effective.

Strategy – The District will make frequent and regular use of technology to manage and disperse information in the most efficient way.

Activities

- Review, update, and implement document management & electronic records procedures (16-17)
- Update and maintain domain registration and DNS.
- Investigate digital signage initiative.
- Replace network/server UPS and/or batteries (three-year rotation starting 16-17)
- Replace network switches – ERate - (16-17)

- Maintain automated phone calling system for contacting parents and staff
- Review and maintain district website
- Increase WAN connectivity to 10GB (17-18)
- Increase internet bandwidth to 150mb (16-17)
- Evaluate ISP bandwidth (18-19)
- Expand, monitor, and maintain wireless coverage and infrastructure as needed

Strategy – Technology systems and procedures will be expanded and/or updated to efficiently maintain data.

Activities
- Create training plan for all office staff regarding software productivity applications and hardware systems
- Student Information System review and update user meeting.
- Maintain Student Management System
- Maintain Microsoft EES licensing agreement
- Maintain Document Management System
- Maintain Financial Management System
- Maintain Library Information Management System
- Maintain Food Service Management System
- Maintain Maintenance Department Support and Management System
- Maintain support and maintenance on all infrastructure components such as Servers, Data and Communication Equipment, etc.
- Ongoing staff development on the Student Management System
- Maintain, monitor, and upgrade network security systems.

Strategy – Technical support and resource requests will be completed in an efficient manner.

Activities
- Review the need to augment IT support staff based upon district initiatives
- Use of end of year and ongoing surveys to check effectiveness of IT staff and support procedures.
- Continue use of IT Helpdesk software
- Maintain the IT Department Standard Operating Procedures
- Update and train staff on IT Helpdesk procedures and updates.

Goal – The District will promote a safe, secure and positive environment as related to technology systems.

Strategy – The District will provide network and client security components on all systems.

Activities
- Maintain firewall
- Maintain anti-spam and email archiving systems
- Maintain active anti-virus subscription
- Develop and maintain internet safety training for staff and students
- Maintain web filtering system subscription
- Review web filtering system's effectiveness and content delivery efficiencies
- Develop systems to promote a safe and secure communications between staff and students
- Maintain mobile device management (MDM) cloud system

Strategy – The technology department will work with other departments to ensure all non-technology based security and building maintenance systems and procedures function as desired.

Activities

- Review new and ongoing requirements for 3rd party security systems as they apply to the computer network.
- Assist with reviewing support agreements required for 3rd party security systems
- Assist with maintaining and upgrading HVAC and technology interactions and support.

6. Yearly Activities and Budget

2016-2017			
Plan	**Estimated Expense**	**Recurring Cost**	
Continue VDI infrastructure desktop replacement (remaining classrooms and offices)	$18,000		
Replace teacher laptops	$190,000		
Replace network/server UPS and/or batteries (year 1 of 3)	$5,000		
Replace network switches	$40,000*		
WiFi system upgrade (Middle School)	$6,000 **		
Increase internet bandwidth to 150 mbps	$4,700/yr***	$4,700/yr	
iPads - hardware and software - 7th grade	$35,500 (3yr lease on hardware - $28,000 yr)	$5,000/yr	
* District portion of $190,000 total price tag – pending Priority 2 ERate approval			
** District portion of $25,000 total price tag – pending Priority 2 ERate approval			
** District portion after 80% ERate discount (currently paying $6,700 for 60 mbps)			

2017-2018			
Plan	**Estimated Expense**	**Recurring Cost**	
Increase WAN connectivity to 10GB* - 3 year contract	$12,000/yr	$12,000/yr	
Add IT support staff	$60,000	$60,000/yr	
Upgrade VDI infrastructure	$20,000		
Replace MS Graphics/CAD labs	$60,000		
Review other aging desktop systems that need to be replaced			
Replace network/server UPS and/or batteries (year 1 of 3)	$7,500		
iPads - hardware and software - 8th grade	$35,500 (3yr lease on hardware - $28,000 yr)	$5000/yr	
Upgrade/Replace library hardware	$20,000		
* District portion after 80% ERate discount – pending Priority 1 ERate approval			

2018-2019			
Plan	**Estimated Expense**	**Recurring Cost**	
Evaluate ISP Bandwidth	$1/per mb		
Replace HS Graphics/CAD labs	$60,000		
Review other aging desktop systems that need to be replaced			
Replace network/server UPS and/or batteries (year 1 of 3)	$10,000		
One-to-one grades 9-12 – hardware	3yr hardware lease – $150,000/yr + $20,000 software	$15,000/yr	
Replace 2 ESX hosts for virtual environment	$18,000		
Replace 2 MS Windows mobile carts	$60,000		
Replace 4 MS iPad carts	$54,000		

In addition to the items presented in the previous **Yearly Activities and Budget** section, below are the recurring IT department objectives and items that we currently support and will continue to maintain through the next 3 years.

Ongoing / Perpetual Plan	Yearly Recurring Expense
Review/Upgrade educational software	$30,000
Maintain vBrick system to share video content	$7,000
Maintain the equipment & software for the Cyber Academy	$10,000
Maintain an on-line curriculum to be used for the Cyber Academy, enrichment, remediation and other activities	$30,000
Maintain automated phone calling system to contact parents & staff	$9,000
Review and Maintain District website	$5,000
Maintain Parent/Emergency Notification System	$6,500
Maintain Student Management System	$15,000
Maintain Instructional Management System	$25,000
Maintain Document Management System	$15,000
Maintain Financial Management System	$12,000
Maintain Library Information Management System	$10,000
Maintain Food Service Management System	$5,000
Maintain Maintenance Department Support and Management System	$4,000
Maintain Support and Maintenance on all Infrastructure Components such as Servers, Data (wired and wireless), and Communication Equipment, etc.	$40,000
Continue use of the IT Helpdesk software	$3,000
Maintain firewall	$5,000
Maintain web content filtering system	$4,500

Maintain Microsoft EES licensing agreement	$21,000
Maintain virtual environment – licensing	$30,000
Maintain active Anti-virus subscription	$15,000
WAN and internet service	$35,000
Maintain Mobile Device Management system	$10,000
Investigate grants from different foundations to create partnership opportunities	
Review new and ongoing requirements for 3rd party security systems as they apply to the computer network	
Maintain Support Agreements required for 3rd party security systems	
Ongoing staff development on the Student Management System	
Continue Student Information Committee meetings and documentation	
Maintain the IT Department Standard Operating Procedures	
Maintain training for all Office Staff on basic office technologies	