MISSOULA COUNTY PUBLIC SCHOOLS

Instructional and Information Technology Plan 2015-2019

MISSOULA COUNTY PUBLIC SCHOOLS

Forward Thinking, High Achieving.

Table of Contents

In response to the MCPS 21st Century Model of Education and the Achievement for All five-year strategic plan, this five year technology plan represents a vision for growth and development that will bring the MCPS technology infrastructure and our approach to technology-integrated learning into the forefront of educational best practices.

This plan reflects new district leadership, funding and opportunities for dramatic change in conjunction with the Smart Schools 2020 facilities strategic plan.

When the 2008-12 technology plan was developed, "smart" phones were just a fraction of the cell phone market, the iPad was still a year away, and "cloud" computing wasn't a term most people had heard. The 2012-15 technology plan was updated to reflect some of these changes, but the District was not able to keep on track with many of the goals as outlined in that plan.

The MCPS 2015-2019 Tech Plan lays out key leadership and direction for the following elements of technology within the District:

- Digital Citizenship Curriculum
- Professional Development
- Internal Infrastructure Upgrades
- Network Management and Monitoring
- Software Selection for Curriculum, Business, and Network Monitoring
- Device Selection for Curriculum and Business functions
- Budget allocation for devices, software, peripherals, professional development and repair/replacement costs

In 2014, Missoula County Public Schools released the Achievement for All Plan. This five-year strategic plan integrated the community's desires and District goals articulated in 2010 in the 21st Century Model of Education.

The *Achievement for All* Plan acts as a guide for all staff within MCPS. The current Instructional and Information Technology Plan is aligned with the *Achievement for All* plan and the goals articulated in the plan.
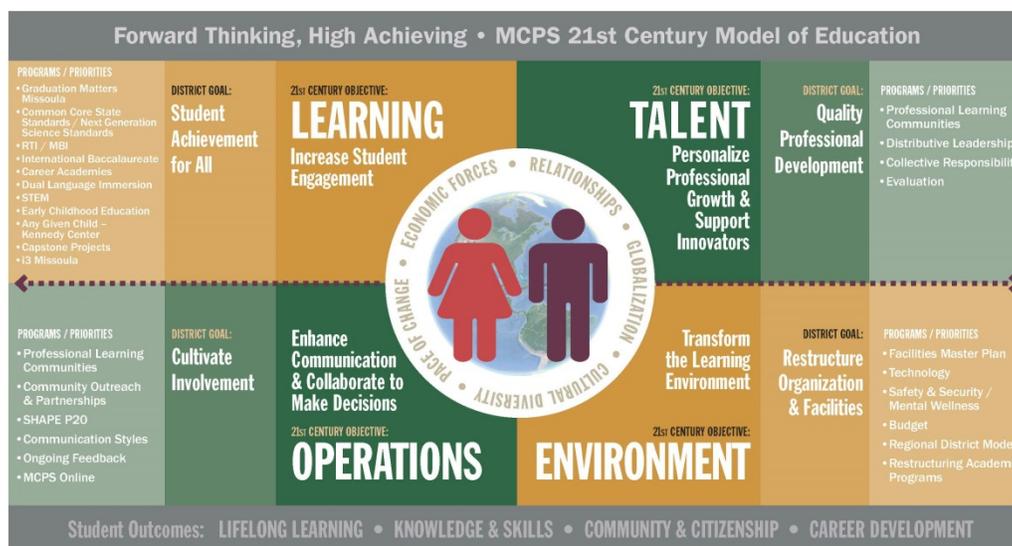
Together, we are rethinking the concept of technology as just a tool for getting things done. The synergy of new technologies and new approaches to teaching and learning establishes the conditions for transforming learning in ways we cannot predict just by understanding the use or purpose of each tool or technique in isolation. This indefinable quality is critical to the creative process as innovation takes place at the edges of the known, pushing our understanding past the currently understood and accepted limits.

As staff are called upon to "create the conditions that facilitate creative and innovative behavior" for the students, so, too, must the District work to create these conditions for all staff. This update of the MCPS Instructional and Information Technology Plan seeks, above just providing tools, to establish the conditions necessary for new kinds of instructional environments to exist.

Throughout this plan, there are milestones for the review, revision, and, in some cases, creation of district policies, procedures and guidelines, implementation and integration plans, professional development plans, and leadership models necessary for all staff and students to be successful.

By June of 2019, you should expect our technology within MCPS to embody these characteristics:
- Technology will be transparent. When students and staff walk into the classroom, they expect the lights to turn on, the heating and cooling systems to work and the water to flow out of the faucets. The same will be true with regard to classroom technology.
- Wired and wireless access will be available in every classroom, in every school.
- All schools will transmit data within the Wide Area Network (WAN) at 1 GB speeds. High schools may transmit data at 10 GB speeds. All schools will have at least a 1 GB connection to the Internet (pending service availability and costs from local Internet Service Providers).
- Students and staff will be able to connect to the network quickly, they will be assigned a set of permissions to the network, and they will be able to work with district-owned devices or personal devices based on individual preference.
- We will reach a 2:1 student to device ratio in every school by creating universal access to a range of devices within schools.
- We will support multiple cloud-based platforms for collaboration and creation (i.e. Google Apps for Education (GAFE), Office 365).
- We will provide on-demand online learning opportunities for staff and students to improve technology skills and content knowledge as well as face-to-face training in small and large groups.
- We will have an integrated planning model that includes Title 1, Special Education, Teaching and Learning, Instructional Coaches and teaching staff in buildings with regard to software and hardware selection and implementation.
- All staff will feel confident to support students' growth as digital citizens.

Committee Members

Digital Citizenship Subcommittee:

- Crista Anderson – Regional PLC Coach
- Michele Nokleby – Librarian, Hawthorne Elementary School
- Sidney Hahn – Librarian, Cold Springs Elementary School
- Rebecca Krantz – Librarian, CS Porter Middle School
- Patricia Marne – Librarian, Russell Elementary School
- Nancy Peterson – Librarian, Paxson Elementary School
- Mary Greil – Librarian, Chief Charlo Elementary School

Professional Development Subcommittee:

- Robyn Nuttall – Regional PLC Coach
- Katy Koster – Teacher, Rattlesnake Elementary School
- Cindy Schultz – Teacher, Sentinel High School
- Jon Fines – Teacher, Cold Springs Elementary School
- Christine Fogerty – Librarian, Big Sky High School
- Kasey Dirnberger – Teacher, Meadow Hill Middle School

Device Selection Subcommittee:

- Junell Lawrence – Librarian, Willard Alternative High School Program, Big Sky High School
- Robin Nygren – Librarian, Rattlesnake Elementary School
- Brittnie Keilman – Teacher, Washington Middle School
- Raymond DeBruycker – Teacher, Meadow Hill Middle School
- Scott Chook – Teacher, CS Porter Middle School
- Dylan O'Leary – PC/Network Technician

Software Selection Subcommittee:

- Ezra Shearer – Teacher, Sentinel High School
- Theresa McGeary – Occupational Therapist,   Special Education
- Katrina Stout – Librarian, Seeley-Swan High School
- Scott Nordtome – Librarian, Lewis and Clark Elementary School
- Alison Boone – Librarian, Franklin Elementary School
- Tricia Owens – Teacher, Lowell Elementary School

Infrastructure Upgrade Subcommittee:

- Russ Hendrickson – Senior Information Systems Manager
- Maurice Austin – Network Coordinator
- Jacob Mandell – Network Coordinator
- Cindy Arnott – Teacher, Meadow Hill Middle School
- Jody Rasmussen – Lifelong Learning Center
- Katie Boynton – School Counselor, Hellgate High School
- Beth Cole – Teacher, Hellgate High School

*The Director of Technology and Communication as well as the members of this committee would like to thank Matt Clausen, the former Director of Creativity and Innovation, as well as members of previous District Technology Committees for their contribution to previous District plans that supported the creation of this plan.

Goal 1
MCPS will ensure all administrators and staff effectively integrate technology standards into MCPS curriculum to empower all to communicate, collaborate, think critically, and create.

Objective 1.1	All schools will be provided with universal tools for helping students become good digital citizens.

Strategies	MCPS will…
	 ● Incorporate aspects of digital citizenship and technology literacy into and across MCPS curriculum areas.
	 ● Common Sense Media Curriculum
	  ● Videos
	  ● Digital Passport (grades 3-4-5)
	  ● Digital Compass (Middle School)
	  ● Digital Bytes (High School)
	  ● Posters
	  ● Grade-by-grade suggested lessons
	 ● Incorporate 21st Century student outcomes from the MCPS Achievement for All Plan and 21st Century Model of Education into lesson design.
	 Teachers will have access to a variety of resources on digital citizenship. Librarians will disseminate digital citizenship materials to all staff at the beginning of the school year.
	 ● Pause & Think Online Poster (Common Sense Media)
	 ● ISTE Digital Citizenship Poster
	 ● Shared clearinghouse of resources, including Common Sense Media.
	 ● Your school library is a great resource for materials.
	 ● Teacher Copyright Infographic
	 ● Fair Use Guidelines

Responsibility	Executive Regional Directors, Director of Technology and Communications, Regional PLC Coaches, Librarians, All Staff
Measure	● Integration of technology learning targets are identified across curriculum standards' documents ● Lesson plans containing digital citizenship within subject areas ● Use of online presence for extending the classroom learning
Current Status	● Library Information Media and Technology Curriculum documents include learning targets addressing digital citizenship and technology literacy. ● English Language Arts curriculum review is incorporating online literacies.
Timeline	**SY 2015-16** Science, Health Enhancement and Social Studies Materials Purchase (Recommendations) **SY 2016-17** CTE **SY 2017-18** English Language Arts **SY 2018-19** Math
Funding	Tech Levy PD; Curriculum

Objective 1.2	All students will be safe, respectful, and responsible digital citizens.
Strategies	MCPS will… ● Provide visual displays for each classroom defining good digital citizenship (poster) ● Provide methodical and comprehensive instruction in digital citizenship ● Provide opportunities for students to practice good digital citizenship ● Assess student progress toward mastery of lesson targets ● Recognize students who demonstrate exemplary digital citizenship ● Respond to lapses in student citizenship with appropriate correction on a case-by-case basis
Responsibility	● School librarians will assume primary responsibility for disseminating visual displays and explaining content ● School librarians will continue to provide instruction in Digital Citizenship as per the Library Media Curriculum document ● Librarians, together with collaborating teachers, will monitor student citizenship in school in order to recognize exemplary behavior and correct lapses. Parents will team with teachers to monitor off-campus citizenship. ● All staff will recognize good digital citizenship as part of school-wide MBI recognition. ● Health/P.E. staff will contribute to promoting screen time awareness ● Principals may be called upon to provide appropriate consequences for lapses in citizenship in some cases. ● The Director of Technology and Communication will consult with the principal in instances where board policy and/or student Acceptable Use Agreements are violated.
Measure	● Lesson plans pertaining to Digital Citizenship ● Summative and Formative student assessments ● Spot checks by ISC on the Suspicious Search Query Report and moderation on interactive activities ● Building MBI data, office referrals ● Current board policy and Acceptable Use Agreements
Current Status	● Digital Citizenship is an integral component of the Library Media Curriculum. As such, it is being covered in each building. However, the mode of delivery and assessment may vary from site to site. ● We must recognize that students are using electronics at ever earlier ages and devise classroom learning opportunities that reflect this reality ● As more teachers adopt digital enhancements for their students, students will have more frequent opportunities to practice good citizenship (e.g.: GAFE suite, blogging, BYOD initiatives)
Timeline	**SY 2015-16** Science, Health Enhancement and Social Studies **SY 2016-17** CTE **SY 2017-18** English Language Arts **SY 2018-19** Math
Funding	Technology Fund PD, Curriculum (Funding would be needed to cover the printing/laminating costs of one ISTE Digital Citizenship poster for every MCPS classroom, High School design classes to design HS version.)

Objective 1.3	Teachers create opportunities that extend the classroom/online presence (blended and online learning opportunities).
Strategies	- When materials are selected, curriculum committees will look for opportunities to incorporate an online presence. - Common Core State Standards require opportunities for students to publish online and work collaboratively. These are excellent opportunities to review Digital Citizenship within a classroom project. - When online components, GAFE, or additional digital resources are being used for a class, teachers will model good digital citizenship for students.
Responsibility	All teaching staff, Principals
Measure	Student behavior will reflect the tenets of good digital citizenship on all online class resources.
Current Status	Informal efforts are in process.
Timeline	**SY 2015-2016** Google Cadre focused on Universal Design for Learning including the needs of students requiring Special Education interventions or identified in the COMPASS program. **SY 2016-2017** Technology Cadre focused on blended learning **SY 2017-2018** Technology Cadre focused on innovation at the edges
Funding	Technology Fund

Objective 1.4	Teachers will consider digital citizenship during curriculum review.
Strategies	- MCPS will provide up-to-date information on digital citizenship at the beginning of each curriculum document. - Committee suggests ISTE Digital Citizenship poster and Teacher Copyright Chart for year one. - Staff reviewing curriculum will include language that reflects the goals (see above) of the district to develop all students into safe, respectful, responsible digital citizens. - When materials are selected, curriculum committees will look for opportunities to incorporate an online presence.
Responsibility	Members of each Curriculum Review Committee, Regional PLC Coaches, Executive Regional Directors
Measure	All curriculum documents will begin with digital citizenship information, and participants will consider this information when updating and delivering curriculum. Digital citizenship will be addressed in each subject area.
Current Status	Integration of digital citizenship is an integral component of the K-12 Library Media Curriculum. It should be an integral component in all curricular areas.
Timeline	**SY 2015-2016 Update** curriculum for the year to include these strategies. **SY 2016-2017 Continue** to update curriculum with these strategies. **SY 2017-2018 Continue** to update curriculum with these strategies.
Funding	Curriculum

Objective 1.5	Schools will provide resources and information to parents about digital citizenship.
Strategies	MCPS will… ● Use Common Sense Media as a source to disseminate digital citizenship information to parents via school websites, Facebook pages, school newsletters, parent/family nights, or other tools.
Responsibility	School Librarians, Principals, FRC Coordinators
Measure	Each school can provide documentation of website links, parent attendance records, promotional efforts, and/or school newsletter archives.
Current Status	Informal efforts are underway.
Timeline	**SY 2015-2016** Each school librarian maintains a link on the school website to either Common Sense Media or another appropriate digital citizen material. Principals will include Digital Citizenship guidelines within specific sections of school newsletters and in email blasts to parents, Facebook posts, Tweets and on school's main webpage. Schools will host Digital Citizenship nights as part of the Family Resource Center programming. **SY 2016-2017** Continue efforts to improve parent communication regarding digital citizenship within all communication channels. **SY 2017-2018** Continue efforts to improve parent communication regarding digital citizenship within all communication channels. Pursue District certification with Common Sense Media.
Funding	Website directors staff time, Family Resource Center parent night funds, (free online digital content), school printing budgets, free social media outreach

Goal 2
MCPS will ensure the professional growth and development of all staff in technology skills and the integration of technology in all areas of the curriculum.

Objective 2.1	MCPS will ensure a comprehensive integrated technology professional development program that is driven by an on-going district-wide needs assessment and that is aligned to State Technology & Common Core Standards.
Strategies	MCPS will… ● Develop a tech skills assessment for all district staff. ● Develop a mechanism for teachers to develop competencies. ● Provide administrative rights to their district provided workstations upon completion of qualifying badges. ● Provide 2 hours PIR for successful completion of three badges.
Responsibility	Executive Regional Directors and Director of Technology and Communications, PLC Instructional Coaches, District Technology Committee, Building Technology Committees and Principals
Measure	Analysis of Technology Professional Development Assessment data delivered through Moodle, analysis of needs assessments; staff participation and feedback from trainings and online courses.
Current Status	Technology Standards (ISTE) and learning targets have been developed; Moodle course shell has been created with learning targets.
Timeline	**Summer 2015** Moodle course will be completed. **Fall 2015** Moodle course will be implemented **2015-20** Teachers will be expected to earn 2 hours PIR in technology each year within their currently established PIR requirements until the course is completed or badges are earned (whichever occurs first).
Funding	Technology Levy PD; Curriculum; Building PD funds

Objective 2.2	MCPS will ensure ongoing, on-demand, global, cross-curricular professional development opportunities for all staff.
Strategies	MCPS will… ● Support a range of flexible, district-wide trainings, including synchronous & asynchronous online opportunities, site-based, vendor-provided, summer tech camps, traditional PIR, etc. ● Integrate technology as an anchor component embedded into and within all professional development. ● Develop district and building level needs assessment.
Responsibility	Executive Regional Directors and Director of Technology & Communications, PLC Instructional Coaches, District Technology Committee, Building Technology Committees and Principals
Measure	Analysis of Technology Professional Development Assessment data delivered through Moodle, analysis of needs assessments; staff participation and feedback from trainings and online courses. *Three badges is equivalent to 2 hours of PIR*
Current Status	Training is provided as needed by individual buildings. All Principals and Executive Regional Directors have been trained in Google Apps for Education. Teacher Trainings include building level, online, GAFE cadre and Google face-to-face training from peers in PLCs.
Timeline	**2015-16** School year PLCs will use GAFE to communicate. **2015-16** Principals will model GAFE use. Analyze tech training needs assessment Determine timeline for professional development sessions. Continue to reevaluate needs to determine what PD is needed.

	2016-17 Analyze tech training needs assessment Determine timeline for professional development sessions. Continue to reevaluate needs to determine what PD is needed. **2017-18** Analyze tech training needs assessment Determine timeline for professional development sessions. Continue to reevaluate needs to determine what PD is needed. **2018-19** Analyze tech training needs assessment Determine timeline for professional development sessions. Continue to reevaluate needs to determine what PD is needed.
Funding	Tech Levy PD; Curriculum, Building PD funds

Objective 2.3	**MCPS will ensure support for ongoing, job-embedded, on-demand technology integration professional learning opportunities through the instructional coaching model.**
Strategies	MCPS will… ● Provide building-based instructional coaches. ● Support the instructional coaches in the development of best practices in integrating technology.
Responsibility	Executive Regional Directors and Director of Technology & Communications, PLC Instructional Coaches, District Technology Committee, Building Technology Committees and Principals
Measure	Implementation of coaching positions; analysis of needs assessments; staff participation and feedback from coaching process
Current Status	Three regional PLC coaches who support assessment, curriculum, and technology integration. Two additional Title 1 instructional coaches who support technology integration in math and reading instruction.
Timeline	**2015-16** One coach per region Coaches will meet with building level tech teams monthly for technology integration. **2016-17** Two coaches per region **2017-20 Increase** in Coaches FTE per building.
Funding	General Fund; Building PD funds; Technology Funds

Goal 3
MCPS will make decisions regarding software selection that include all stakeholders district-wide in district users appropriately, and funnel all purchases through ISC to ensure consistent and efficient implementation.

Objective 3.1	The software selection subcommittee of the District Technology Committee will provide leadership on software purchase and implementation.
Strategies	MCPS will… ● Form a committee to determine the selection and renewal of district-wide software, i.e. Schoolwires website platform, Q (Student Information System), Tyler Munis (district Enterprise Resource Planning system), Microsoft Office, keyboarding software, etc. ● Ensure that the committee is representative of all stakeholders and bargaining groups. ● Inform all stakeholders of the current software replacement cycle. ● Schedule meetings with time for public comment prior to any final decision being made.
Responsibility	District Tech Committee, ISC, Director of Technology and Communications
Measure	Agendas for committee meetings, documents requesting specifications from vendors and input from PLCs
Current Status	There is not a committee that performs these functions. The current subcommittee is responsible for the language included in this technology plan.
Timeline	**SY 2015-16:** Target participants and create a representative committee by October 31st 2015. • Review the representation of the committee and invite additional participants as needed. Membership will vary based on what software subscriptions are expiring. • Evaluate current instructional and business software licenses and expiration dates. • Tech Committee will publish and distribute replacement cycle information and call for public comments. Meetings will be set early to allow adequate notice to all stakeholders. • Make recommendations for key software review by the committee. • Request demonstrations from software vendors and solicit feedback and input from staff via PLCs and building technology committees. **SY 2016-17:** Repeat process as necessary; make adjustments to membership and software reviews based upon attrition and current district needs. **SY 2017-18:** Repeat process as necessary; make adjustments to membership and software reviews based upon attrition and current district needs. **SY 2018-19:** Repeat process as necessary; make adjustments to membership and software reviews based upon attrition and current district needs.
Funding	Technology Fund, Special Education, Title 1, Curriculum

Objective 3.2	Appropriate Training will accompany all district-wide software purchases
Strategies	MCPS will…. • Notify the PD subcommittee via the District Technology Committee of major new software rollouts. • Budget for comprehensive training of all stakeholders with new software purchases. • Ensure end users are adequately trained in the use of district-wide software.
Responsibility	District Technology Committee, Software Selection and Renewal Subcommittee, ISC, PD Subcommittee
Measure	Multiple modes of PD offerings (face-face, small/large groups, online) will accompany any roll-out of new software.
Current Status	Our current PD offers for new software not universally available.
Timeline	Dependent upon purchase and replacement cycle of new software.
Funding	Technology Fun, Special Education, Title 1, Curriculum

Objective 3.3	Building level software purchasing will be handled by the Information Systems Center Department
Strategies	MCPS will… • Create a streamlined process for classrooms and buildings to purchase specific software for their needs. • Ensure that the process is efficient and time-sensitive. • Buildings will provide budget codes to ISC to complete purchases utilizing building funds. • ISC will combine and purchase programs to get the best volume pricing. • ISC will track licensing of software along with building librarians.
Responsibility	ISC
Measure	Stakeholders are able to purchase software through ISC in an efficient manner.
Current Status	Buildings purchase small licenses of software on their own, software is purchase via Title 1, Software is purchased via ISC. Collaboration between these entities is not sufficient.
Timeline	**SY 2015-16:** ISC will establish a protocol for buildings or departments to follow using Tyler Munis or other means to purchase software. Building Tech Committees or other representatives will inform appropriate stakeholders of the new process for purchasing software. ISC will evaluate the effectiveness of their process using feedback from The District Tech Committee. ISC will distribute Windows 10 to all district-owned computers. ISC will work with the Software Selection and Renewal committee to establish a protocol for student and staff home access to Microsoft Office. ISC will work with district librarians to develop of process for tracking the licensing of software. **SY 2016-17:** Changes to protocol as necessary. Continuation of training For department heads and other attrition of appropriate stakeholders. ISC will roll out Office 365 for staff and students in pilot groups. **SY 2017-18:** Continuation of the review process.
Funding	Technology Fund, Special Education, Title 1, Curriculum

Objective 3.4	MCPS will ensure that a comprehensive list of software programs is current and available to all stakeholders
Strategies	MCPS will… • Survey users and systems to determine software use which includes administrative, certified (K-12 representation), classified, and business building representatives. • The Software Selection and Renewal Subcommittee will update the list of software programs yearly. • Building Technology Committee representatives will meet with Software Selection and Renewal Committee two times per year to see if current software needs are being met.
Responsibility	District Technology Committee, Software Selection and Renewal Committee, Building Technology Committee, ISC
Measure	Comprehensive inventory that is easily available for consultation. Inventory should feature grade level and subject, as well as licensing information.
Current Status	There is an incomplete list currently available as a spreadsheet titled "MCPS District Software Management and Support." This list is out of date and does not reflect the current reality of day-to-day software use district-wide. The Software Selection and Renewal Subcommittee (2014-2015) gathered data about current software use. The results are included on a document titled, "Software Survey Responses."
Timeline	**SY 2015-16:** Seek volunteers for the Software Selection Subcommittee from within the District Technology committee. Committee to determine whether software is renewed or if new programs are needed. **SY 2016-17:** The committee will meet to update the list once during the fall and once during the spring. **SY 2017-18:** The committee will meet to update the list once during the fall and once during the spring.
Funding	Technology Fund, Title 1, Curriculum Materials fund

Objective 3.5	ISC will allow end users administrative privileges to install software (see Goal 2, Objective 2.1)
Strategies	MCPS will… • Provide training opportunities for staff seeking advanced administrative functions on their district-provided computer workstations. • Upon earning appropriate badges, ISC will provide end users with the flexibility necessary to add limited software updates to their district-provided computer workstation that promote staff efficiency and promote student learning.
Responsibility	ISC
Measure	End users who have earned appropriate badges that request admin rights are granted rights in an efficient manner.
Current Status	Limited due to current network infrastructure, security concerns and end user knowledge and skills.
Timeline	**Summer 2015** Moodle course to train and test staff technology skills will be completed. **Fall 2015** Moodle course will be implemented. **2015-20** Teachers will be expected to earn 2 hours PIR in technology each year until the course is completed or badges are earned (whichever occurs first). Teachers earning the Level 3 badge will be granted administrative rights to their district-provided computer workstations.
Funding	Technology Fund

Objective 3.6	ISC will create a system that allows teachers to add apps to mobile devices and extensions to the Chrome browser
Strategies	MCPS will… • Identify and purchase a mobile device management program that allows end users sufficient means of independence in managing district owned mobile devices in the classroom • Provide a means to regulate purchases via a purchase order system • Empower teachers to install apps on demand for instructional use. • Create a process for staff to submit requests to add extensions on the Chrome browser and provide access to extensions upon approval.
Responsibility	ISC
Measure	Staff management of mobile devices within buildings
Current Status	Lightspeed program, limited implementation and roll-out
Timeline	**SY 2015-16:** ISC will identify and purchase the MDM **SY 2015-16:** ISC will train key building staff and roll out a pilot program to Big Sky, Chief Charlo, Paxson and Hawthorne. Based on results, ISC will offer to roll out to additional schools starting in the summer of 2016. **SY 2016-20:** All new mobile devices purchased in the District will use the MDM and protocols established.
Funding	Technology Fund

Goal 4

MCPS will ensure filtering, data access and archiving policies and procedures that support teaching and learning while maintaining compliance with federal law and network safety and security.

Objective 4.1	MCPS will ensure a focus on student and staff responsibility by increasing access to appropriate resources while still maintaining federal required filtering and data access safeguards.
Strategies	MCPS will… • Develop materials for and support ongoing staff and student understanding of core digital citizenship concepts of online safety and responsibility. See Goal 1. • Review and revise as necessary all relevant Board policies and District procedures to best support technology integration, professional use of technology, and appropriate access to student data. • Develop and provide mandatory trainings in order to eliminate frustration and empower staff to take charge of their digital destiny (for example, requesting a site be unblocked, appropriately bypassing the filter, using available tools to provide access in safe and appropriate ways).
Responsibility	Director of Technology and Communications; Network Coordinators, Senior Information Systems Manager, Regional PLC Coaches, District Technology Committee, Professional Development Subcommittee, Principals; Executive Regional Directors; Superintendent, Board of Trustees
Measure	Internet filter survey results; participation in trainings; reviewed/revised policies and procedures
Current Status	Library Information Media and Technology Curriculum documents include learning targets addressing digital citizenship and online safety. Filtering procedures are reviewed regularly by the Senior Information Systems Manager and Network Coordinators. Board policy 3630, Cell Phones and Other Electronic Devices was updated in 2014. Board policy 5450, Employee Electronic Mail and Online Services Use was reviewed by the District Technology Committee in 2013-14. It will be reviewed again in 2015-16 and submitted to the board for revision by June 2016. Board policies regarding trustee email accounts and long term archiving of data will be discussed and created in 2015-16.
Timeline	**SY 2015-16**: Review and revise all relevant Board policies and District procedures; develop materials for and support ongoing staff and student understanding of core digital citizenship concepts of online safety and responsibility; develop and provide trainings **SY 2016-17:** Review and revise all relevant Board policies and District procedures; review and modify materials and trainings as necessary **SY 2017-18:** Review and revise all relevant Board policies and District procedures; review and modify materials and trainings as necessary **SY 2018-19:** Review and revise all relevant Board policies and District procedures; review and modify materials and trainings as necessary
Funding	Technology Fund PD

Objective 4.2	MCPS will ensure fair and transparent process for filtering decisions that recognizes teacher professionalism and academic freedom in accordance with Board Policy 2330 as well as federal law
Strategies	MCPS will… • Conduct a review of the current filtering categories, evaluating appropriateness of settings for Guest, Elementary, Middle School, High School, and Staff levels of access. • Develop and communicate clear and transparent processes for reviewing blocked websites. Develop and implement a clear and transparent process that allows teachers to bypass the filter in support of instructional objectives.
Responsibility	Director of Technology and Communications, Senior Information Systems Manager, Network Coordinators, District Technology Committee, Building Technology Committees
Measure	Internet filter survey results; processes developed and in place
Current Status	Filtering procedures are reviewed regularly by the Senior Information Systems Manager and Network Coordinators.
Timeline	**SY 2015-16:** Complete review of filtering categories; develop and communicate clear and transparent processes for reviewing blocked websites; develop and implement a clear and transparent process that allows teachers to bypass the filter in support of instructional objectives **SY 2016-19:** Continual review of filtering policies to ensure compliance with federal law and updates to filtering software.
Funding	Technology Fund PD

Goal 5
MCPS will ensure the technology plan is responsive to changing technologies and supportive of the teaching and learning needs of the District, building, classroom, and specialized departments.

Objective 5.1	MCPS will ensure that each building has the support necessary to incorporate technology into building goals.
Strategies	MCPS will… • Develop a system for tracking inventory of current building technology. • Determine who is responsible for conducting and tracking inventory of current building technology. • Conduct a yearly inventory/needs/technology use survey via Google Form survey of current building technology. • Develop a technology budget for each building and a system for allocation at the district, building, and specialized departments (i.e. District-wide Special Education, ELL) level. See Objective 7.1 & the Budget section on page 44. • Establish what equipment is paid for by: the district, the school, and departments (for high schools). • Develop a system for maintenance, replacement, and recycling of all technology resources. See Goal 7
Responsibility	Google Survey created by the District Technology Committee Devices Subcommittee and ISC. Google Survey analyzed by building principal, building technology committee and ISC. Budget plan created by Director of Technology Maintenance and renewal plan created by ISC department
Measure	Building inventories
Current Status	• Computers and related network systems are inventoried electronically; however, this system does not include devices that cannot be connected to the network. There is no uniform approach to tracking building inventories that would assist building and/or District-level decision-making. • We need to determine what technology is actually being used in the classroom, and what is not so it can be repurposed elsewhere. • The Director of Technology and Communications, in conjunction with the ISC Department needs to clarify what the district, school, and departments (at the high schools) are responsible for paying for so there is consistency within the district.
Timeline	**SY 2015-16:** Develop system for tracking building inventory; conduct inventory of building technology; develop and conduct survey of building technology needs **SY 2016-17:** Develop technology budgeting and maintenance procedures. Add devices to each school in conjunction with requests from building technology committees to achieve a 2:1 ratio by 2019. The committee will meet to look at upcoming requests once during the fall and once during the spring. **SY 2017-18:** Develop technology budgeting and maintenance procedures. Add devices to each school in conjunction with requests from building technology committees to achieve a 2:1 ratio by 2019. The committee will meet to look at upcoming requests once during the fall and once during the spring. **SY 2018-19:** Develop technology budgeting and maintenance procedures. Add devices to each school in conjunction with requests from building technology committees to achieve a 2:1 ratio by 2019. The committee will meet to look at upcoming requests once during the fall and once during the spring.
Funding	Tech Levy, General Fund, Building Reserve

Objective 5.2	MCPS will ensure a clear process for teachers and/or departments to request appropriate devices.

Strategies	MCPS will…
	 ● Establish of a checkout system:
	     ● In-building in conjunction with the school library staff
	     ● District-wide utilizing the district library
	         ▪ The district will post a searchable list of all devices in the catalog in alphabetical order on their website. The district library will provide instructions for how to check out equipment.
	 ● Develop and implement a transparent system for requesting new technology at the building and district level.
	     o See survey in Objective 5.1
	     o Create a Google Form for approved technology requests so ISC can schedule implementation appropriately
	 ● Have several devices available for preview as building technology committees or individual teachers consider options.

Responsibility	**In Building:** Building Technology Committee and Librarian **District Wide:** District Librarians **Purchasing/New Devices:** ISC Department
Measure	Establishment of checkout and request procedures. Inventory of preview devices available in the ISC department.
Current Status	Some equipment available is in the library catalog system.
Timeline	**SY 2015-16:** Establish in-building and district check-out system and procedures; develop and implement a transparent system for requesting new technology at the building and district level. Establish a preview area and appropriate inventory within the ISC department to allow staff to preview devices. **SY 2016-17:** Review and revise check-out and request systems as necessary. **SY 2017-18:** Review and revise check-out and request systems as necessary. **SY 2018-19:** Review and revise check-out and request systems as necessary.
Funding	Technology Fund, General Fund, Building Reserve, Library, Title 1, Special Education, Curriculum Materials budgets

Objective 5.3	MCPS will provide a method for each student to have universal access to a device at any given time.
Strategies	MCPS will… ● Ensure universal access, defined as providing enough available devices so that each individual student has access to a device that will facilitate the completion of classroom work. ● Research and support various means of reaching universal access, including but not limited to laptop/tablet programs, etc. ● Support a Bring Your Own Device (BYOD) option. ● Develop and implement a refurbished technology program for students who demonstrate a need.
Responsibility	Director of Technology and Communications, Executive Regional Directors, ISC Department, PLC Coaches, District Technology Committee
Measure	Annual survey (see 5.1) will provide data on current student to device ratios
Current Status	Developing a survey will determine current data
Timeline	**SY 2015-16:** Research and develop a universal access plan. **SY 2016-17:** Provide a 2:1 student to computer ratio.

	SY 2016- 20: Design and implement the universal access plan with the input of Building Technology Committees, the District Technology Committee and ISC.
Funding	Technology Fund, Title 1 Funds, Special Education Funds

Objective 5.4	MCPS will ensure policy language and support for the use of personal hardware/devices of students and staff.
Strategies	MCPS will… ● Review and revise as necessary current district policies to encourage the appropriate use of personal hardware/devices by students and staff. ● Review and revise as necessary building procedures governing the use of personal hardware/devices of students and staff.
Responsibility	Director of Technology and Communications; Senior Information Systems Manager; ISC, District Technology Committee; Principals; Executive Regional Directors; Superintendent, Board of Trustees
Measure	Review/revision of Board policy and related building procedures.
Current Status	
Timeline	Fall 2015: Review and revise current building procedures administrative procedures and board policy related to use of personal devices Spring 2016: Revise necessary policy and procedures ; update student handbooks; communicate changes to all stakeholders SY 2016- 20: Review and revise procedures as necessary.
Funding	Technology Fund

Objective 5.5	MCPS will ensure increased opportunities to secure alternative funding for technology-related projects.
Strategies	MCPS will… ● Distribute a list of classroom technology grants annually. ● Update administrative procedures to include requirements for grants requesting technology purchases. ● Develop resources to support staff in writing grants.
Responsibility	Director of Technology and Communications, Senior Information Systems Manager, Executive Regional Directors
Measure	Level of grant funding awarded
Current Status	Director of Technology and Communications distributes funding list, some buildings acquire technology through grant writing. Most purchasing is done without full collaboration of buildings and ISC.
Timeline	Summer 2015: Director of Technology will update administrative procedures regarding grant funding requirements. SY 15-16: Communication of new procedures to District Technology Committee, Building Technology Committees, Principals, Executive Regional Directors SY 16-20: Collaborative planning and implementation of funded projects that includes all stakeholders.
Funding	General Fund, Technology Fund, Grant Funds

Objective 5.6	MCPS will ensure the technology plan is reviewed and updated yearly.

Strategies	MCPS will…
	 • Post the formal plan on the District website.
	 • Review staff survey results yearly.
	   ○ Building inventory
	   ○ Building needs with regards to devices and software
	   ○ Staff input/comments for suggested revisions to the tech plan
	   ○ What devices/device specs and software do you feel you need for your class/program?
	 • Review and revise the technology plan each spring.

Responsibility	Director of Technology, Regional Directors, ISC Department, PLC Coaches, District Technology Committee
Measure	Staff survey results (yearly)
Current Status	Current tech plan is available on the ISC webpage; current tech plan has not been formally reviewed since 2009.
Timeline	**Spring 2015:** Invite District Technology members to contribute to the Technology Plan posted on Google Docs. **Spring (Yearly):** Distribute staff survey, review results, and revise the formal plan as necessary.
Funding	Technology Fund

Goal 6
MCPS will ensure equitable student access to 21st Century technologies by providing for district-wide growth of instructional technology.

Objective 6.1	MCPS will ensure the equitable access of hardware, software, and online licenses to educational platforms for all students.
Strategies	MCPS will… ● Conduct a technology resources survey, evaluating need by building, grade level, subject area, and program on a yearly basis. ● Increase student access to digital devices in the classroom, based on the technology survey. ● Evaluate ongoing purchasing programs, based on the technology survey, to provide current technologies to classrooms district-wide in an equitable manner. ● Incorporate requests and recommendations for new technologies from teachers, students and the public into the overall district instructional technology framework. ● Review, through the District Technology Committee, all requests and recommendations to develop a comprehensive, equitable integration timetable for including new technologies into all buildings and classrooms. ● Adequately support curricular initiatives such as Project Lead the Way and other STEM based curriculum with appropriate hardware and software devices.
Responsibility	District Technology Committee, Building Technology Committees, Information Systems Center, Building Administrators
Measure	Annual inventory of equipment and software available to classrooms.
Current Status	District-wide, student-to-computer support ratio is 3:1. The purchase of interactive whiteboards, LCD projectors, document cameras and student response systems for classrooms is ongoing; finishing initiatives started 7 years ago.
Timeline	Ongoing/Annual survey; evaluate results of the survey and develop recommendations for revising ongoing request and purchase programs.
Funding	General Fund, Technology Fund, Title 1, Special Education, Curriculum Funds

Objective 6.2	MCPS will ensure sufficient connectivity and data storage for students, staff, and administration and support services.
Strategies	MCPS will… ● Monitor and adjust internet bandwidth to maintain a level at or below 80% utilization during normal school hours. ● Monitor and adjust staff server and cloud-based storage to accommodate usage patterns based on average usage by building staff. Storage capacity shall equal or exceed 200% of average use. ● Monitor and adjust student server storage to accommodate usage patterns based on average usage by building students. Storage capacity shall equal or exceed 200% of average use at the end of the school year. ● Provide wireless access to all classrooms in addition to existing wired connections. ● Monitor and adjust wireless access to accommodate usage patterns.

	• Monitor and adjust wired network connectivity to accommodate usage patterns. • Monitor, obtain, and/or maintain needed contracts with service providers in accordance with FCC Universal Services regulations regarding telecommunications 'e-rate' funding. • Explore and develop community and university partnerships to incorporate fiber optic access.
Responsibility	Director of Technology and Communications, Information Systems Center, Superintendent
Measure	Ongoing assessment of usage statistics
Current Status	Internet connectivity is monitored daily and access levels scheduled for increases on the annual E-rate funding cycle with increases effective in September each year. Staff and student storage use is monitored weekly. Storage volumes are increased with server replacement. Google Drive allows for unlimited storage space for students and staff and contents are archived with Google Vault.
Timeline	**SY 2014-15:** Request and implement new Internet service contracts for additional redundant services at a minimum 300 Mbps combined service. Contract would include additional annual increase provisions for 500 to 1000 Mbps combined service over the contract life. **SY 2015 – 16** – Increase building-to-building connectivity with new service contract. Request implementations at 1000Mbps for large secondary buildings and 100-300 Mbps for elementary and middle school buildings. Increase Seeley-Swan connectivity to maximum available (or maximum necessary) with distances involved. **SY 2016- 2020:** Upgrade wired and wireless access network in all schools in conjunction with other building upgrades and construction. Replace existing wired network cables and increase capacity to accommodate increased use and wireless networking systems. Install classroom wireless networks in buildings with new wired infrastructure. **SY 2014-2020:** Engage city, county, and UM stakeholders in conversations regarding fiber optic access. Develop 2-3 year plan for partnering on fiber optic access to the Missoula community.
Funding	Elementary and Secondary building reserve levies, Elementary and Secondary Smart Schools 2020 Bonds, E-rate

Objective 6.3	All certified staff members will maintain a web presence.
Strategies	MCPS will... • require all certified staff members to maintain a webpage on the District and School webpage platform with basic information about the teacher, classes taught, clubs or activities, contact information, and a class calendar. • If staff members choose to augment their web presence with blogs, wikis or social media sites, that activity is encouraged and should be compliant with board policy and be accessible via links with the teacher's home page on the district/school web portal.
Responsibility	Director of Technology and Communications; Webmaster, Website Directors, Principals; MEA; Executive Regional Directors; Superintendent, Board of Trustees
Measure	Check list of certified staff in each building that Principals and Website Directors will evaluate.
Current Status	Variable with some staff not having a presence at all. Many external websites are just linked in School Wires.
Timeline	**SY 2015-16:** Administrators and MEA will draft contract language clarifying this expectation. **SY 2016-17:** All certified staff members will ensure that their web presence meets the minimum expectations.
Funding	Technology Fund, General Fund

Goal 7
MCPS will maintain overall district telecommunications and network equipment and systems to provide continual, up-to-date access to instructional and administrative resources.

Objective 7.1	MCPS will ensure up-to-date equipment through a district-wide replacement cycle.
Strategies	MCPS will… ● Maintain a maximum 5-year technology replacement cycle on all devices purchased by the Technology Fund to assure up-to-date equipment for student and instructor use. ● Evaluate the 5-year replacement cycle to determine if certain devices need to be replaced sooner than 5 years and/or if some devices can last longer than 5 years. ● Develop an "average device cost" model that blends into the 5-year replacement cycle. This district model will balance the number of devices purchased each year with the annual budget allotment. ● Expand the "average device cost" model to an individual building level based on total enrollment. Allow building technology committees to provide input on device choices that fit into each buildings funding allotment. ● Explore VDI technologies as a way to affordably support and/or increase the number of student devices within the district. ● Maintain a maximum 5-year technology replacement cycle for central and building network system equipment. ● Replace network operating systems on or before manufacturers' developmental cycles. ● Devices purchased with Title 1 funds, Perkins or Forward Funding, Special Education Funds, Curriculum Funds, Building based funds will be replaced with the original funding source. ● Incorporate a district recycling program that can provide used equipment to students in need and/or generate revenue for district supported programs.
Responsibility	Information Systems Center
Measure	Annual inventory of equipment Evaluation of help desk requests—volume of requests, nature of requests, percentage of successful resolutions
Current Status	Replacement cycle is in place
Timeline	**SY 2015-16:** Evaluate current district recycling and disposal procedures. Develop long term plan for the district that supports strategies listed above. **SY 2015-19:** Maintain current replacement cycle.
Funding	Technology Fund, Title 1, Building Reserve, Special Education, Curriculum

Objective 7.2	MCPS will ensure up-to-date central and administrative hardware and software through a district-wide replacement cycle.
Strategies	MCPS will… ● Maintain a maximum 5-year technology replacement cycle to assure up-to-date equipment for staff use. ● Maintain a maximum 5-year technology replacement cycle for central and building network system equipment. ● Replace network operating systems on manufacturers' developmental cycles. ● Stay up to date on manufacturer recommended software updates on all software managed through the ISC department. ● Maintain an inventory of central software and update/replace software as needed in collaboration with Title 1, Special Education, Teaching and Learning, Principals and CTE teachers.
Responsibility	Information Systems Center
Measure	Annual inventory of equipment, Annual inventory of software
Current Status	Currently, the technology fund cannot fund all of the district-wide needs for instructional or

	curriculum-based software. Current hardware inventory procedures do not provide up-to-date and accurate data. Software is currently not centrally managed.
Timeline	**SY 2014-15:** Evaluate existing software replacement cycles. **SY 2015-16:** Develop long term strategy for maintaining up to date software titles throughout the district. **SY 2016-19:** Continue supporting replacement cycle
Funding	Technology Fund, Title 1, Building Reserve, Special Education, Curriculum, Perkins and Forward Funding

Objective 7.3	**MCPS will ensure adequate support staff for operation and maintenance of instructional technology systems.**
Strategies	MCPS will… ● Provide sufficient resources for monitoring and maintaining overall technology systems usage. ● Provide sufficient district personnel for monitoring and maintaining district computer and telecommunications networks. ● Provide sufficient district personnel to install and maintain instructional technology computer equipment and software at each building. ● Provide sufficient district personnel to install and maintain instructional technology audio/video equipment at each building. ● Provide sufficient district personnel to maintain central software applications. ● Consolidate support personnel structure to provide for better coordination of support duties within available staffing.
Responsibility	Information Systems Center
Measure	Maintenance records indicating number of support calls and the ability to respond in a timely manner.
Current Status	Telecommunications personnel – two licensed security and telephone systems technicians Information Systems Center – one manager, systems administrator; 3 Network Coordinators; 1 Helpdesk/Network technician; 6 PC/Network technicians assigned to computer hardware/software; Library system – one .5 position for technical support Central software support – 1 Systems Support Specialist (financials/HR/Payroll); 1 Data Manager (duties include state reporting and internal data warehouse oversight) 1 Student Information Systems Specialist
Timeline	**SY 2014-2015** – 3 Regional PLC coaches to support with integrating technology into the classroom **Spring 2015:** Additional Network Coordinator to support district network infrastructure upgrades and monitoring, replacing one PC/Network technician position. **SY 2015- 20** – Continue the Regional PLC coach position for support with integrating technology into the classroom. Explore student run help desks in the high schools to support Level 1 direct classroom assistance with instructional use of technology.
Funding	General Fund, Technology Fund

Objective 7.4	**MCPS will ensure network infrastructure is stable, secure and robust enough to support district wide goals.**
Strategies	MCPS will… ● Aim to reach national standards and benchmarks set by CoSN and SETDA. ● Implement a full virtual server environment. ● Develop a deep directory integration for authorization and management of services and devices. ● Provide reliable backup and archiving systems for data and email. ● Wireless infrastructure capable of supporting full mobility and BYOD goals.

	● Substantial internet capability based on CoSN standards (10,000 Mbps by 2018). ● Substantial internal WAN/LAN bandwidth based on CoSN standards (100,000 Mbps by 2018).
Responsibility	Information Systems Center, ISC Departmental Inventory
Measure	CoSN standards, ISC departmental inventories.
Current Status	LAN connections within building limited to 100 meg in the majority of locations due to outdated switches and Category 5 wiring in some buildings. WAN connection between buildings limited to 100 meg. District internet bandwidth limited to 200 meg, due to lack of hardware to support the dual 200 meg connections.
Timeline	**SY 2014-2015 –** Upgrade Data Center. Implement virtual server technologies, robust SAN storage and upgrade key district servers. **Spring 2015:** Upgrade fiber connection to Sentinel HS to 10GB. **SY 2015-16 -** Upgrade all switches district wide to 1GB, with 10GB upgrade capability. ● Begin phase-out plan of unmanaged switches within classrooms in the district. ● Maximize district internet bandwidth via edge security technology by load balancing between existing internet feeds. ● Explore options to accommodate schools with existing category 5 cabling during the rollout of the Smart Schools 2020 facility strategic plan. ● Increase WAN connectivity to Big Sky HS and Hellgate HS to 1,000 Mbps direct fiber. ● Increase WAN connectivity to Seeley Swan HS to 250 Mbps. ● Increase WAN connectivity to all middle schools to 300 Mbps. ● Redesign and implement appropriate IP structure district wide that accommodates VLAN and Layer 3 technologies. ● Implement Network Access Control (NAC) system to better support wireless device access including both staff and student as well as district owned and personal devices (BYOD). **SY 2015-20 -** Strive towards national bandwidth guidelines set by CoSN for both WAN/LAN speeds and internet bandwidth. ● Develop rollout strategy for district wide classroom wiring upgrades in conjunction with available funding opportunities to be determined fall of 2015. Follow district wiring guidelines from previous work provided by We Connect Montana. ● Build up district infrastructure to support future needs in regards to IP telephony and video monitoring capabilities. ● Install full wireless implementation based on Access Consulting Design specifications. ● Continue to ensure data center hardware and software is updated to support district technology goals.
Funding	General Fund, Technology Fund, E-Rate Funding, Smart Schools 2020 Bond Funding

Project Timelines

The following timeline references hardware implementation district-wide. Instructional Hardware includes: teacher and student computers (desktops, laptops, chromebooks, tablets), classroom projectors, interactive white boards or interactive flat panel displays, document cameras, student response systems, classroom amplification.

Strategy	2015-2016	2016-2017	2017-2018	2018-2019
Student Computers	3:1 school-wide ratio	2:1 school-wide ratio *including chromebooks to increase the number of devices available per student*	2:1 school-wide ratio *including chromebooks to increase the number of devices available per student*	2:1 school-wide ratio *including chromebooks to increase the number of devices available per student*
Staff Computers	All teaching staff will be provided one computer. All support staff that require an individual computer to complete their job function will be provided one computer. Chromebooks and tablets will be distributed on an as-needed basis pending building funds, job functions and staff requests.	All devices purchased and managed by ISC will be replaced on a 5-year replacement cycle.	All devices purchased and managed by ISC will be replaced on a 5-year replacement cycle.	All devices purchased and managed by ISC will be replaced on a 5-year replacement cycle.
Ceiling-mounted Projectors Interactive White Boards/ Displays	Install to any remaining rooms requesting equipment. Develop updated AV technology roadmap for the district to reflect changes in technology including short throw projectors and flat panel display units.	Continue with AV replacement model developed in 2015-16.	Continue with AV replacement model developed in 2015-16.	Continue with AV replacement model developed in 2015-16.
Document Cameras	Installations to classrooms as requested.	Installations to classrooms as requested.	Installations to classrooms as requested.	Installations to classrooms as requested.
Student Response Systems	Installations to classrooms as requested	Installations to classrooms as requested	Installations to classrooms as requested	Installations to classrooms as requested
Mobile Laptop Labs	10 Chromebook carts purchased for PLCs trained in GAFE.	Chromebook carts purchased for PLCs trained in GAFE.	Chromebook carts purchased for PLCs trained in GAFE.	Chromebook carts purchased for PLCs trained in GAFE.
Wired building infrastructure	LAN improvements - Update Access Layer switches within buildings to accommodate 1GB connectivity. WAN improvements - Update Distribution Layer switches at each	LAN improvements - Upgrade wiring in all buildings to category 6 standards. Increase the number of network connections in each classroom to 6	In-building wiring in conjunction with construction for Smart Schools 2020 projects. Build Phase 3 of Fiber WAN.	In-building wiring in conjunction with construction for Smart Schools 2020 projects.

	building to accommodate 10GB connectivity. In-building wiring in conjunction with construction for Smart Schools 2020 projects. Build Phase 1 of fiber WAN.	drops. Increase the number of connections in each office to a minimum of 3 drops. Implementation to follow schedule aligned with Smart Schools 2020 construction timeline. WAN improvements - Implement 5-7 year switch replacement model. Build Phase 2 of Fiber WAN.		
Wireless Connectivity	Full implementation of wireless network plan in conjunction with building wiring. Work to achieve 1 WAP per classroom by 2018.	Full implementation of wireless network plan in conjunction with building wiring. Work to achieve 1 WAP per classroom by 2018.	Full implementation of wireless network plan in conjunction with building wiring. Work to achieve 1 WAP per classroom by 2018.	Full implementation of wireless network plan in conjunction with building wiring. Work to achieve 1 WAP per classroom by 2018.
Internet Bandwidth	Maximize speeds through load balancing between existing internet lines through implementation of Sonic Wall routers.	Increase district internet bandwidth to maximum speeds available. Explore options available through potential community broadband project and/or partnership with the University of Montana.	Increase district internet bandwidth to maximum speeds available. Explore options available through potential community broadband project and/or partnership with the University of Montana.	Increase district internet bandwidth to maximum speeds available. Explore options available through potential community broadband project and/or partnership with the University of Montana.

Timelines for improving the wired and wireless infrastructure in each building are currently being developed in conjunction with available funding and the long-range facilities planning process.

Ongoing analysis of hardware, software, and telecommunication needs
The Information Systems Center (ISC) is updating a district-wide routine for inventory, replacement, and maintenance schedules which, along with monitoring software, will be used to determine resource availability and services. This information is used to identify both high use and problem areas on the district network so the needs can be addressed and remedied as well as providing a basis for compatibility of new equipment. As mentioned in Goals 3 and 5, input is sought from end users on software and hardware needs and timelines for replacement or upgrades. Together this mix of information is used to provide district level implementations of new instructional equipment and software.

A separate Security/Telephone group monitors telephone systems. The individuals work with ISC in determining infrastructure needs and capabilities and with building staff to determine instructional needs. Network data and telephone systems share existing connections when possible. Phone and security systems will be updated along with network upgrades. All upgrades will be funded with elementary and high school district bonds.

The Information Systems Center (ISC) maintains monitoring programs to determine usage and need for infrastructure equipment and services. This software is used to identify both high use and problem areas on the district network so the needs can be addressed and remedied. The 10 person ISC staff along with the Senior Information Systems Manager installs and maintains hardware and software systems as well as maintains maintenance logs and evaluates overall needs for maintaining the system. Input is sought from end users on software and hardware needs and timelines for replacement or upgrades.

Hardware replacement
Computer and related network equipment is on a 5-year replacement cycle. The current inventory of approximately 4,300 machines is maintained electronically and verified annually prior to replacement. Computer specifications are determined by the Information Systems Center with the expectation that the hardware configuration will be compatible with existing networks and capable of running existing software and most new software for the next 5 years.

Hardware	2015-2016	2016-2017	2017-2018	2018-2019
Computer replacement schedule	Integrate new hardware inventory system into computer replacement model to ensure 5-year replacement.	Continue with 5-year replacement model.	Continue with 5-year replacement model.	Continue with 5-year replacement model.
Printer replacement	Begin implementation of district-wide centralized printing system. Begin phase-out of ink-jet printers other than those needed for job specific duties.	Continue expanding centralized printing system by replacing low-end ink jet printers with centralized, high-yield laser jet printers.	Continue expanding centralized printing system by replacing low-end ink jet printers with centralized, high-yield laser jet printers.	Continue expanding centralized printing system by replacing low-end ink jet printers with centralized, high-yield laser jet printers.
Server replacement	Upgrade all servers running Windows Server 2003. Re-evaluate remote server dependency at each building, centralize servers where applicable.	Implement 5-year server replacement cycle.	Implement 5-year server replacement cycle.	Implement 5-year server replacement cycle.

Software Purchase and upgrade

A common core of instructional and productivity software inventories are maintained electronically with purchases made in conjunction with computer replacement and curriculum review and adoptions. Major central software packages (accounting, library, human resources, etc.) are reviewed and replaced as needed on recommendations of the departments most utilizing the software. All software purchases are evaluated by the Information Systems Center, Teaching and Learning Department, and/or Departmental review committees and the District Technology Committee to ensure compatibility with existing hardware and software systems.

Software	2015-2016	2016-2017	2017-2018	2018-2019
MS Windows OS, MS Office (current versions)	Begin to rollout Windows 10 throughout district. Begin to rollout Office 2013 throughout district. Investigate possibility for support for Office 365.	Complete Windows 10 rollout district wide. Complete rollout of Office 2013 District wide.	Stay up to date on Windows operating systems district wide. Stay up to date on MS Office versions, including cloud-based versions.	Stay up to date on Windows operating systems district wide. Stay up to date on MS Office versions, including cloud-based versions.
Administrative Financial, Payroll and Human Resources Software	Complete migration to Tyler Munis software platform.	Stay up to date on all administrative software versions.	Stay up to date on all administrative software versions.	Stay up to date on all administrative software versions.
Student Information Systems upgrade	Upgrade SIS system to latest version, including hardware upgrades as needed. Continue to migrate core functions in the client/server application to web-based modules. Evaluate district SIS platform to determine long term solution for MCPS.	Stay up to date on SIS software versions. Potential to post an RFQ/RFP for new SIS vendor.	Stay up to date on SIS software versions. Potential to implement any changes to SIS platform as per 2015-16 study.	Stay up to date on SIS software versions.
Cloud-based Application Software	Expand use and support of Google Apps for Education. Investigate Office 365 platform to determine if this will further support technology goals at MCPS.	Continue to support cloud-based application software.	Continue to support cloud-based application software.	Continue to support cloud-based application software.
Data management/ analysis	Continue to implement PULSE and add functionality to dashboards.	Continue to implement PULSE and add functionality to dashboards.	Continue to implement PULSE and add functionality to dashboards.	Continue to implement PULSE and add functionality to dashboards.

	Consider pilot rollout of teacher dashboard.	Expand rollout of teacher dashboard.	Expand rollout of teacher dashboard.	Expand rollout of teacher dashboard.
Network Management Software	Implement KACE network management software to accommodate district-wide technology inventory, patch management and computer imaging processes.	Expand features of KACE to include district help desk ticketing system.	Stay up to date on district management software updates.	Stay up to date on district management software updates.
Adobe Creative Suite (Secondary District Academic)	Continue to support district-wide use of the Adobe Creative Suite. Ensure all locations utilizing this software are on the latest version available.	Continue to support district-wide use of the Adobe Creative Suite.	Continue to support district-wide use of the Adobe Creative Suite.	Continue to support district-wide use of the Adobe Creative Suite.
Communication Arts Library Media	Centralize district software and ensure license compliance and compatibility with current operating systems. Align software upgrade processes with software selection committee.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.
Mathematics	Centralize district software and ensure license compliance and compatibility with current operating systems. Align software upgrade processes with software selection committee.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.
Social Studies World Language	Centralize district software and ensure license compliance and compatibility with current operating systems. Align software upgrade processes with software selection committee.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.
Science Health Enhancement	Centralize district software and ensure license compliance and compatibility with current	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.

	operating systems. Align software upgrade processes with software selection committee.			
Career Tech Ed. Fine Arts	Centralize district software and ensure license compliance and compatibility with current operating systems. Align software upgrade processes with software selection committee.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.	Continue to stay up to date on software upgrades.

*Connect all curricular software with the baseline software guidelines found here:
https://docs.google.com/spreadsheets/d/1381lOE7pW9UMCdR4xjZBqjcyxc_tEPONIdYVF5e8x1I/edit#gid=426274470*

Assessment of hardware and software compatibility

All planned hardware and software purchases are submitted through a technology purchasing process. Through this process, purchases are evaluated for curricular fit by the Building Technology Committees and the District Technology Software Renewal and Selection Subcommittee and ISC for compatibility with existing technological resources. Recommendations from these groups are brought to the District Technology Committee for final approval.

Section C: Compliance with Children's Internet Protection Act (CIPA) (E-Rate and Ed Tech program requirements)

The District provides for compliance through the utilization of Lightspeed Systems Total Traffic Control software. This Security Server package provides filtering of Internet access under a 6 tiered system: guest, elementary student, middle school student, secondary student, staff, and administrative review. A NAC (Network Access Control) system is also implemented to accommodate wireless devices including BYOD devices. This system identifies each device by user group and whether it is a staff member, student or guest device. It then applies the appropriate filtering policies based on those parameters. Internet access is monitored with daily reports on access by user, time, and site. Search queries are logged and suspicious queries or messages reported. E-mail and collaboration tools are supported for general student use within Google Apps for Education in grades 9 -12, this service complies with CIPA and E-Rate guidelines. E-mail and collaboration tools for grades 3-8 are granted with parent permission and exist within Google Apps for Education. .All accounts available are also filtered for SPAM and archived for inspection as needed.

Budget

All equipment purchased by ISC, using the District Technology Fund will be replaced within five years by ISC using the District Technology Fund. All equipment purchased by buildings or special departments (i.e. Title 1, Special Education) will be replaced by the building or special department with funds identified by the building or department.

Major repairs to technology equipment will be covered by ISC using the District Technology Fund. Minor repairs due to equipment malfunction or general problems with workmanship will be covered by ISC with the support of the District Technology Fund and building funds. ISC will not fund repairs due to student misuse or classroom management (i.e. missing keys on keyboards, missing power cords, broken or missing mice). ISC will replace lost or stolen equipment with the support of the District Technology Fund and building funds. ISC will phase out support for printer repairs and replacements for desktop printers. ISC will not fund printer supplies in buildings. ISC will work toward the installation of large, multifunction printer/scanner/fax/copiers in several central places within each building to support printing and copying needs.

In instances where the Technology Fund has remaining funds at the end of the year, those funds will be allocated in the following ways:

- 50% held as carryover for long term project planning
- 25% distributed to building technology fund accounts
- 25% held as carryover for Professional Development in technology

In conjunction with the "average device cost" model, technology funds used for minor equipment will be balanced between buildings based on student population. With a device per student goal of 2 to 1, and an average device cost of around $500, a total school budget will be designated for annual minor equipment purchases. Individual schools can work with their technology committees to determine technology equipment solutions tailored to fit the needs of their own buildings that allow them to balance cost of device with total quantities purchased. Purchases still need to fall in line with options determined from the both the device selection committee and the ISC department. Funds remaining from these allocations can be used towards equipment repairs resulting from loss or damage, addition technology purchases, and/or building technology innovation mini-grants.

Technology Fund Expenditures					
Budget Categories	2015-16	2016-17	2017-18	2018-19	%
Total Minor Equipment	$ 821,500	$ 821,500	$ 821,500	$ 821,500	51%
Major Equipment	$ 50,000	$ 50,000	$ 50,000	$ 50,000	3%
TOTAL Minor and Major Equipment	$ 871,500	$ 871,500	$ 871,500	$ 871,500	54%
Wiring/wan monthly costs	$ 41,800	$ 25,000	$ 25,000	$ 25,000	2%
Total Management Software	$ 146,496	$ 149,178	$ 84,178	$ 110,746	7%
Total Business Software	$ 106,220	$ 106,220	$ 106,220	$ 106,220	7%
Total Curriculum Software	$ 112,559	$ 112,559	$ 112,559	$ 112,559	7%
TOTAL Software	$ 365,275	$ 367,957	$ 302,957	$ 329,525	23%
Professional Development	$ 100,000	$ 100,000	$ 100,000	$ 100,000	6%
TOTAL Staff	$ 202,000	$ 202,000	$ 202,000	$ 202,000	13%
Repairs	$ 25,000	$ 25,000	$ 25,000	$ 25,000	2%
Supplies	$ 25,000	$ 25,000	$ 25,000	$ 25,000	2%
Building tech budget allocation*	$ 17,000	$ 17,000	$ 17,000	$ 17,000	1%
*17 sites: $1,000 per site to be used for - broken or lost keys, printer supplies and repair, monitors, new devises, labs, PD, approved software and apps.					
Innovation Minigrants			$ -	$ -	0%
TOTAL	$ 1,647,575	$ 1,633,457	$ 1,568,457	$ 1,595,025	

Access for teachers and students

Through centralized evaluation of needs compiled through staff input from buildings, the district technology committee shall design purchasing recommendations for equipment and software based on common standards and overall district needs. Through annual equipment inventory assessments and comparisons to student populations and grade level instructional programs, these purchasing recommendations will maintain equity of access to equipment and software for all students and staff.

The Information Systems Center of the District continually monitors network functionality and usage. This monitoring is utilized to provide recommendations on infrastructure changes to meet the needs of the individual buildings, maintaining sufficient bandwidth and storage to accommodate the needs. Updates to infrastructure, bandwidth, and storage will be provided as needed. Updates to bandwidth will be planned to keep pace with national goals set out in the ConnectEd plan and the recommendations of the Stated Education Technology Directors Association (SETDA).

Section C: Innovative instructional delivery strategies
MCPS is offering expanded services to students through instructional delivery and virtual field trips via online and video courses. The implementation of distance learning classes is expected to include a number of "blended courses" where the instructor and students utilize a mix of face-to-face instruction blended with online activities, online classes taught or attended via the Internet and video conferencing connections to other classrooms or locations. The distance learning via video conference will require larger amounts of blended online activity to allow for student collaboration and instructor communications outside the scheduled class periods.

Blended Courses
Blended courses are now being piloted by a small group of secondary teachers. MCPS will expand the use of online delivery as teacher interest increases. As part of a robust partnership with the University of Montana, funded by the Shape P20 grant, forty educators per year participated in a 2-credit course on blended learning each year in 2013-14 and 2014-15. The intended outcome of this professional development is an increase in blended learning approaches in MCPS K-12 classrooms. Each blended learning approach will be targeted to meet specific student achievement increases in specific subject areas. MCPS will increase training in blended learning methods via the Regional Professional Learning Center coaches.

Online Courses
MCPS will encourage the use of online classes by students to enhance their academic program through offerings not available within the district. All coursework attempted by students will be under direct supervision of district personnel and in line with Montana statutes regarding distance learning.

MCPS will encourage the development and use of online courses by staff to provide expanded instructional offerings to district and non-district students. Study is underway to determine the requirements and best practices for development and presentation of these classes. The District utilizes Moodle, Google Classroom, Edmodo, and other web-based platforms to

augment content delivered face-to-face in classrooms. Blended learning is a specific goal of the Achievement for All plan as a strategy to improve student engagement and ensure that all students achieve.

Distance Learning via Video conferencing
MCPS will investigate current options in regards to Distance Learning via video conferencing during the 2015-16 school year. New technologies will be explored to determine if the existing VisionNet system still fits into long term goals for the District.

Future distance learning goals will integrate into the Smart Schools 2020 bond funding to ensure each school is outfitted with the appropriate hardware and software to facilitate this learning model. A five-year plan will be developed to ensure completion of the MCPS District Learning model.

Parent Involvement
The District currently uses and will continue to utilize the existing MCPS website, Facebook page and Twitter feed as well as the Connect 5 program for automated email, phone and text messaging for general information dispersion to students, parents, and the general public. In addition, a document management program will be evaluated for implementation for use with internal and public document access.

The Parent Connect and Student Connect module of the Student Records System "Q" is used K-12. These modules allow for parent and student access to student attendance, behavior and grade information from any Internet connection.

Section G: Adult Literacy and Adult Education
The district provides the Dickinson Lifelong Learning Center (Adult Education) with
1.   Internet Access
2.   Access to MCPS computer and network equipment

Document coordination of funds from all sources

Funding Source	Utilization	Amount
General Fund	Internet Access (E-rate reimbursement)	$143,064
	Point-to-Point WAN (E-rate reimbursement)	$96,072
	Support Personnel	$875,000
Technology Depreciation Levy	Computer/Multimedia Equipment Network Infrastructure Software Repair and Supplies Building-based technology budgets Technical Support Professional Development and Training Internet Access Wide Area Network	$850,000 (Elementary) $750,000 (Secondary)
District Building Reserve Levy	Computer/Multimedia Equipment Software	$0
State Technology Funds	Computer/Multimedia Equipment Staff Development	As available
Grants, Donations	Computer/Multimedia equipment Software Staff Development	Based on allocation and program need
Title I	Computers, Laptops, Tablets Software Staff Development	Based on allocation and program need
Carl Perkins Funding Forward Funding	CTE Equipment and Software	Based on allocation and program need

Reviewed:

- MCPS Board of Trustees, Curriculum and Instruction Subcommittee, December 1, 2008
- MCPS Board of Trustees, General Meeting, December 9, 2008
- MCPS Board of Trustees, Curriculum and Instruction Subcommittee, January 5, 2009
- MCPS Board of Trustees, General Meeting, January 13, 2009
- MCPS Board of Trustees, Teaching and Learning Committee Meeting, June 1, 2015