Three Year Technology Plan

2009-2012

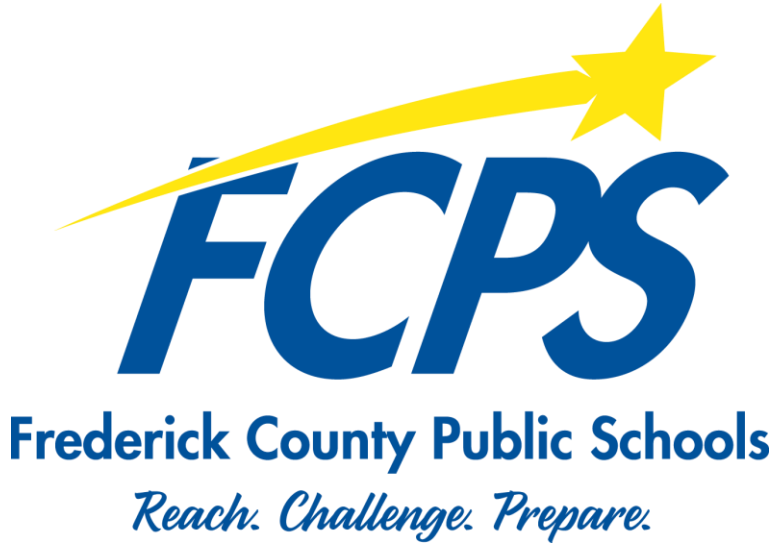

Table of Contents

Executive Summary

Executive Summary

The mission of Frederick County Public Schools (FCPS), "To reach our students with exceptional teaching and caring support, challenge them to achieve their potential, and prepare them for success in a global society," sends a strong message that all efforts in our school system are directed toward student learning. As FCPS moves forward to ensure that every student receives a quality education and is provided with the opportunity to reach high levels of achievement, technology will play a vital role in delivering on this promise. We want all members of the FCPS learning community to be technologically literate and life-long learners who use technology successfully as a means of attaining their professional and personal goals.

The original Five-Year Technology Plan focused on establishing a strong technology infrastructure and providing access to that technology. In the previous Three-Year Technology Plans, steady progress had been made with regards to the knowledge and skill levels of our professional staff in using basic technology. Progress, during the time frame of the last Plan, was made toward the seamless integration of technology and instruction, ensuring that it positively impacted student learning and achievement, and staff productivity. Our current Plan, based on the groundwork of the previous Plan, will capitalize on the already identifiable trend in FCPS of moving technology implementation to a higher level in both instruction and administrative applications. In addition, the influx of new technology hardware and software applications that are available to support learning and improve administrative functions are being made available at a rapid rate. A secondary goal of this plan will be to plan effectively for these future developments and test their application to the learning and productivity environment.

It is important to note, that a fundamental belief in this Plan is that technology is not an end in itself, but instead a means to improved student learning of core subject areas and technology skills critical to our students' ability to contribute and function in today's society. The Voluntary State Curriculum and associated assessments will serve as a foundation for our goals and also provide the benchmarks for measuring our progress toward improved student learning.

Five comprehensive goals provide the blueprint for continued growth during the three-year period 2009-2012:

- Integrate technology tools and digital content seamlessly into FCPS instructional resources. This goal has the potential for the greatest impact on student learning. It has three complementary components that need to be aligned. When there is alignment of the Maryland Voluntary State Curriculum, the Technology Standards being developed by the TL8 grant consortium, and local FCPS Essential Curriculum, technology will become an even more powerful and meaningful ingredient of instruction.
- Ensure that FCPS staff and students are technologically literate by adopting technology standards and providing high-quality, ongoing professional development. Research shows that ongoing professional development that supports professional and instructional tasks is the key to technology resources having a positive, productive impact on both instruction and administration. The attainment of this goal will require

additional staff to provide training, help desk support, maintenance, and improvements to software applications, hardware, and infrastructure.

- Increase the effectiveness, efficiency and security of school and central office administrative functions and operational processes. The FCPS administrative software systems for human resources, financials, and student systems provide FCPS staff with the tools necessary to generate time and cost savings, and the real-time data with which sound instructional and management decisions can be made.
- Provide equal access for the members of the FCPS learning community. During these years, the Plan continues to advocate for hardware and software standards, a replacement cycle to ensure continued access to current, reliable technology, and additional staff to keep all systems working efficiently and effectively. These items will guarantee that all students and staff have equity of access to hardware, software, connectivity, and communications resources.
- Assess the impact of technology on student learning and staff productivity to assure continuous improvement in the implementation and use of technology. Although it is important to continue to assess progress toward acquisition targets and toward student and staff proficiency in technology skills, evaluation efforts in 2009-2012 and beyond will concentrate on technology's impact on learning and productivity. FCPS needs to assess the impact of technology toward achieving our strategic system goals and most particularly its impact on student achievement, critical thinking, and communication.

The role of technology in enhancing the teaching/learning process is embodied in these goals, which incorporate concepts from state and national reports, and also provides for the implementation of a local vision with goals, standards, and expectations for the FCPS learning community.

Although this Three-Year Technology Plan begins where the previous Plan ended, it also charts a new course for the future, one in which the primary emphasis is on how technology is best used to benefit students and staff. Frederick County will continue to forge ahead in hopes of meeting these goals. If we are successful, technology will make profound contributions to the FCPS school system and meet the needs of our school customers and stakeholders; whether they be students, parents, teachers, administrators, employers, institutions of higher education, or the community in general.

Section 1 –

Introduction, Vision, and Strategy

Section 1 – Introduction, Vision, and Strategy

Introduction

There are dramatic changes taking place in the educational landscape – a new excitement in the vast possibilities of the digital age for changing how we learn, how we teach, and how the various segments of our educational system work together. 21st Century skills are becoming a central theme to the new century's educational layout. The technology that has so dramatically changed the world outside our schools is now changing the learning and teaching environments within them.

In an address on NCLB, President George W. Bush stated, "We cannot assume that our schools will naturally drift toward using technology effectively. We must commit ourselves to staying the course and making the changes necessary to reach our goals of educating every child. These are ambitious goals, but they are goals worthy of a great nation such as ours. Together, we can use technology to ensure that no child is left behind."

According to the FY07 MSDE Technology Inventory (the latest information available) results, Frederick County compares favorably with other school systems across Maryland. The data provided in this report is important for what it shows about the capacity of FCPS students and teachers to access technology-based resources and for what it reveals about the way FCPS students and teachers experience technology in their day-to-day learning.

- Student to computer ratio – 3.2:1
- Percentage of classrooms connected to the Internet – 99%
- Percentage of schools using a school website to facilitate home/school communications – 87%
- Percentage of FCPS teachers having at least an "intermediate" level of computer use – 80%
- Percentage of FCPS teachers having at least an "intermediate" level of Internet use – 75%
- Percentage of FCPS teachers having at least an "intermediate" level of technology integration – 78%

The Technology Inventory also shows that FCPS students use technology as much or more than students in other counties in areas such as:

- Gathering information/data.
- Performing measurements/calculations and collecting data.
- Manipulating/analyzing/interpreting information and data.
- Communicating/reporting information, conclusions, or results of investigations.
- Displaying data and information.
- Communicating/interacting with others.
- Planning/drafting/proofreading/revising and publishing text.
- Planning/refining/producing multimedia presentations.
- Generating original pieces of visual art or musical composition.
- Developing a more complete understanding of complex material or abstract concepts.

- Connecting auditory language to written word or graphical representations.
- Supporting individual learning or tutoring.
- Remediation for basic skills.
- Accommodating for a disability/limitation.

Despite the positive trend this data predicts, FCPS still has much work ahead. In addition to the need for additional or updated hardware and software and additional personnel, the reporting data indicates that students regularly use technology for achievement and assessment in some areas, but that there are weaknesses in other areas including those that support higher-level thinking skills.

The FCPS Master Plan Vision Statement includes the following quote:
"Students look forward to school each day. They take full advantage of the rigorous academic curricula and strive to develop their talents. They utilize the power of technology to explore a world of new ideas and information. They acquire the knowledge and skills to achieve and the confidence to succeed, and are rewarded with a wide choice of offers from higher education and employers."

With this data and these visions in mind, our goals and progress will be matched to the FCPS Master Plan, to the over-arching goals of the National Educational Technology Plan, and the recommendations of the Maryland State Department of Education Technology Inventory.

Vision

Most experts believe that the use of computers and the Internet provide notable potential for enriching education by providing new ways for students and staff to collect and manage information, and explore their world. The challenge now is to move beyond "potential" and demonstrate that technology "can" improve student achievement. Access is not enough. Schools that have physical access to computers and the Internet still need the support and the knowledge to bridge the gap from basic productivity to seamless integration across the curriculum.

Through the use of technology and digital content, we can engage and capture the interest of students with information that is current, dynamic, and interactive. Students have an unprecedented opportunity for collaboration with peers and experts in particular fields of work, as well as publishing to a wider audience. In the hands of motivated, knowledgeable, and well-prepared teachers, digital content can nurture the kind of confidence, creativity, thinking, and learning in students that drive them toward meeting our highest standards for achievement.

The ultimate goal of the original Five-Year Technology Plan was to maximize the ability of teachers and students to use technology to accomplish tasks faster, more comprehensively, and in a more engaging manner than was possible without it. During those five years, teachers gained the skills necessary for personal proficiency. The goals of the previous Three-Year Plans, and extended in this Plan, are to embark on the process of learning to use the various software applications to seamlessly integrate technology into instruction thereby impacting student

learning and achievement. By seamless integration, we mean that the technology itself should be transparent to the teacher and student. Little or no effort should be required by either to operate the technology – rather the focus is on the instructional design, the digital content, and the teaching strategies used to achieve a core educational outcome.

Beyond classroom instruction, tremendous opportunities also exist to effectively apply technology tools to school administrative operations. By many measures, school systems should be able to achieve significant efficiencies and savings through effective application of technology to administrative processes and operations. During the course of previous Technology Plans, major administrative software systems were implemented, along with corresponding staff development efforts. In the administrative area this plan, as the previous plan, focuses on extending the use of these systems to increase administrative and support staff productivity. The expectation is that school-system staff will benefit from:

- Enhanced business and instructional decision-making, based on real-time, meaningful data.
- Improved communication among FCPS staff members and between FCPS and school, home, community, and business partners.
- Increased availability of tools with which to achieve operational efficiencies and cost savings.

This Three-year Technology Plan proposes that all students and staff are part of a single learning community, and that the benefits technology brings to instruction and to administration are truly complementary. Without the administrative operations the instructional components could not and would not be possible.

Role of technology as it relates to student learning, teaching, and administrative functions.

- Tomorrow's world requires fundamental technological competencies that today's students must have. Digital literacy rests on knowing how to locate information quickly, evaluate it for accuracy and bias, think critically about it, synthesize it and apply it to solve problems, communicate findings, and create high quality products. Proficiency using technology is a basic 21st century skill.
- Technology allows instantaneous access to relevant, up-to-date, authentic information that individuals can explore on many levels and manipulate to create new knowledge and understanding. Digital content can transform teaching and learning because it is dynamic, allowing the student to both locate and construct knowledge.
- Technology provides productive, engaging learning environments that support and promote the essential content and technological skills students will need for success in the world in which they will live, learn, and work.
- Technology resources allow individuals to explore authentic, relevant, real-world topics, enable discovery and make learning more engaging. Technology enables new ways of communicating within the classroom as well as with people in distant corners of the world. It opens up avenues of collaboration from student to student, student to teacher, teacher to teacher, and teacher to community.

- Technology allows teachers to enrich instruction, teach complex ideas more easily and better meet student's individual learning needs as well as accomplish their management and preparation tasks more productively, efficiently, and creatively.
- Technology usage in core educational subject areas enriches student learning in both areas.
- Administrative applications improve management and operational efficiencies, provide the capability to base instructional decisions on real-time data, and improve opportunities for better home-school communications.

Specific goals and objectives to be accomplished through the Plan

1. **Integrate technology tools and digital content seamlessly into FCPS instructional resources.**
   Three-Year goals and objectives
   - Match the Technology Literacy Standards to the Maryland Voluntary State Curriculum and local FCPS Essential Curriculum and accompanying assessment documents.
   - Integrate the Technology Standards into additional resources and areas as appropriate.
   - Provide professional development for teachers to make the transition to seamless technology-infused instruction.
   - Provide professional development on using digital content and streaming media resources available through collaboration between the FCPS Department of Curriculum Media Services and Technology Services Instructional Technology Department.
   - Continue supporting the system's efforts to improve student performance through technology use at the EXCEL schools.
   - Continue developing technology "seeds" which identify specific objectives within the FCPS Essential Curriculum where technology can be integrated to enhance student academic achievement.
   - Explore and support technology tools that assist teachers in data collection so that assessment information can be readily available for them to use to make meaningful, data-driven, instructional decisions.
   - Assist with the implementation of applications that support FCPS curricular objectives.
   - Continue developing online courses to support such programs as Flexible Evening High School, Twilight Program, Home/Hospital, AP Courses, etc.
   - Develop online courses and remediation modules to assist students in passing MSA and HSA assessments.

2. **Ensure that FCPS staff and students are technologically literate by adopting technology standards and providing high-quality, ongoing professional development.**

   Three-Year goals and objectives

   - Adopt and implement the Maryland Technology Literacy Standards for Students as developed by the statewide Technology Literacy by 8th Grade (TL8) grant consortium.
   - Adopt and implement technology standards for teachers, administrators, and support staff.
   - Provide high quality, sustained professional development focused on assisting all learning community members to be proficient and productive users of technology resources.
   - Develop a new online training portal that provides a variety of content (video, audio, documents) for staff on the system's Intranet.
   - Continue expanding the Building Level Trainer (BLT) program that was initiated with MSDE formula grant funding.
   - Continue developing online learning opportunities for FCPS personnel.
   - Continue developing Electronic Learning Communities (ELCs), which provide support and a forum for interaction at a distance for FCPS staff.

3. **Increase the effectiveness, efficiency and security of school and central office administrative functions and operational processes.**

   Three-Year goals and objectives

   - Increase the ability to make real-time, instructional decisions using eSchoolPlus and Cognos/ReportNet to enhance the data analysis abilities of the student information system.
   - Provide an integrated method of reporting grades in the student information system to eliminate the use of bubble sheets for interims and report cards.
   - Provide tools for better analysis of data to improve fiscal management.
   - Provide opportunities for new employees to attend introductory, technology-oriented workshops on applications such as voicemail, email, PeopleSoft, eSchoolPlus, Cognos/ReportNet, etc.
   - Explore options for tracking and recognizing employee participation in professional development offerings.
   - Continue to refine the use of the TrackIT work order management system and Help Desk knowledge base to improve the quality of service and reduce turn-around time for resolution of customer service issues.
   - Continue to work toward elimination of redundant data entry and interoperability of applications.
   - Continue distribution of "Read Me First" booklets, which provide basic instructions for FCPS technology, to new employees and those in new positions by online means.
   - Investigate a document imaging solution which would allow for efficient digital storage and retrieval of critical system documents (e.g. finance, human resources, student information).

- Investigate a data retrieval and reporting solution which would allow for efficient and timely access to student and teacher performance data using new state mandated student identification numbers.
- Expand the use of virtualization of desktop applications and servers to maximize the resources.
- Investigate Linux, Web 2.0, and other open source solutions and how they can provide capabilities at a greatly reduce cost.
- Implement a web/ video conferencing system for staff to maximize meeting times and minimize costs of travel.

4. Provide equal access for the learning community.

Three-Year goals and objectives

- 3:1 student to system standard instructional computer ratio for elementary schools.
- 1:1 student to system standard instructional computer ratio for secondary schools.
- A multimedia cart solution consisting of a computer projection device, document camera, speakers, and DVD player.
- A system standard workstation and email account for every teacher.
- A system standard workstation per full-time equivalent (FTE) administrator, guidance counselor, and office support staff.
- A system standard workstation per lead cluster mechanic, food service cluster office, and custodial office.
- A telephone in every classroom and voicemail for every teacher.
- Continue to maintain a standardized list of approved software applications that meet the needs of the learning community by supporting curricular objectives and enhancing the productivity of administrative personnel.
- Connectivity for all facilities to the Local Area Network (LAN) and Wide Area Network (WAN) for access to applications such as email, Internet, productivity and instructional software, etc.
- An Internet filtering solution to support CIPA requirements.
- Continue progress toward the Library Media Recommended Technology Profiles (see ***Appendix B***) for elementary, middle, and high schools and provide replacements/upgrades as needed.
- Continue advocating for ongoing computer replacement cycles and increased technology resources for schools that have limited access.
- Continue advocating for adequate funding to purchase system-wide digital content resources and standardized software applications.
- Continue reviewing and recommending new hardware and software products and testing for appropriateness and functionality (including 508 compliance).
- Collaborate with curriculum specialists and other school-based administration to determine their hardware/software needs.
- Expand the use of our learning management system so that all members of the learning community can access at all times through the transition to an open source solution such as Moodle.

- Continue collaboration between the Department of Curriculum Media Services, Technology Services Instructional Technology Department and Special Education/Assistive Technology Department to ensure equal access for all students.
- Expand communications options using web/video conferencing tools.
- Expand the use of standardized school web pages to further facilitate home-school communications.
- Upgrade the system for teacher web pages to facilitate home-school communications.
- Explore Web 2.0 technologies that provide other forms of communications such as wikis, blogs, Twitter, etc.
- Expand wireless installation through all FCPS schools.
- Upgrade to a textbook management system.

5. Assess the impact of technology on student learning and staff productivity to assure continuous improvement in the implementation and use of technology.

Three-Year goals and objectives

- Develop a comprehensive, on-going model of evaluating the impact of technology on teaching and learning using some or all of the following methods: statistical data, surveys, focus groups, journals, interviews, classroom/lab observations, etc.
- Develop a systematic evaluation process that calls for the piloting and testing of a technology initiative prior to rolling it out system-wide.
- Design evaluation tools, that allow collection of data to answer the following questions:
  - In what ways have students been impacted by technology integration?
  - Are our teachers using technology in ways that match both our county goals and the potential that exists for technology as an instructional tool?
  - Are more teachers using information from the student information system or other centralized databases to help or address individual student needs?
  - Are "best practices" available through the FCPS Intranet and FCPSTeach?
  - Is technology improving operational efficiencies?
  - Are technology tools being used increasingly by staff to improve decision-making and facilitate home-school communication?
  - Has the district allocated adequate technology resources so that students and teachers can realize the potential of those resources?
  - Do administrators act as technology leaders, setting expectations regarding technology integration and evaluating its use?
  - Have administrators participated in training to learn how to access and manipulate data from centralized databases?
  - Are administrators utilizing the web, voicemail, and email resources to increase communication with staff and the community?
  - Are administrators advocating the use of technology and encouraging staff to develop their skills in technology?

Strategy

The need for continuing educational reform and improved student learning is clear. So are the vision and goals of this Plan that outline how technology can make significant and positive contributions to the effort. FCPS must:

- Involve all key stakeholders in the planning, implementation, and evaluation of the Plan.
- Establish clear goals and objectives, and accountability in the Plan.
- Communicate the Plan's vision, goals and objectives, and accountability to all stakeholders.
- Secure and maintain adequate funding to support the Plan.
- Monitor measure and report progress on the Plan's implementation to all stakeholders.

The responsibilities and challenges ahead of us are great. There is no dispute that our nation's students need to have the knowledge and competence to compete in an increasingly technology-driven society. This means that new models of education facilitated by technology are necessary. Reforms within our system will require strong leadership and dedication and a willingness to restructure learning in fundamental ways. That leadership will come from within FCPS across all levels; from both those individuals in the classroom and those individuals who serve in a leadership capacity. This exciting era of creative innovations and transformation provides an opportunity for a spectacular rise in student achievement as we reach out to the Digital Natives of today and the future. We approach the implementation of this Plan with confidence that we as policy makers, administrators, teachers, parents, and students can meet these challenges.

Section I –

Integrate the Most Appropriate and Effective Technology and Digital Content

Section I - Integrate the Most Appropriate and Effective Technology and Digital Content

1. **Description of how the technology will be used within the curriculum and instructional activities, especially in support of the Maryland Voluntary State Curriculum, High School Core Learning Goals, Maryland School Assessment (MSA), and High School Assessment (HSA)**
   - The Maryland Voluntary State Curriculum/Core Learning Goals and FCPS Essential Curriculum, in correlation with the Maryland Technology Literacy Standards for Students developed by the TL8 grant consortium, will be used as guides for identifying appropriate placement of technology rich activities. (see ***Appendix A*** *– Link to Maryland Technology Literacy Standards for Students)*
   - Technology "seeds" will be developed which include basic elements of a lesson plan including curriculum standards, student technology standards, brief description of the lesson, assessment, materials needed, and artifacts. These "seeds" will be made available through our curriculum portal, FCPSTeach, through a searchable database.
   - Collaboration with subject area curriculum specialists to determine where and how technology can be used to enhance student learning in the content areas.
   - Students mastering the Technology Standards will:

     Standard 1.0 – Technology Systems – Develop foundations in the understanding and uses of technology systems.

     Standard 2.0 – Digital Citizenship – Demonstrate an understanding of the history of technology and its implications on society, and practice ethical, legal and responsible use of technology to assure safety.

     Standard 3.0 – Technology for Learning and Collaboration – Use a variety of technologies for learning and collaboration.

     Standard 4.0 – Technology for Communication and Expression – Use technology to communicate information and express ideas using various media formats.

     Standard 5.0 – Technology for Information Use and Management – Use technology to locate, evaluate, gather, and organize information.

     Standard 6.0 – Technology for Problem-Solving and Decision-Making – Demonstrate the ability to use technology and develop strategies to solve problems and make informed decisions.

2. **Description of how students are being prepared to master the *Maryland Technology Literacy Standards for Students* (MTLSS).**
   - Evaluate the initial results of the first MTLSS measurement being given in 2009.
   - Continue integration of the MTLSS into curriculum to prepare students for the MTLSS measurement in 7th grade.

3. **Description of digital content available to students and teachers for teaching and learning and how universal design is incorporated to meet the needs of all learners.**
   The list of approved network software is found in ***Appendix C***. Titles are subject to change based on availability, cost, consideration of 508 compliance, and on-going evaluation of new product releases.

The Curriculum Department's Media Services provides access to the following software and digital content for use by Media Specialists, as well as classroom teachers to support their daily instruction. These resources are subject to change based on availability, cost, consideration of 508 compliance, and on-going evaluation of new product releases. The following resources are/will be provided to the schools and paid for by the department to ensure equity of access:

- Integrated library automation system
- Streaming Video Resources
- General Encyclopedia
- Periodical Database
- Educational Website Database
- Resources to support reading and research in the content areas

4. Strategies for using advanced technology, distance learning, and online courses to improve student academic achievement.

- Student online courses are currently available in subjects such as Contemporary Math, Computer Programming, Health, and SAT-prep.
- Fully online courses are in development for many of the basic HSA areas and others are in the planning stages.
- Online courses will be administered by the Flexible Evening High School program to any student needing an alternative delivery mechanism.
- Evening High School, the Twilight Program at Heather Ridge, Home/Hospital program, the Career and Technology Center are all primary locations for fully online course delivery.
- Courses are available to students in each high school who have scheduling conflicts or need to take a course outside of their regular, daily schedule.

5. Strategies for using technology to help each subgroup of students to achieve.

- Continue to work with Instructional Directors, Curriculum Specialists and other system leadership to identify and implement technology-initiatives that would benefit lower performing subgroups.
- Continued support of technology-supported instruction to increase student achievement and performance such as: Waterford Early Learning, DIBELS, Odyssey/Compass Learning, Cognitive Tutor, Math in Motion, etc.
- Support the work of Curriculum Specialists in developing intervention activities and lessons for posting on FCPSTeach
- Continue to develop online remediation modules which would support MSA and HSA performance

6. Description of strategies for providing instruction across all content areas regarding cybersecurity, cyber safety and cybernetics (C3).

FCPS has formed a digital citizenship committee whose goal is to address C3 issues. They are working in collaboration with curriculum specialists on material for use in instructing students and staff on this subject.

Section II –

Provide On-going Professional Development

Section II – Provide On-going Professional Development

FCPS Master Plan Goal III states that, "All employees will be highly qualified, motivated, and effective." It is our belief that technology staff development serves a dual purpose. While targeted at the professional growth of the teacher, the ultimate goal is to use technology to enhance and enrich student achievement in all curricular areas. Only when teachers are competent technology users themselves, will they become proficient in integrating technology into the teaching/learning process. Providing the hardware without adequate training in its use -- and its endless possibilities for enriching the learning experience -- means that the promise of technology is frequently unrealized.

1. **Knowledge, skills and attitudes needed by teachers and administrators and how this need was determined.**
   - Teachers need to have a thorough understanding of all the aspects of technology as identified in the Maryland Teacher Technology Standards (MTTS – see ***Appendix A***) which outline minimum technology-related knowledge and skills for teachers.
   - Administrators need to have a thorough understanding of all the aspects of technology as identified in the Technology Standards for School Administrators (TSSA – see ***Appendix A***) or, when adopted, must meet state-established standards for technology-related knowledge and skills for administrators.
   - To effectively perform the functions of their job, all appropriate staff must be able to effectively use the capabilities of system standard applications such as: Microsoft Office, email, voicemail, and centralized databases (student information system, financial, procurement, accounting, warehouse, human resources) to improve instructional practices and managerial efficiencies.
   - Information will be collected from the following individuals to determine needs: School-based technology teams, principals, technology coordinators, user groups, etc.
   - Data will be collected from the following sources to assess needs: surveys, focus groups, lab logs, classroom and lab observations, school improvement plans, etc.
   - MSA and HSA data will be collected analyzed to determine needs and priorities as they relate to teacher professional development and its impact on student achievement.

2. **Strategies for providing on-going, sustained professional development for teachers, administrators, and appropriate support staff.**
   Specific models, approaches, and delivery systems used for professional development opportunities are determined by the learning task. They include:
   - Modeling of technology infused instruction by Teacher Specialists
   - Train the trainer model
   - Intensive building-level training through the BLT program
   - Training from the Teacher Specialists for Technology on system-wide initiatives
   - MSDE credit courses
   - Online training
   - Availability of resources and training documents through the FCPS Intranet (I-Know)
   - Technology Coordinator meetings
   - Traditional training in a classroom or in a lab

- Computer-based Training (CBT)
- User group forums
- Electronic Learning Communities (ELCs)
- Training sessions of shorter duration, focusing on a specific task
- Training for teachers and administrators on methods of using data for instructional decision-making
- Training with greater depth and specificity on various applications to meet individual needs
- Specific courses to enable staff to master and demonstrate technical competencies required for career advancement
- Collaboration with local community experts for professional development activities
- Partnering with Frederick Community College and Mt. Saint Mary's University

Professional development of instructional and administrative staff occurs in both required and optional modes. Training occurring during the school day is often required for targeted staff members, while after school training by definition is optional. The dilemma of staff development, limited availability of substitute teachers, and resistance to teacher absences from the classroom, greatly impact whether training can be a requirement. Alternatives for optional training, such as online professional development and availability of online training materials, are being identified and developed.

- Professional development for teachers and administrators will be implemented as required to meet state-established standards and will follow the *FCPS Design for Professional Development* guide.
- Certificated staff may obtain MSDE credit for technology-related courses offered each fall, spring, and summer.
- Support staff incentives should reside in the creation of job paths that reflect professional growth. Level I would be entry level, while Levels II and III would require certifications, and/or in-house training, and a specific number of years experience.
- Support staff contract includes general tuition reimbursement, and an additional tuition reimbursement for coursework in an area of technology shortage.
- Requirements for continued training for technical support staff to keep industry standard certifications current should be investigated with Human Resources and representative organizations.

3. Strategies for ensuring that technology use will be integrated into curriculum and instruction K-12 to improve academic achievement, including technology literacy.

- Work with the Associate Superintendent for Curriculum and Instruction, Instructional Directors, curriculum specialists, and other key stakeholders to plan for technology integration activities.
- Expand collaboration between curriculum specialists and Instructional Technology to review and select software applications that meet system instructional needs.
- Direct participation by technology teacher specialists in new curriculum workshops.
- Collaboration on instructing new teachers between instructional technology and curriculum.

- Work with the Associate Superintendent for Curriculum and Instruction and Instructional Directors to ensure that all school improvement plans include objectives for using technology in instruction, school management, and administration.
- Add technology resources to FCPSTeach, the FCPS curriculum web site, that provides instructional strategies and resources.
- Continue to spearhead the system-wide effort to standardize software applications to enable more efficient networking and reduce costs associated with software licensing, implementation, and training.
- Demonstrate proven technology-infused lessons for and with classroom teachers and students.
- Address the following policies, processes, and procedures to ensure that safe and effective integration takes place:
    - Revise the *Acceptable Use* regulation periodically to ensure compliance with the Children's Internet Protection Act (CIPA) and include language relating to cyber bullying, cyber security and such.
    - Revise the *FCPS Web Site Publishing r*egulation to reflect current web site hosting capabilities
    - Revise the *Staff Use of Computers* regulation as necessary to reflect current trends and issues.
    - Continue to develop and fully implement a disaster recovery plan to include full documentation of network devices and procedures, IP structure, backup and restore procedures, and offsite storage and redundancy for key systems. As technologies become more fully integrated into our instructional and administrative processes, it is mission critical that the resources always be available.
- Evaluate, develop, and offer administrative training classes to enable transfer of ownership to end users and functional areas.
- Continue to develop technology training workshops that focus on higher level use of applications.
- Recommend that Human Resources update job descriptions to require core competencies in technology for all new teachers, support, and administrative staff.
- Continue to support the Building Level Trainer program (BLT) that provides high-quality, sustained curriculum integration training to a core group of 5-10 teachers per feeder pattern.
- Continue to develop online courses that allow anytime, anywhere learning to occur for students.
- Continue to provide access to quality online digital content that supports curricular objectives and daily instruction.
- Use the formats for professional development and lesson planning that are described and endorsed in the *FCPS Design for Professional Development* and are the lesson planning formats available on FCPSTeach:
    - ***Constructivist***, which is based on the principle that learners create their own knowledge structures rather than merely receiving them from others. New learning must be connected to students' prior knowledge, and the learner becomes engaged with manipulatives and hands-on problem solving.

- ***Dimensions of Learning***, which is based on the premise that five types of thinking are essential to successful learning; attitudes and perceptions, acquiring and integrating knowledge, extending and refining knowledge, using knowledge meaningfully, and habits of the mind.
- ***Mastery Teaching***, which emphasizes an organizational structure of learning time to increase instructional effectiveness.
- ***Performance-based Instructio****n*, which is designed to have students apply their knowledge, skills, and understanding in important, real-world contexts.
- ***Tiered Instruction,*** in which teachers design instruction to target specific groups of students based on their readiness for the skills, concepts, and process being applied or on student interest.

4. Strategies for improving the capacity of teachers, through the use of technology and mastery of the Teacher Technology Standards, to integrate technology effectively into curriculum and instruction.

- Continue to offer the Building Level Trainer (BLT) program, which consists of two trainers per feeder pattern who work with a core group of 5-10 individuals on integrating technology into their daily instruction, and expand the program as funding allows.
- Continue to provide staff development for teachers on digital content that is available and how to effectively integrate it into their daily instruction.
- Continue to provide staff development for teachers on selecting and using appropriate technology to support content-specific learning outcomes.
- Continue to provide staff development on using technology to collect, manage, and report data related to student and school performance.
- Continue to provide staff development for those teachers who are interesting in posting courses on our learning management system on online instructional design and how to be an effective online teacher.
- Continue the development of staff development opportunities which assist teachers in meeting the Maryland Teacher Technology Standards (MTTS) (see ***Appendix A***)
- Expand the use of our learning management system and online materials to enable students and staff to learn anytime, anywhere.

5. Strategies to assist educators in understanding, using, and developing content that incorporates universal design and in effectively using assistive technologies to meet the needs of all students.

- Continue training by Technology Teacher Specialists through one on one or as a group exercise.
- Develop procedures to ensure section 508 compliance to allow all students to utilize technology solutions.
- Work in collaboration with the Augmentative Communication and Technology (ACT) Team to assure the needs of all students are being met, especially those requiring assistive technologies.

6. **Description of how teachers are being prepared to master the *Maryland Teacher Technology Standards* (MTTS).**
   Instructional Technology uses a variety of options to engage teachers in expanding their understanding of technology solutions especially those areas needed to master the MTTS. Some methods include:
   - Co-curricular development with curriculum and other teacher specialists.
   - Professional development in various areas of technology
     - After school training
     - Summer Technology Academy
     - Integrated with normal teaching

   Additionally through updating of curriculum to integrate technology for students the teachers also gain insights into areas that they also need to become proficient in.

7. **Description of how administrators are being prepared to master the Maryland Technology Standards for School Administrators (MTSSA).**
   Similar to teachers Instructional Technology uses a variety of options to engage administrators and expand their knowledge and uses of technology. Some methods include:
   - Inviting administrators to participate in professional development along with teaching staff
   - Presentations and updates during administrative meetings
   - Workshops and one on ones with specific areas of technology to engage them.

8. **Demonstration of alignment of professional development to the *Maryland Teacher Professional Development Standards* and the *Maryland Instructional Leadership Framework*.**
   Professional development is aligned with the Maryland standards. FCPS provides approved MSDE credited course work for teaching staff throughout the Spring, Summer, and Fall. Many of the classes also provide a technology focus.

9. **Strategies for how the school system will work toward meeting *The Maryland Educational Technology Plan for the New Millennium* targets of one instructional technology infusion specialist for every 100 instructional and administrative staff members to assist with professional development and curriculum integration.**
   Develop a five year plan based on sufficient funding to increase the current number of 9 technology infusion specialists to 34 through the additional of five staff positions per year. This does not meet the 1:100 ratio set by the state, but puts FCPS near to the target in short time frame. If further funding becomes available then the number per year could be increased to meet the state ratio.

10. **Strategies for rewarding technology literate teachers teaching in economically disadvantaged areas to remain in those areas.**
    - Purchase equipment and software for use by technology literate teachers who are motivated to use technology effectively.
    - Provide additional training opportunities to those teachers who are on the "leading edge" of technology integration.

- Recognize those individuals who are technology literate in various system communications such as the system newsletter, web site, during tech coordinator meetings, etc.
- Involve technology literate teachers in the planning and purchasing process for hardware/software and give them opportunities for input/feedback.

11. Description of strategies for providing professional development for all educators regarding cybersecurity, cybersafety, and cyberethics (C3).

Through the creation of a digital citizenship committee as mentioned earlier in this plan FCPS is making progress to develop professional development strategies for C3. The same committee is also tasked with updating corresponding documents essential to supporting C3. These are the student and staff acceptable use regulations.

Section III –

Increase effectiveness, efficiency, and security of school and central office administrative functions and operational processes

Section III – Increase the effectiveness, efficiency and security of school and central office administrative functions and operational processes.

1. **Description of how the technology will be used to improve management and operational efficiencies, including developing and implementing communications tools, data management systems, integrated student information systems, curriculum/content management systems and learning management systems.**
   - Improved productivity and efficiency through the use of appropriate software applications (e.g. PeopleSoft, eSchoolPlus, Pinnacle, Cognos/ReportNet, Maryland State IEP) for administrative decision-making and instructional leadership.
   - Expanded communication among FCPS staff, parents, and community through the use of system resources such as email, telephone, and web pages.
   - Additional resources available through the FCPS Intranet resulting in reduced printing costs and improved access to policies, procedures, resources, and forms. (e.g. FormFinder, online help databases)
   - Expansion of the online student grading program (Pinnacle) to support elementary schools that will encourage parental involvement and will enable monitoring a child's progress.
   - Increased efficiency in administrative management tasks such as maintaining student attendance and grades.
   - Continue to investigate cost savings and better work flow solutions through development of additional capabilities in Peoplesoft such as electronic mileage reimbursement.
   - Implement electronic time sheet completion and submission.
   - Implement electronic pay advices thereby minimizing printing costs.
   - Investigate and field test movement towards more electronic based documents.
   - Implement district-wide web conferencing to minimize travel and support distance training.
   - Continued collaboration through user groups that communicate and discuss potential changes or enhancements to applications and thereby improve employee efficiency.
   - A web-enabled catalog for the PL/IMC collection and online booking of instructional materials will enhance and facilitate access and increase efficiency in delivery of materials.
   - Interoperable communication among applications will reduce or eliminate redundant data entry.
   - Investigation of document imaging and data retrieval/reporting solutions to increase system access and storage of critical data.

2. **Strategies for providing electronic communication with students, educators, parents and the community.**
   FCPS utilizes a number of technologies and processes to provide electronic communication to the school system and the community at large. Some of these are discussed in more detail in other parts of this document. Briefly though here are some of the main areas.
   - Provide current information through the main web site www.fcps.org
   - Implement a standard format for all school websites to provide consistent easy to find information for parents and students.

- Provide sufficient resources for teachers to develop and offer web pages as part of the school web sites.
- Continue to provide voicemail capabilities for individual teachers allowing parents anytime access to leave a message.
- Provide email distribution lists for the district and individual schools.

3. **Strategies for providing access to digital resources, data and information before and after school hours.**
   - FCPSTeach – The FCPSTeach site (http://fcpsteach.org/) gives teachers and administrators and other staff members the opportunity to easily build web sites to use as virtual classrooms, to supplement their classroom materials, or to post information for widespread distribution.
   - FCPS.org – Through the school system web site (http://www.fcps.org) , parents, community members, students and staff can get up-to-date access to information regarding academics, athletics, policies and regulations, calendars, transportation, or link to individual school web pages.
   - Find-out First – Through the Find Out First (http://fcps.ezcommunicator.net/edu/frederick/loginform.asp?app=0&nextpage=/edu/frederick/MyAccount.asp&query=app=0) resource, parents and community members can get email access to the information they need about Frederick County Public Schools.
   - Online grade book – FCPS is utilizing an online grade book application known as Pinnacle that allows parents to check on student progress constantly throughout the school year. Currently this application provides grade information for all secondary students. Plans are to expand this to elementary over the next two years.
   - Blackboard (LMS) – Parents are able to log in with guest access to view fully online student courses offered throughout FCPS.
   - Digital Content – Many of the digital content resources that are purchased through the Department of Media Services and Instructional Technology allow home access so that student can complete homework assignments and do research outside of the normal school day.
   - Developing home accessible sites pointing to curriculum approved web sites for each level of education with implementation for Fall 2009. This allows students to access the same sites at school and at home providing more information to parents.

Section IV –

Access for All Learners

Section IV – Access for All Learners

FCPS Master Plan Goal V advocates for adequate resources to achieve its goals and to manage these resources in a publicly accountable manner. Through the goals and objectives of this Plan, we will make every effort to provide all FCPS employees and students with access to hardware and software. While much progress has been made toward meeting objectives outlined in the previous plans, limited funding precluded fully addressing all needs. Moving forward, our challenge is to find ways to fund growing technology needs and provide the necessary support to assure that they can be used regularly and meaningfully.

Clear targets that define how all students, teachers, and administrators will eventually have access to technology.

1. **Minimum infrastructure and equipment per school (see *Appendix B - Recommended Technology Profile for FCPS*)**
2. **Local area network and wide area network configuration and requirements**
   - Local Area Network (LAN) – current standards for FCPS Ethernet systems are: switched 100Mb to the desktop with 1000Mb backbone connections within a building for instructional systems, switched 100Mb to the desktop and, where needed, 1000Mb backbone connections for administrative systems. New school designs will be switched Ethernet solutions, currently for data and prioritized voice services, but with the capability of adding video services across the network.
   - Wide Area Network (WAN) – the FCPS WAN has in the last 3 years been upgraded to a fully fiber-based network with the exception of one site which is a 3Mbps connection. The network is IP-based and has a minimum of 1000 Mb (1Gb) and up to 10,000 Mb (10 Gigabit) to all schools and administrative sites. Additionally, the Internet connection currently supports 100Mbps and plans are to double that in the next fiscal year. This WAN configuration enables faster access to the Internet, centralized databases, and streaming video all of which support distance learning through online courses for students and staff. Already voice and data are integrated on the same network, creating operational efficiencies. In addition, this network will enable us to implement additional resources without negatively impacting throughput performance. One area being implemented is virtualization of school servers. This would provide for centralize hardware and support providing numerous savings in many areas.

3. **Software/digital content to be available, at a minimum, for all learners**
   The list of approved network software is found in ***Appendix C***. Titles are subject to change based on availability, cost, consideration of 508 compliance, and on-going evaluation of new product releases.

   Media Services provides access to the following software and digital content for use by Media Specialists, as well as classroom teachers to support their daily instruction. These resources are subject to change based on availability, cost, consideration of 508 compliance, and on-going evaluation of new product releases. The following resources

are/will be provided to the schools and paid for by the department to ensure equity of access:

- Integrated library automation system
- Streaming Video Resources
- General Encyclopedia
- Periodical Database
- Educational Website Database
- Resources to support reading and research in the content areas

4. Assistive devices and processes to be in place

Assistive technology is a service for students with special needs who require technology to assist them in benefiting from their educational program. Assistive technology devices may be used to help students improve their performance in the areas of communication, written language, computer access, reading, math, activities of daily life, mobility, environmental control, vision, hearing, and optimum positioning. It ranges from "low tech" interventions such as writing paper with raised lines, communication boards, and picture schedules, to "high tech" interventions such as voice output communications devices and specialized computer software.

Assistive technology devices may be used to help students improve their performance in the areas of communication, written language, computer access, reading, math, activities of daily life, mobility, environmental control, vision, hearing, and optimum positioning. It is each school's responsibility to determine if: assistive technology is not indicated at this time and the student is accessing the curriculum and making progress in his or her educational program; assistive technology is included in the current IEP; assistive Technology is indicated and will be added to the IEP; or, assistive technology is indicated and a referral will be made to the Augmentative Communication and Technology Team (ACTT). If warranted, the Team procures the assistive technologies, inventories them, delivers them to the student, trains the staff, student, and parents in their use, and repairs/troubleshoots software and hardware needs.

Please see ***Appendix D*** for a list of assistive technology that is currently in use for students with special needs.

Data on current access to technology by students, teachers, and administrators

- A student to computer ratio of 3.2:1
- All teachers have access to a system-standard networked computer
- Administrators have access to a dedicated system-standard, networked computer
- Peripheral devices – PDA's, printers, scanners, digital cameras, document cameras, data projectors, fax machines, etc. – are readily available and, where appropriate, are networked to promote sharing
- 99% of FCPS classrooms are connected to the Internet
- All students and staff have access to the Internet via fiber wide area networks FCPS provides approximately 100 Mbps of bandwidth to meet system Internet access requirements
- All staff has access to telephone and voicemail services

- Most FCPS staff has access to Microsoft Outlook email
- Staff access to centralized applications such as PeopleSoft, eSchoolPlus, Maryland State IEP, Pinnacle, and Cognos/ReportNet.

A. Three-Year projection of the type and amount of equipment, wiring, type and amount of software and online resources to be acquired to ensure successful and effective uses of technology.

Some additional infrastructure, equipment, telecommunications services, software, and other digital content will need to be purchased in order for us to achieve our goals. See ***Appendix E*** for the *Three-Year Projection of Costs*.

B. Three-year projection of the telecommunications services (voice, video, and data) and providers to be acquired.

Additional telecommunications services for voice, video, and data will need to be purchased in order for us to achieve our goals. See ***Appendix E*** for the *Three-Year Projection of Costs*.

C. Description of how a secure computing environment is addressed to ensure safe access and information integrity.

FCPS follows a multi-pronged approach to ensure safe access and information integrity for staff and students alike. A variety of implementations allow for a safe computing environment. At the desktop level anti-virus software is installed to minimize the possibility of virus or Trojan attacks on not just the computer, but the network. At the perimeter we utilize a trilogy of security. These are the firewall, web blocking appliance, and anti-spam appliance. Together FCPS is able to meet CIPA requirements and protect both students and district resources. Additionally virtual private network (VPN) capabilities are provided to staff to allow for secure access from remote locations as needed. This can support anything from remote entry of grade information to full access to administrative applications. Last but not least security is verified through periodical audits from both the state and local governments.

D. Strategies for how the school system will work toward meeting *The Maryland Educational Technology Plan for the New Millennium* targets of:

FCPS is in varying stages of meeting these targets. Many of the listed targets will require significant funding resources and expansion of staff to implement and support. As the economy recovers these targets will be prioritized and progress will be made to meet them with all due speed. A brief a discussion and status of each of these targets follows. For a funding chart related to these targets please see ***Appendix F***.

1. One high performance computer per educator

Currently all educators have a computer available to them. Plans are already in effect to assure the computers in place have sufficient resources to support the educators. Replacement and upgrades will be dependent on sufficient funding.

2. **One high performance computer or computing device per student at the secondary level.**
   With over 21,000 secondary students this will be a challenging target to reach. Currently on average the ratio for students to computers at the secondary level is 3.4:1. FCPS is investigating new technologies as they become available and expect that a portable computing device will be the long term solution. By the fall of 2010 it is expected that at least three of 22 secondary schools will meet this target. Plans are being developed to work toward the 1:1 target based on availability of sufficient funding.

3. **A 3:1 student to computer or computing device ratio per student at the elementary level.**
   FCPS is at a 4.8:1 ratio of students to high performance computer for the over 18,000 elementary school students. We will continue to work to assure there are sufficient quality computers available to students. It is expected that through the influx of equipment from the Maryland Phoenix Project, some funding for refurbished computers, and local funding for new value computers we will be able to remove the remaining low end computers from the elementary levels and set a base that will support the software in use in FCPS schools.

4. **One computer projection device per classroom.**
   FCPS is moving quickly to meet this target. Through a 5 year plan that is in its third year we have reached a 70% installation level for computer projection devices. With sufficient funding we would complete this in the next two years. With the economic downturn this may not be the case.

5. **Access to other devices to meet the instructional needs of students.**
   As part of the item 4 above all classrooms will also be outfitted with document cameras, speakers, DVD players, and carts to allow easy mobility of the afore mentioned equipment. Interactive whiteboards are also a priority and in the newest schools all classrooms will have these installed. Plans are being developed to back fill other schools as funding is available. Additional information on this can be found in the Classrooms section of ***Appendix B***.

6. **Connection to a broadband speed LAN/WAN for all instructional areas.**
   All schools expect one have fiber connections for the network. This provides excess capacity for computing needs currently and for the foreseeable future. The one school with a slower link will be upgraded when the local carriers provide sufficient infrastructure. Similar capabilities also are available to all portables in the system. Recently a distribution system has been put in place in about 15% of the portables. This will minimize future costs and provide additional active drops for a portable. Our goal is to have 100% of the portables be configured this way within 6 years.

7. **Technical support including a help desk.**
   FCPS currently has in place a help desk system that provides support for computers, phones, and enterprise applications. As the majority of calls is on the computer support

side of the house an automated work order control system has been implemented. This system is Track-It and follows a problem from initial call to resolution.

8. **At least one full-time technical support person per 300 computers**
   We are aware of the need for additional support staff. Additional staffing will be based on future budgets and is a priority. This is a critical area for expansion. Additional discussion on this can be found in section G on page 37.
9. **At least one full-time LAN administrator per 40 servers.**
   This area also has a need for expansion of staff. Not just because of additional server support, but LAN administrators within FCPS also server additional functions. With the expected expansion of wireless networking to support the 1:1 ratio in secondary schools additional staff would be needed. Expansion of staff is a funding priority and will be planned for in future budget years.

10. **At least one full-time WAN administrator per 25 sites.**
    WAN support does require additional staffing. This position is also prioritized in funding requests and could potentially also support some of the wireless networking infrastructure needs.

E. Strategies for increasing parental involvement through the use of technology

Goal IV of the FCPS Master Plan states, "All sectors of the community will be engaged in the education of our children." The following are examples of how FCPS is reaching out to the parents and community through the use of technology.

- FCPSTeach – The FCPSTeach web site (http://fcpsteach.org/) gives teachers and administrators and other staff members the opportunity to easily build web sites to use as virtual classrooms, to supplement their classroom materials, or to post information for widespread distribution.
- FCPS.org – Through the school system web site (http://www.fcps.org) , parents, community members, students and staff can get up-to-date access to information regarding academics, athletics, policies and regulations, calendars, transportation, or link to individual school web pages.
- Find-out First – Through the Find Out First (http://fcps.ezcommunicator.net/edu/frederick/loginform.asp?app=0&nextpage=/edu/frederick/MyAccount.asp&query=app=0) resource, parents and community members can get email access to the information they need about Frederick County Public Schools.
- Online grade book – FCPS is utilizing an online grade book application known as Pinnacle that allows parents to check on student progress constantly throughout the school year. Currently this application provides grade information for all secondary students. Plans are to expand this to elementary over the next two years.
- Blackboard – Parents are able to log in with guest access to view fully online student courses offered throughout FCPS.
- Digital Content – Many of the digital content resources that are purchased through Media Services allow home access so that student can complete homework assignments and do research outside of the normal school day.
- FCPS will continue to pursue additional ways of involving the parents and community in the education of our children.

F. Plan for addressing the technology needs of economically disadvantaged schools

Based on Master Plan Goal V, "FCPS will advocate for adequate resources to achieve these goals…" it will be our goal to ensure that all schools should have equal access to hardware and software. We will strive to:

- Provide more centrally purchased, system-wide software and digital content so pressure is not placed on the school to provide access out of their existing budgets.
- Continue advocacy for a replacement cycle so that all schools have access to the current technology.
- Continue to pursue grant opportunities that would provide additional funding for hardware, software, and training opportunities.
- Continue to lessen the digital divide between older and newer schools by supplementing their resources, funding, etc.

G. Strategies for hiring, training, and assigning, technical and instructional support staff.

Master Plan Goal III states that, "All employees will be highly qualified, motivated, and effective." However, FCPS salary levels and benefits for technical support positions continue to lag behind those of the business world to the extent that we have difficulty attracting and/or retaining qualified technical staff. The following strategies address this dilemma:

- Investigate the option for creating a separate salary scale for technical support staff in order to be competitive with the business world.
- Develop a career progression for technical staff and seek funding for continuous implementation.
- Reevaluate job descriptions and review salaries.
- For support staff, institute employee technology professional development and an internal certification process to ensure that internal candidates are qualified for job promotions.
- Initiate continuous evaluation by Human Resources of the FCPS salary structure against the private sector, taking into consideration that technology is now a 24 hour X 7 days a week service.

Technical and instructional support for schools and offices is currently provided in the following manner:

- **Instructional support**: 7 full-time Teacher Specialists for Technology in the Instructional Technology Department, each of whom provide professional development, software and hardware support, to all FCPS schools.
- **Administrative and clerical support**: 2 full-time trainers in the Customer Support Services and Training Department, each of whom provide professional development and support for administrators and other support staff.
- **Technical support**: 10 full-time Technology Support Specialists, assigned to technical and network support to approximately 63 schools and all Central Office locations on a service rotation.
- **Network training and support for Technology Support Specialists and building-level technology coordinators**: 1 Network Systems Trainer
- **Technical support**: 19 full-time network and general technicians who maintain FCPS's 15,800+ computers, 63 local area networks, and connections to the wide area network.

- **LAN Technicians**: 2 full-time LAN administrators manage the school and central office LANs and related services.
- **WAN Technicians**: 1 full-time WAN technician manages the WAN that connects over 70 locations throughout the district.
- **Help desk support**: two full-time Help Desk staff members, each of whom provides support for the entire system.
- **Administrative Applications Support**: 1 Enterprise Systems Help Desk staff members
- **Application-specific Suppor**t: 10 members of the administrative support team, each of whom provide application support on applications such as PeopleSoft Financials and Human Resources, Pinnacle, Microsoft Exchange, Maryland State IEP, and eSchoolPlus.
- **Phone System Suppor**t: 3 individuals provide support for the FCPS phone system.
- **School technology Coordinator**: Most schools have made the tradeoff to assign a staff member as the full or part-time technology coordinator in place. However, there are a wide variety of job classifications and technology capabilities among the building technology coordinators. Although several schools have creatively reassigned existing staff to free up a person to support technology, still others have not made accommodations equal to the task. Our recommendation is that this position be outside of the normal staffing allocations and not be filled at the expense of other instructional positions.

The growth of systems and capabilities instituted under the previous three Tech Plans is nothing short of phenomenal. Now in motion, this growth will continue to occur during the course of this Technology Plan. Additional qualified staff will be required if successful implementation, training, and maintenance are to occur. We need to develop staffing ratios for a number of tasks and begin moving toward attaining those goals.

While not addressing all staffing needs (administration, for example), nor mirroring standard business support ratios, the proposed MSDE Technology Plan FY2007-FY2012 established guidelines for some generic positions as follows:

Position	Devices/Employees Supported	MSDE Proposed Ratio	Current FCPS Ratio	Current FCPS Staffing	Needed to Attain MSDE Standard
General Technicians	15,800	1:300	1:988	16	36
LAN Technician	156	1:40	1:78	2	2
WAN Technician	70	1:25	1:70	1	2
Instructional Support	2904	1:400	1:415	7	1
Administrative and Clerical Support	2500	1:400	1:1000	2	4

For FCPS to meet the staffing ratios recommended by the State Plan, the following additional positions would need to be funded:

General Technicians – 36 additional technicians
LAN/WAN Technicians – 4 Certified Network Engineers
Instructional Support – 1 Teacher Specialists for Technology
Administrative and Clerical Support – 4 Technology Trainers

Building upon our local strategy of providing each building with "first level" technical support, we are recommending a minimum of 18 additional Technology Support Specialist positions. These positions, phased in over a three-year period would provide technical support for instructional and administrative staff, equipment, and networks. It is also recommended that these positions be re-classified to 12-month employment. The growth in summer workshops, summer classes, etc. is placing growing support demands and hindering our ability to provide customer service.

It is important to note that the MSDE Plan does not address all of the staffing needs to support a school system's technology. The diversity of technology-based resources, the level of use, local system initiatives, etc. precludes more defined requirements.

Specific positions recommended are included in ***Appendix E*** – *Three-Year Projection of Costs*.

H. Description of local school system Acceptable Use and Internet Safety policies and how these policies are implemented and enforced in compliance with the Children's Internet Protection Act (CIPA).

- Student online activity is currently regulated through the FCPS Acceptable Use Regulation (AUR) which states that Internet access may occur in one of two ways; directed use or independent use. Students in PreK-5 use the Internet only under the direct supervision of staff members or their adult designees. Independent access is permitted at the secondary level when students submit a completed student independent access permission form.
- Access is provided for school-related activities only.
- Access to electronic mail under directed use would occur only under the supervision of a staff member. Students with independent use are not provided with email accounts except as required for specific courses and under the direction of the teachers of those courses.
- Users are prohibited from unauthorized entry, impersonating another user, destruction of computer systems and files, and revealing personal information.
- Violation of the regulation leads to disciplinary action or sanctions, where appropriate.
- FCPS has a filtering solution (WebSense) in place to filter "graphical depictions of pornography and obscenity." This system is CIPA compliant
- Regulations are communicated via the Student handbook and are readily accessible through the district's web site.
- AUR is read and signed at the secondary level.
- Monitoring is done through a combination of tools that interact with the firewall, the web site filter appliance and the spam filter.

- The regulation is currently under review for an update in FY10. Update will further address C3 areas. A current copy is attached.

I. Strategies for ensuring that equipment, software, and online resources that are purchased and developed are accessible for all learners.

- Instructional Technology and the ACTT will work collaboratively with other departments to ensure that all hardware and software has been tested for accessibility and Section 508 compliance.
- Media Services, Instructional Technology and the ACTT will assist in educating individuals involved in the creation and purchase of applications about the need for all materials, web sites, and other resources developed within the school system to be 508 compliant and accessible to all individuals.
- Equipment, software and online resources are purchased and developed to be accessible for the general school population. The Individual Education Plan (IEP) Team meets to determine if an individual is learning, achieving and performing at a level that reflects his/her skills or abilities. According to IDEA, each IEP Team should annually review a student's need for Assistive Technology. An "Assistive Technology Device" is an item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a student with a disability. When discussing this need, the staff must consider that Assistive Technology ranges from "low tech" interventions, such as writing paper with raised lines, pencil grips, communication boards, sign language, and picture schedules to "high tech" interventions, such as voice-output communication devices and specialized computer software. The IEP Team documents their discussion of AT in the narrative notes and indicates if: the student is accessing the curriculum and making progress in his/her educational program and Assistive Technology is not indicated at this time; Assistive Technology is included in the current IEP; Assistive Technology is indicated and will be added to the IEP; or, Assistive Technology is indicated and a referral will be made to the Augmentative Communication and Technology (ACT) Team.
- A referral is made to the ACT Team when the school is unable to provide the necessary knowledge or technology for the student. If after observation and consultation, it is determined that modifications need to be made to the student's IEP to reflect assistive technology, the ACT Team will acquire the assistive technology, maintain it, train staff, student, and parents, and coordinate its use with existing education and rehabilitation plans and programs.

Section V –

Assess Plan and the Impact of Technology

Section V – Assess Plan and the impact of Technology

FCPS Master Plan Goal III states that, "All employees will be highly qualified, motivated, and effective." It is our belief that technology staff development serves a dual purpose. While targeted at the professional growth of the teacher, the ultimate goal is to use technology to enhance and enrich student achievement in all curricular areas. Only when teachers are competent technology users themselves, will they become proficient in integrating technology into the teaching/learning process. Providing the hardware without adequate training in its use -- and its endless possibilities for enriching the learning experience -- means that the promise of technology is frequently unrealized.

A. Process for evaluating how the use of technology is impacting student learning, especially as related to the Maryland Content Standards, including the Voluntary State Curriculum, High School Core Learning Goals, Maryland School Assessment, and High School Assessment.

This issue focuses on not *whether* technology facilitates learning, but rather *when* and *how*. It is closely connected to larger issues such as the changing role of the teacher, new ideas about the way children learn, and re-structuring the learning environment to better take advantage of new ideas and new technologies. The data will demonstrate the areas where technology helps produce the desired results and will assist in planning for future integration activities.

- The integration of the Technology Literacy Standards into the FCPS Essential Curriculum (which is aligned to the Voluntary State Curriculum). Associated resources, activities, and, subsequently, assessments will be impacted and used to measure student progress toward mastering content. These items should not be separate entities and the process should be grounded in the goals for student learning, not the use of technology.
- The FCPS Online Tech Survey data will show the impact of technology on learning. It asks instructional staff to evaluate the degree to which technology has resulted in:
    - Increased motivation and/or engagement in learning.
    - Increased opportunities/necessity for critical thinking.
    - Increased opportunities to solve relevant, real-life problems.
    - More comprehensive, deeper understanding of content and concepts.
    - Improved information access and processing.
    - More meaningful and effective communication of knowledge and information.
    - Increased productivity.
    - Extension of creativity,
    - Improved acquisition of basic skills.
- Controlled, comparative studies of software applications through "piloting" at a school and tracking student performance/achievement.
- Qualitative data will complete the picture. Anecdotal evidence from lab logs, focus groups, journals, interviews, classroom and lab observations will provide the rich detail that is difficult to capture in survey form.
- Students will be included in the evaluation through the following methods: interviews, portfolios, surveys, journals, and showcases of student work.

B. Process for evaluating how students are being prepared to master the *Maryland Technology Literacy Standards for Students (MTLSS)* and how educators are being prepared to master the *Maryland Teacher Technology Standards* and/or the *Maryland Technology Standards for School Administrators*.

FCPS is currently working to integrate technology into curricular programs to help students meet the Maryland technology literacy standards. Processes are currently in development. Instructional Technology staff, more specifically the Technology Teacher Specialists and Curriculum specialists from the Curriculum division when training using technology make sure it is applicable to the standards.

C. Method for evaluating the effectiveness of professional development in integrating technology into curriculum and instruction.

Data from some or all of the following will be used to determine additional staff development needs and to adjust current professional development offerings.

- From the *FCPS Design for Professional Development*:
  - **Level 1:** Participants' Reactions, as gathered by evaluation forms at the end of training sessions, lab logs, or the FCPS online technology survey.
  - **Level II:** Participants' Learning, including forms to measure the knowledge and skills gained from the professional development demonstrations, the FCPS online technology survey, or participant reflections or portfolios.
  - **Level III:** Organizational Support and Change, as shown in district and school records, minutes from follow-up meetings, structured interviews, focus groups, feedback from department heads, or participant portfolios.
  - **Level IV:** Participants' Use of New Knowledge and Skills. This level of information is gathered after some time has elapsed following the training, and may include tools such as questionnaires, participant portfolios, or structured interviews with students, parents, teachers, and/or administrators.
- Professional development on administrative applications will be assessed using some or all of these measures:
  - Analysis of data in a training database
  - Increased utilization of administrative applications
  - Log of calls to the Help Desk
  - Identification of changes in the nature of calls to the Help Desk as professional development progresses

D. Strategies for building the capacity of educators to use a research base to evaluate and implement instructional technology models, programs and content to improve teaching and learning.

- Continue to offer the Building Level Trainer (BLT) program, which consists of two trainers per feeder pattern who work with a core group of 5-10 individuals on integrating technology into their daily instruction, and expand the program as funding allows.
- Continue to provide staff development for teachers on digital content that is available and how to effectively integrate it into their daily instruction.
- Continue to provide staff development for teachers on selecting and using appropriate technology to support content-specific learning outcomes.

- Continue to provide staff development on using technology to collect, manage, and report data related to student and school performance.
- Continue to provide staff development for those teachers who are interesting in posting courses on our learning management system on online instructional design and how to be an effective online teacher.
- Continue the development of staff development opportunities which assist teachers in meeting the Maryland Teacher Technology Standards (MTTS) (see ***Appendix A***)
- Expand the use of our learning management system and online materials to enable students and staff to learn anytime, anywhere.

Section VI –

Ensure Adequate Funding

Section VI – Ensure Adequate Funding

FCPS Master Plan Goal V states that, "FCPS will advocate for adequate resources to achieve these goals and manage these resources in a publicly accountable manner." We will strive to uphold this goal by adequately planning and preparing for future needs and expenses. The costs included in this section are an estimate based on current trends in system expenditures for licensing, hardware and server upgrades, contracted services, professional development, digital content, wiring, and much more. We will continue to lobby for additional funding through grant projects as they are available and applicable to our systems needs, goals, and objectives

1. **Projected costs of wiring (and related electronics), equipment, software, online resources, and telecommunications services to be acquired and related expenses needed to implement the plan. (see *Appendix E -* *Three-Year Projection of Costs*)**

2. **Funding projections for on-going maintenance, supplies, and replacement of outdated equipment and resources. (**see ***Appendix E –*** *Three-Year Projection of Costs***)**

3. **Projected budget allocation for professional development equal to at least 30% of requested hardware funds. (**see ***Appendix E -*** *Three-Year Projection of Costs***)**
   There are 6 full-time staff available to meet professional development needs for instructional, administrative, and support technology objectives. We will continue to lobby for additional staffing and funding to meet the system's ongoing professional development needs in technology.

4. **Project cost of implementing targets of the *Maryland Educational Technology Plan for the New Millennium: 2007-2012* over the five year period, including process for determining the projection. (**see ***Appendix F –*** *Five Year costs to meet Millennium targets***)**
   The cost projections are based on information gathered through the yearly Maryland Technology Inventory and through additional internal calculations. Numbers are calculated from the following information:
   - Number of classroom teachers
   - Number of classrooms
   - Number of computers in use at each level
   - Number of LCD Projectors and support equipment already in use

   Additionally current costs based on industry standards are used in conjunction with the gathered numbers to create the projected funding needs. Lastly, it was determined that infrastructure costs need to be included otherwise required computer ratios would be untenable. Wireless is the current recommended standard to support the numbers of computers in schools without a large cost in comparison to wired outlets.

Section VII –

Implementation Strategies and Action Plan

Section VII – Implementation Strategies and Action Plan

A. Process by which progress in implementing the plan will be reviewed and reported:

1. **Strategies for addressing needs identified from an analysis of data from the Maryland Technology Inventory and other sources.**

   A number of steps will be implemented to address the needs identified through various sources including the Maryland Technology Inventory. Some of this will be part of the technology planning committee and some of it may be delegated to one or more subcommittees to allow for focusing on specific areas. These groups would report back to the main committee to assure proper priorities are placed accordingly. Some of the steps will include:

   - Form review team to compare and analyze data to requirements/needs of the technology plan.
   - Use Plan-Do-Study-Act (PDSA) methodology to prioritize needs of the system.
   - Address the needs based on availability of sufficient funding and/or resources.
   - As progress is made go back and re-order the priorities based on changes within the system.

2. **Mechanism and timeline to monitor progress toward the targets.**

   A number of options and techniques are available to allow monitor of progress toward the targets. Generally a solid project management approach using industry standard software such as Microsoft Project will be beneficial to allow easy viewing of current status and milestones within the timeline. A Gantt chart methodology provides clear representation of milestones and targets to be met along a "relative" timeline. It is important to understand that a relative timeline is critical to allow for adjustment based on factors outside the control of this technology plan. As funding and resource allocations shift the timeline can readjust. This will allow for a more realistic view of where things are at any point in time.

3. **Involvement of key stakeholders, especially parents, teachers, students, community, and district administrators, in developing, evaluating and revising the Plan over time.**

   - Review and recommendations from the following groups:
     - Superintendent's Cabinet
     - Associate Superintendents and Directors
     - Directors of Facilities, Fiscal Services, and Human Resources, Communications, and Professional Development
     - Curriculum Specialists
     - Special Education Department personnel (including ACT team)
     - Principals
     - Technology Coordinators
     - School Improvement Teams
     - Various user groups (e.g. PeopleSoft, eSchoolPlus, Pinnacle, Blackboard/Moodle, United Streaming, Library Automation, etc.)

4. **Strategies for communicating to the key stakeholders the success of the Plan and the importance of technology.**
    - Annual Board Reports
    - Administrative Leadership meetings
    - Elementary and Secondary Curriculum specialist meetings
    - Newsletters and other communications/media
    - Conference presentations

B: Implementation Action Plan

Below is a list of major activities, who is responsible, and timelines for implementation, communication, and evaluation of this Plan.

Activities	Responsibility	Timeline	Communication	Evaluation
Integrate technology tools and digital content seamlessly into FCPS instructional resources. • Match the Technology Literacy Standards to the Maryland Voluntary State Curriculum and local FCPS Essential Curriculum and accompanying assessment documents. • Integrate the Technology Standards into additional resources and areas as appropriate.	Department of Curriculum and Instruction, Technology Services	Summer 2009, 2010	Curriculum and Instruction staff, school-based staff, Instructional Technology staff, summer curriculum workshops	Correlation Documentation
• Provide professional development for teachers to make the transition to seamless technology-infused instruction. • Provide professional development on using digital content and streaming media resources available through collaboration between the FCPS Department of Curriculum Media Services and Technology Services Instructional Technology Department. • Continue supporting the system's efforts to improve student performance through technology use at the EXCEL schools. • Continue developing technology "seeds" which identify specific objectives within the FCPS Essential Curriculum where technology can be	Department of Curriculum and Instruction, Technology Services	Ongoing	Curriculum Specialists, Principals, Technology Coordinators, Library Media Specialists, Technology Teacher Specialists, BLT's, etc.	Evaluation measures selected from *FCPS Design for Professional Development* and other evaluation instruments.

integrated to enhance student academic achievement. • Explore and support technology tools that assist teachers in data collection so that assessment information can be readily available for them to use to make meaningful, data-driven, instructional decisions. • Assist with the implementation of applications that support FCPS curricular objectives. • Continue developing online courses to support such programs as Flexible Evening High School, Twilight Program, Home/Hospital, AP Courses, etc. • Develop online courses and remediation modules to assist students in passing MSA and HSA assessments.				
Ensure that FCPS staff and students are <u>technologically literate.</u> • Adopt and implement the Maryland Technology Literacy Standards for Students as developed by the statewide Technology Literacy by 8th Grade (TL8) grant consortium. • Adopt and implement technology standards for teachers, administrators, and support staff. • Provide high quality, sustained professional development focused on assisting all learning community members to be proficient and productive users of technology resources.	Board of Education, Curriculum and Instruction, Instructional Technology Curriculum and Instruction, Instructional Technology	Ongoing Ongoing	Board of Education meeting, Administrative Meetings, FCPS web page, Intranet, Email, etc. Technology Coordinator Meetings, Library Media Specialist Meetings, BLT Meetings, Blackboard/Moodle User Group Meetings, Administrative Meetings, Email, etc.	Standards are reviewed, revised, and formally integrated into curriculum resources Evaluation measures selected from *FCPS Design for Professional Development* and other evaluation instruments

• Develop a new online training portal that provides a variety of content (video, audio, documents) for staff on the system's Intranet. • Continue expanding the Building Level Trainer (BLT) program that was initiated with MSDE formula grant funding. • Continue developing online learning opportunities for FCPS personnel. • Continue developing Electronic Learning Communities (ELCs), which provide support and a forum for interaction at a distance for FCPS staff.	Curriculum and Instruction, Technology Services	2009,2010	Blackboard/Moodle User Group Meetings, Administrative Meetings, Email, etc.	Monitor development and usage of ELCs by staff and stakeholders.
Increase the effectiveness, efficiency and security of school and central office administrative functions <u>and operations.</u> • Increase the ability to make real-time, instructional decisions using eSchoolPlus and Cognos/ReportNet to enhance the data analysis abilities of the student information system. • Provide an integrated method of reporting grades in the student information system to eliminate the use of bubble sheets for interims and report cards. • Provide tools for better analysis of data to improve fiscal management. • Provide opportunities for new employees to attend introductory, technology-oriented workshops on applications such as voicemail, email,	Technology Services	Ongoing	Technology Services and Communications Department staff, Email, administrative meetings, user group meetings, etc.	Monitor increase in utilization of resources and include in annual Board report on technology Gather feedback through user groups, focus groups, surveys, and system leadership meetings. Monitor statistics of types of help desk calls on various tasks.

PeopleSoft, eSchoolPlus, Cognos/ReportNet, etc. • Explore options for tracking and recognizing employee participation in professional development offerings. • Continue to refine the use of the TrackIT work order management system and Help Desk knowledge base to improve the quality of service and reduce turn-around time for resolution of customer service issues. • Continue to work toward elimination of redundant data entry and interoperability of applications. • Continue distribution of "Read Me First" booklets, which provide basic instructions for FCPS technology, to new employees and those in new positions. • Investigate a document imaging solution which would allow for efficient digital storage and retrieval of critical system documents (e.g. finance, human resources, student information). • Investigate a data retrieval and reporting solution which would allow for efficient and timely access to student and teacher performance data. • Expand the use of virtualization of desktop applications and servers to maximize the resources. • Investigate Linux, Web 2.0, and other open source solutions and how they can provide capabilities at a greatly reduce cost. • Implement a web/ video conferencing system	Technology Services	2009-2010	Technology Services staff, email, meetings, new conferencing	Monitoring number of meetings held electronically, Cost

for staff to maximize meeting times and minimize costs of travel.			system.	savings on travel.
Provide equal access for <u>the learning community.</u> • 3:1 student to system standard instructional computer ratio for elementary schools. • 1:1 student to system standard instructional computer ratio for secondary schools. • A multimedia cart solution consisting of a computer projection device, document camera, speakers, and DVD player. • A system standard workstation and email account for every teacher. • A system standard workstation per full-time equivalent (FTE) administrator, guidance counselor, and office support staff. • A system standard workstation per lead cluster mechanic, food service cluster office, and custodial office. • A telephone in every classroom and voicemail for every teacher. • Continue to maintain a standardized list of approved software applications that meet the needs of the learning community by supporting curricular objectives and enhancing the productivity of administrative personnel. • Connectivity for all facilities to the Local Area Network (LAN) and Wide Area Network (WAN) for access to applications such as email, Internet, productivity and instructional software, etc. • An Internet	Technology Services Division	FY09-FY14	Technology Services Staff, Email, Administrative Meetings, system reports and presentations, etc.	Equipment and services are in place and operating effectively

filtering solution to support CIPA requirements. • Continue progress toward the Library Media Recommended Technology Profiles for elementary, middle, and high schools and provide replacements /upgrades as needed. • Continue advocating for ongoing computer replacement cycles and increased technology resources for schools that have limited access. • Continue advocating for adequate funding to purchase system-wide digital content resources and standardized software applications. • Continue reviewing and recommending new hardware and software products and testing for appropriateness and functionality (including 508 compliance). • Collaborate with curriculum specialists and other school-based administration to determine their hardware/software needs.	Technology Services	Ongoing	Technology Services Staff, Email, Administrative Meetings, system reports and presentations, etc.	Equipment and services are in place and operating effectively
• Upgrade the system for teacher web pages to facilitate home-school communications. • Expand the use of our learning management system so that all members of the learning community can access at all times through the transition to an open source solution such as Moodle. • Continue collaboration between the Department of Curriculum and Instruction, Technology Services Instructional Technology Department and Special	Technology Services and Communications Department	Ongoing with major completion in FY10	Technology Services and Communications Staff, meetings, email	Monitoring of access from community to web sites, feedback from focus groups.

Education/Assistive Technology Department to ensure equal access for all students. • Expand communications options using web/video conferencing tools. • Expand the use of standardized school web pages to further facilitate home-school communications. • Explore Web 2.0 technologies that provide other forms of communications such as wikis, blogs, Twitter, etc. • Expand wireless installation through all FCPS schools. • Upgrade to a textbook management system.	Technology Services	FY10-FY11	Technology Services Staff, meetings, email, video conferencing	Monitor usage and feedback from stakeholders
<u>Assess the impact</u> of technology on student learning and staff productivity. • Develop a comprehensive, on-going model of evaluating the impact of technology on teaching and learning. • Develop a systematic evaluation process that calls for the piloting and testing of a technology initiative prior to rolling it out system-wide. • Design evaluation tools that allow collection of data. • Implement MTTS, TSSA, and Student Technology Standards.	Division of Curriculum & Instruction (including Media Services), Technology Services Division(including Instructional Technology)	Ongoing	Instructional Technology Staff, Division of Curriculum & Instruction Staff, Testing and Accountability Staff, Curriculum Specialists, Principals, school-based staff, etc.	National, state, and local assessment instruments as appropriate Changes in evaluation procedures and increase in the number of hours of participation in technology training

Appendices

Appendix A – Links to Documents referenced in the Technology Plan

Maryland Educational Technology Plan for the New Millennium: 2007-2012:
http://marylandpublicschools.org/NR/rdonlyres/9242FEDD-09F7-4BB0-8F1F-AE6FAE562EA8/13485/TechPlanFinalfromPrinter73007.pdf

Maryland Teacher Technology Standards:
http://marylandpublicschools.org/NR/rdonlyres/CFAE6DE8-94E4-4D72-A1DE-50061B2B2A05/13086/TeacherTechnologyStandardsMSDEVersion.doc

Maryland Student Technology Standards:
http://marylandpublicschools.org/NR/rdonlyres/CFAE6DE8-94E4-4D72-A1DE-50061B2B2A05/13089/MTLSSComplete1.pdf

Maryland Technology Standards for School Administrators:
http://marylandpublicschools.org/NR/rdonlyres/CFAE6DE8-94E4-4D72-A1DE-50061B2B2A05/13088/AdministratorTechnologyStandardsMSDEVersion1.doc

Maryland Teacher Professional Development Standards:
http://www.marylandpublicschools.org/MSDE/divisions/instruction/prof_standards

Maryland Teacher Professional Development Planning Guide (Revised):
http://www.marylandpublicschools.org/NR/rdonlyres/DF957230-EC07-4FEE-B904-7FEB176BD978/18591/MarylandTeacherProfessionalDevelopmentPlanningGuid.pdf

Maryland Teacher Professional Development Evaluation Guide (New this year):
http://marylandpublicschools.org/NR/rdonlyres/DF957230-EC07-4FEE-B904-7FEB176BD978/18593/MarylandTeacherProfessionalDevelopmentEvaluationGu.pdf

Appendix B – Recommended Technology Profiles for FCPS

Component	Recommendation
Networks	Wired and wireless Local Area Network (LAN) and connection to Wide Area Network (WAN)
Classrooms	1 dedicated teacher workstation
	1 dedicated instructional workstation consisting of a multimedia computer, cart, VHS/DVD player, speakers, data projector (ceiling mounted where appropriate), document camera, and interactive white boards (as appropriate)
	5 data drops, 1 phone drop, 1 video drop
	Access to local and network printers
Labs	Minimum of 30 multimedia workstations per lab equivalent (with either speakers or headsets)
	Minimum of 1 networked printer
	Data projector (ceiling mounted where appropriate)
	Interactive white boards (as appropriate)
Library Media Center	Computer workstations for patron access (number varies depending on level – 35 for HS, 20 for MS, 15 for ES, 12 for PS)
	1 dedicated circulation workstation
	1 dedicated administrative/management workstation
	1 dedicated instructional workstation consisting of a multimedia computer, cart, VHS/DVD player, speakers, data projector (ceiling mounted where appropriate), and document camera
	Access to a minimum of 1 local printer and 1-2 network printers
Administrative Offices	1workstation per FTE office staff (one with hand-held scanner for student information system data entry)
	1 workstation per guidance counselor
	Minimum of 1 networked printer
Shared Resources	File server(s) – How many depends on the size and usage of the school
	Networked printer(s) – How many depends on the size and usage of the school
	Minimum of 1 presentation device per instructional area
	Digital Camera(s) – How many depends on the size and usage of the school
	Scanner(s) – How many depends on the size and usage of the school
	Interactive white boards on wheels (as appropriate)
	Wireless laptop carts/Access points
Technology Staff	1 Technology Support Specialist for schools with more than 350 computers
	1 Technology Support Specialist for two schools with 150-349 computers
	1 Technology Support Specialist for three schools with up to 149 computers
	1 FTE building-level Technology Coordinator

Appendix C – Approved Software List for Network Use

Approved Software List

The following software applications have been tested for compliance with FCPS network protocols and approved by Technology Services. Each individual school network represents a unique combination of software titles which interact in sometimes unpredictable ways. Approved software may or may not be compatible with software already installed. The "approval" of a software title does not guarantee it will operate in a trouble-free manner on all school networks.

Software/Web Site Title	Version(if applicable)
17" Touch Window	
2 Snap Switch Caps	
3-D Home Architect	
4 Snap Switch Caps	
A Field Trip Into The Sea	
A Field Trip to the Earth	1.1S
Acrobat Professional	8
Adam: The Inside Story	2
Adobe AfterEffects: CS3	3
Adobe Premier Elements	4 - see note for version 7
Adobe Reader	8
Adobe's Creative Suite, standard includes - Acrobat Pro, InDesign, Illustrator, and Photoshop Extended.	3
Africa Inspirer	4.04N
ALA Read Graphics	1
Antietam Expedition Guide	2004
ArcExplorer - Java edition for Education	for Education 2.3.2
Art Explosion (29 disks)	
Asia Inpirer	4.0N
Audacity	1.2.6
Auralia	2.1.14.25
Auto Sketch	7, 8, 9

AutoCad	2008
AutoCadLT	2008
Autodesk Maya	2008.0
Avervision	
Balanced Literacy	
Band in the Box	
Beat the Computer Pro	4.0
Big Red Switch	
Big Track	
Big Track Mouse	
Big Tracks	
Bigmack Communicator	
Blackboard Online Classroom Builder (Web-delivered)	
Boardmaker	
Boardmaker Photo & Symbols Bundle	
Boardmaker Speaking Dynamically Pro	
BodyWorks: A 3D Journey Through the Human Anatomy	6
Book Builder: All Books (various titles)	
BookFlix	
Bridges	
Building Blocks CD (comes with Number Worlds Intervention Program)	
Building Homes of Our Own	
Calculator	5.1
Califone Cardmaster w/Blank Audio Cards	
CamStudio	5.10
Captivate	
Carnegie Learning - Cognitive Tutor	
Carrara 6 Pro	6 Pro
Carrarra	
Catapult Software	
CD Drive	
CD/DVD Burner XP	
Classroom Jeopardy	1.03
Classroom Performance System (CPS) - go to web link below for update	v5.61.0016
Classroom Performance System for Power Point	v5.61.3017
Classroom Suite (Intellitools)	
Clay Animation	
Clicker 5	5

Clicker Metafiles (for version 5)	
Cobblestone History - Social Sciences	
Cognitive Tutor	
Communicate: Sym Writer	version 5-standalone
Communications in Print 2	2.65a.
Corel Painter X	X
Cyber Ed: From DNA to Protein	1
Cyber Ed: Genetic Engineering	1.7
Cyber Ed: Inside the Cell	2
Cyber Ed: Mitosis	1.5
Cyber Ed: Photosynthesis	1.5
Cyber Ed: The Chemistry of Living Things	1
Cyber Ed:Enzymes	1.5
Cyber Ed:The Plasma Membrane and Cellular Transport	1
Dana-Portable Word Processor	
Decisions Decisions Ancient Empires	5.01N
Decisions, Decisions Building A Nation	5.0N
Decisions, Decisions Constitution	5.0N
Decisions, Decisions Immigration	5.0N
Decisions: About The Environment	
Del.icious	
DePloy	2.00
Descartes Cove (John Hopkins Center for Talented Youth)	1.2
DIBELS-M Class Direct	
Digiac - Accelerated Electronic Program	
Digiac - Lith Sensors	
Discover Astronomy Maris Multimedia	1
DK: My Amazing Human Body	
Drupal	5
E Instruction Windows Chalkboard Driver - Go to weblink for latest update.	
Earth Science Resource Disc	
Easy Teach-eInstruction Chalkboard	4.01
Easy Teach-Walk and Talk Board	3.2
Elements	1N
Epson Projector Software	
Epson Scanner 3590 w/Warranty	
Equation Tile Teasers	
Eschool Teacher Access Center	1.90
Essentials of Music Theory	1999.00
Europe Inspirer	4.0N

Exam View -- Import Utility	6.2
Exam View -- Player	6.2
Exam View -- Test Builder	6.2
Exam View -- Test Builder	5.2 version 6.2 pending
Exam View -- Test Manager	6.2
ExamView Player	5.2
Exploring Magetism	?
Fastt Math	1.20
FATHOM	2
FCPS Teach	
Final Print Music	2007
Finale	2007, 2008
Finale NotePad	
Finale Print Music	2008
Fireworks	CS3 - 9
Flash	
Flash-Active X	9
Flight Simulator	2002
Flinn combined MSDSI chemventory	5.5
Flinn Scientific Inc.: Flinn Combined MSDS / Chemventory	5.5
Flip Video	
Floppy Drive	
Food Force	
Form Finder	
Fraction Attraction	
Frames	4.00
Front Page 2003	2003
Fuel Cells: Driving The Future	2006
Gale Professional Collection	
Geological Processes	2005
Geometer' Sketchpad	4.07 pending
Gettysburg Expedition Guide	2000
Go Temp - Logger Lite	1 - version needs updated to 1.4
Google Earth/Sky	4.3 version
Google Sketch Up	6
Graph Paper Printer	4.03
Green Globs & Graphing Equations	
Grooved Platform Communication w/Messages and Lights	
Help Me 2 Learn: Phonics 1a - Vowel Sounds/Super Star Series - Short and Long Vowel Sounds, Beginning Level Reading	5.00

Help Me To Learn: Super Star Series - Phonics 1a Vowel Sound	5.00
Hidden Treasures of AlJabar	
Hot Dog Stand	
How The West Was 1 + 3 X 4	
I Talk 2 Communicator	
IEP Connection	
I-Know:	
Ilearn - IPass	2008-2009
Illustrator	
Imagination Suite -- ImageBlender 3	3.2.30
Imagination Suite -- Pixie 2	2.0.23
Imagination Suite -- WebBlender 2	2.0.67
Imagination Suite: Frames	4
InDesign	
Inspiration	8
Inspiration	8
InspireData	1 and 1.5
Intellikeys	
InTelliPromptor (Media Production)	
Interactive Biology-Plato	
Internet Explorer	7
Interwrite Workspace for Echalkboard (ExamView Version)	7.70
Interwrite Workspace for Echalkboard Content Pack	3.02
Introduction to Mobile Robotics: Robotics Engineering	1
IPass - WebLink	
IPass Remote Access CD	
IPass Reports	
Issues & Controversies	
Itunes	
Itunes	
Java	5
Jelly Bean Switch	
Jing	2.09
Jumbo Tickle me Elmo #9028	
Kidspiration	2
Kurzweil 3000	network versions 9, 10 or 11
Kurzweil Read	9 or 10
Kurzweil Scan and Read - Color	9 or 10
Lab Volt - All Modules	

LabVolt: Tech Lab System Module	
LabVolt: 5100 File Server	
LabVolt: Automation Robotics Module	
LabVolt: Optics/Laser Module	
LabVolt: Plastics Module	
Lame Encoder (for Audicity)	
Learn About Weather	Network 1.0
Lexia SOS	?
Life Science Resource Disc	
Little Step by Step Communicator	
Littlemack Communicator	
Logal Biology	
Logger Pro with Graphical Analysis MS/HS	3.6.1
LossLess Code for CamStudio	
M Box - ProTools/LE Plus	
Macromedia Shockwave Player	10
Magnifier	
MapMaker's Tool Kit	1.0N
Mapping and Monitoring Maryland Streams	
Mapping Our World	?
Math Blaster	
Math Investigations - Grade 2: Resources Master CD-ROM	2008
Math Investigations - Grade 4: Resource Masters CD-ROM	2008
Math Investigations - Grade K: Resources Master CD-ROM	2008
Math Investigations: LogoPaths	2008
Math Investigations: Shapes	2008
Math Type	6
McAfee Virus Scan	8.20
Meet/Team Manager	2
Micrograde	5.04
Microsoft Office 2003 (Word, Excel, Access, PP, Publisher)	2003
Microtype	4
Millie's Math House	1.0 - Note version 4 is NOT approved
Mimio Devices	4.1
Mimio-eInstruction Chalkboard	5.14
Mind Point QuizShow	(1999-2003)
Mind Point QuizShow SE	(2003 - 2004)
Mindstorm - Robotics (Lego)	1.1
Minibubble Blower #280	

MMSR - Maryland Model for School Readiness	
MMSR Fall Exemplars	
MMSR User Guide	
MovieMaker	5.1
Moving With Math - WebLink	
Mozilla Firefox	3
MS Office 2007 File Converter	
MS Paint	5.1
Music Ace Maestro	4.00
Musition 2	2.0.11.22
Narrator	
National Inspirer	4.02
Neighborhood Map Machine	2.00
Neo and Dana Manager	
Neo-Portable Word Processor	
Number Worlds: E Math Tools	?
Number Worlds: E-Access	5.10
Numbers Recovered	1.0N
Numbers Undercover	1.3.2N
Numonics	
On-Screen Keyboard	2
Open Office	
Oregon Trail 5th edition	
Outlook Web Access	
Page Maker	
PebbleGo	
PhotoShop	CS3 - 10
PhotoSmart for HP cameras	
PhotoStory 3	
Picasa	
Pinnacle Help	
Pinnacle Internet Viewer	
Pinnacle Studio	9,10, 11
PIX Writer	
Polar E-Series	5.0.141
Poser 7	7
Poser Pro	pro
Powerlink 3 Control Unit	
Practica Musica	4
Prentice Hall: Virtual Physical Science	network
Print Music Finale	2007.00

Promethean ActiveStudio	3.600
Promethean ActivInspire	network
Promethean Primary	3.62
Punch Professional Home Design	1
Puppy Dog #889	
Pyeware	
Python	
Quick Time	7.1
Read 180	
ReadAbout	
ReadPlease	
Real Player	10
Remote ExamView Importer	
Remote ExamView Player	
Remote ExamView Pro	
Return of the Incredible Machine	check for version numbers
Rskills	
Sammy's Science House	1.00
Sanako Media Lite	7
Scholastic Keys - Max Count	1.46
Scholastic Keys - Max Data	1.46
Scholastic Keys - Max Show	1.46
Scholastic Keys - Max Write	1.46
Scholastic Reading Counts	
School Fonts for Beginning Writing.	Kimberly Voss
School Website	
Science Resource Center	
Selector Tools	2006
Sibellius	? See note
Sibellius Compass with Tracker	6.7
Sibillus Scorch	
Sign Lab - DieCast label maker	
SimCity: Future City Competition	4 Deluxe
Sing Along CD Player #8017	
Singing Barney #453	
SIRS Discover	
SIRS Knowledge Source	
Smart Alex	
SmartMusic	10
Snag It	8
Songs/Sing at Preschool	

Speak Q	
Specs Switch	
Splash	
SRI Enterprise	
Staff Intranet (by School Name)	
Steck-Vaughn: Exploring Land Habitats	1997
Storytime Book and CD	
Student Intranet (by School Name)	
Student Pinnacle Viewer:	
Student Resource Center	
Sub Management System	
Sunburst Communications, Inc.: A Field Trip into the Sea	
Sunburst Communications, Inc.: A Field Trip to the Sky	
Super Source K-6	Network
Super Talker	
Swish	
Switchit! Farm Extra	
Teach Me to Talk	
Tech Speak 6 Levels	
Ten Tricky Tiles	
The Dynamic Sun	4
TI Connect	
Timeliner 5	5
Timer Tools	2006
TI-Smart View	
TLC - The Library Coorporation	
Tom Snyder Productions: Science Seekers Endangered Species	
Tom Snyder Productions: Science Seekers Hidden in Rocks	
Tom Snyder Productions: Science Seekers Safe Water	1.0.1
Trudy's Time and Place**	1N
TWIST	1
Type To Learn Jr	3.3n
Typing Program (will supply recommended title)	
Unraveling the Secrets of the Solar Wind	?
UXL Science	1N
Variety Games, Inc	12/2/2004
Vegas Pro 8	8
Vision 6 with SurfLock (Geneva Logic)	

VLC Media Player	
VlogIT	2.5
VTECS Connect	2.2 & copyright 2007
West Point Bridge	
Where Are We?	
Winband 5.1 and Win Choir 5.1	5.1
Windows Media Player	11
Woodcock Johnson III Normative Update Compuscore and Profiles Program	NU - 3
Word Power	
Word Power (for Boardmaker Speaking Dynamically Pro)	
Word Q	network 2.4
Word Q	
Writing with Symbols	2.5
Writing with Symbols	
Writing with Symbols (Mayer Johnson)	
X-Stream Data Acquisition	
Zaner Bloser Fonts	1.00

Updated as of 4/25/2009

Appendix D – Special Education Technology Equipment

Special Education Preschool Classrooms

Computer Access and Peripherals: A minimum of 1 computer for student use, an adapted keyboard that plugs into the computer's USB port with switch interface capability; access to the Intellitools Activity Exchange; a Touch Window; and an adapted mouse with a track ball are provided.

Augmentative Communication Devices and Assistive Technology Equipment:
An assortment of switches; an environmental control unit; language master; platform communicator; several 1 button devices; a single switch device allowing sequential messages; 2, 4, 8, and 32 button speech generating devices; and dedicated devices to meet the individual needs of designated students are available.

Software: Programs to produce a picture library and adapted text (i.e. *Boardmaker*, including *addendums* and *Writing with Symbols);* a variety of cause and effect programs; software to enhance receptive and expressive language skills (i.e. *Teach Me to Talk),* readiness software, sign language programs, and talking books are located in each special education preschool classroom.

> Equipment/Materials: A variety of battery operated toys; battery interrupters; switch adapters; talking schedule boards; Picture Exchange Communication books; enlarged keycaps; adapted equipment to accommodate students with limited vision (i.e. a glare screen); and a digital camera are provided.

Elementary Schools

Computer Access: In addition to classroom computers provided by individual schools there is a Project Write On! computer in one special education classroom. Other stand alone computers and laptops are provided to meet the individual needs of designated students.

Peripherals: Adapted keyboard that plugs into the computer's USB port with switch interface capability; access to the Intellitools Activity Exchange; Touch Windows as dictated by the individual needs of students; adapted mouse with a track ball are provided .as needed

Augmentative Communication Devices and Assistive Technology Equipment:
The availability of this equipment is dictated by the individual needs of the students and is placed in each elementary school accordingly. Descriptions of equipment includes: an assortment of switches; environmental control unit; language master; a single switch device allowing sequential messages; 1,2, 4, 8, and 32 button speech generating devices, and dedicated devices to meet the individual needs of designated students (i.e. Springboard).

Software: Programs to produce a picture library and adapted text (i.e. *Boardmaker* with *addendums* and *Writing with Symbols);* typing tutors; a variety of cause and effect programs, software to enhance receptive and expressive language skills (i.e. *Teach Me to*

Talk); **readiness software; sign language programs (i.e.*Hypersign)*; talking books (ie. *Living Books*); phonics based software (i.e. *Simon Sounds it Out)*; talking word processing programs (i.e. *Pix Writer, Clicker 4, Write Outloud,* and *Picture Word Power*); graphic organizers (i.e. *Kidspiration, Inspiration*); word prediction programs (ie. *Co:Writer*); software with OCR that support reading, writing, comprehension, and studying (i.e. *Kurzweil, WYNN)*, academic reading and math software, drawing programs; adaptive software for screen magnification and screen reading for the visually impaired (i.e. *Zoom Text)*; software for the blind and visually impaired that offers access to reading, editing, and managing printed media by scanning it and converting it to digital information (*i.e. Open Door* and *Jaws)* are available as indicated for individual students needs.**

Equipment/Materials: Battery operated toys; battery interrupters; switch adapters; talking schedule boards; Picture Exchange Communication books; enlarged keycaps; adapted equipment to accommodate students with limited vision; such as a glare screen; and a digital camera; portable hand-held spelling devices (i.e. Franklin Spellers); talking calculators; large screen display calculators; scanners; portable word processors (i.e. Dana and Neo); sending cables; CCTV (print magnification systems); typing tutors; and literacy software (i.e. Balanced Literacy) *are available.*

Middle and High Schools

Computer Access: In addition to classroom computers provided by the schools, other stand-alone computers and laptops are provided to meet the individual needs of designated students.

Peripherals: Adapted keyboards that plugs into the computer's USB port with switch interface capability; access to the Intellitools Activity Exchange; Touch Windows as dictated by the individual needs of students; adapted mouse are available to meet individual needs.

Augmentative Communication Devices and Assistive Technology Equipment:
The availability of this equipment is dictated by the individual needs of the students and is placed in each middle and high school accordingly. Descriptions of equipment includes: an assortment of switches; environmental control unit; language master; a single switch device allowing sequential messages; 1,2, 4, 8, and 32 button speech generating devices; and, dedicated devices to meet the individual needs of designated students (i.e. Springboard).

Software: Programs to produce a picture library and adapted text (i.e. *Boardmaker* with *addendums* and *Writing with Symbols);* Typing Tutors; a variety of cause and effect programs, software to enhance receptive and expressive language skills (i.e. *Teach Me to Talk);* readiness software; sign language programs (i.e.*Hypersign)*; and talking books; phonics based software; talking word processing programs (i.e. *Pix Writer, Clicker 4, Write Outloud,* and *Picture Word Power*); graphic organizers (i.e. *Inspiration*); word prediction programs (ie. *Co:Writer*); software with OCR that supports reading, writing, comprehension, and studying(i.e. *Kurzweil, WYNN)*, academic reading and math software, drawing programs; adaptive software for screen magnification and screen reading for the visually impaired (i.e. *Zoom Text)*; software for the blind and visually impaired that offers

access to reading, editing, and managing printed media by scanning it and converting it to digital information (*i.e. Open Door* and *Jaws)* are available.

Equipment/Materials: *Battery operated appliances; battery interrupters; switch adapters; talking schedule boards; Picture Exchange Communication books; enlarged keycaps; adapted equipment to accommodate students with limited vision; such as a glare screen; and a digital camera; portable hand-held spelling devices (i.e.* Franklin Spellers*); talking calculators; large screen display calculators; scanners; portable word processors (i.e.* Dana *and* Neo*); sending cables; CCTV (print magnification systems); typing tutors; and literacy software (i.e.* Balanced Literacy) *are provided to meet students individual needs.*

Appendix E – Three Year Projection of Costs

	One Time Expense	Annual Expense	Total Plan Expense	Notes
Three-year projection – equipment, wiring, type and amount of software, online resources, etc				
Computers, dedicated teacher workstation for every staff member		$90,000	$270,000	
Data projector and document camera for every instructional area		$695,000	$2,085,000	Based on average cost of data projectors and document cameras and 1/5 per year for replacement and refresh
Replacement cycle, computers, printers, servers, etc.		$2,950,000	$8,850,000	Based on average costs of computers, etc and a 5 year replacement cycle.
Software, ongoing licenses, office suite/email		$225,000	$675,000	Based on 5000 FTE and MEEC
Software, ongoing licenses, virus protection		$52,000	$156,000	$4 per workstation
Software, ongoing licenses, network software		$86,000	$258,000	Maintenance and upgrade costs
Internet filtering	$53,300	$53,300	$159,900	
Software, SPAM/Pop-up Blocker	$43,300	$43,300	$129,900	
Software and equipment, Workstation deployment solution		$26,700	$80,100	
Software and equipment, Patch management solution		$79,200	$237,600	
Software and equipment, Intrusion Prevention	$15,500	$11,900	$51,200	
Software, Instructional Applications	$120,000	$55,000	$285,000	
Software and implementation for library media automation upgrade	$234,000	$32,000	$330,000	
Software, ongoing license, web-enabled catalog/booking for PL/IMC	$21,000	$2,100	$27,300	
Software, Help Desk		$5,500	$16,500	
Software and implementation for SIS upgrade		$150,000	$450,000	Includes software, hardware, maintenance and implementation.
Software and implementation for Pinnacle		$50,000	$150,000	Includes maintenance and implementation.
Digital Content and library-related applications, system-wide subscriptions		$71,000	$213,000	
Acquire hardware to meet Library Media Recommended Technology Profile	$330,000		$330,000	
Software and implementation for a document imaging system	$200,000	$36,000	$308,000	Includes software, hardware, maintenance and implementation.
Software and implementation for a data retrieval and reporting system		$83,000	$249,000	Includes maintenance and implementation.
Contracted services for issues above and beyond current and proposed technical positions		$140,000	$420,000	
Document Management	$250,000	$95,000	$520,000	Hardware, Software, FTE

	One Time Expense	Annual Expense	Total Plan Expense	Notes
Three-year projection – Telecommunications Services (voice, video, data)				
Telecommunication replacement		$1,590,000	$4,770,000	
All classrooms and portables cabled for voice and data		$15,000	$45,000	
Data, additional bandwidth for Internet Services		$75,000	$225,000	Provides 100 Mbps bandwidth
Staffing *(Bold = to attain MSDE Tech Plan Standards)*				
FY09 One Network Technician (MSCE)	**$70,000**		**$70,000**	
FY09 Six Technology Support Specialists	**$300,000**		**$300,000**	
FY09 One Data Center Technician – 2nd shift	$45,000		$45,000	
FY09 One General Technician	**$50,000**		**$50,000**	
FY09 Six Teacher Specialist for Technology	$450,000		$450,000	
FY09 One Software Integration Specialists	$60,000		$60,000	
FY09 Upgrade 14 Technology Support Specialists to 12-month position	$45,000		$45,000	
FY10 Administrative Secretary	$39,000		$39,000	
FY10 One Network Technician (MSCE)	**$70,000**		**$70,000**	
FY10 One Wireless Technician	$60,000		$60,000	
FY10 One Administrative Systems Trainer	**$75,000**		**$75,000**	
FY10 Six Teacher Specialists for Technology	$450,000		$450,000	
FY10 Instructional Applications Support Specialist	$60,000		$60,000	
FY10 One Database Administrator	$78,000		$78,000	
FY10 Six Technology Support Specialists	**$320,000**		**$320,000**	Positions + 12-month status
FY10 One Help Desk staff person – 2nd shift	$50,000		$50,000	
FY11 One Web Programmer	$60,000		$60,000	
FY11 One Network Technician (MSCE)	**$70,000**		**$70,000**	
FY11 One General Technician	**$50,000**		**$50,000**	
FY11 One Administrative Systems Trainer	**$75,000**		**$75,000**	
FY11 Six Technology Support Specialists	**$320,000**		**$320,000**	Positions + 12-month status
FY11 Six Teacher Specialist for Technology	$450,000		$450,000	
Professional Development (instructional and administrative – 30% of requested hardware funds)		**$1,481,100**	**$4,719,300**	**Based 30% of all hardware allocations**
TOTALS	**$4,514,000**	**$8,193,100**	**$28,520,800**	

Appendix F – Five Year Projection of Costs for Millennium Targets

Targets	FY10	FY11	FY12	FY13	FY14
Educator PC	$360,000	$366,000	$372,000	$378,000	$384,000
Secondary 1:1*	$2,520,000	$2,570,000	$2,620,000	$2,670,000	$2,720,000
Elementary 3:1*	$225,000	$235,000	$245,000	$255,000	$265,000
LCD Projector	$350,000	$350,000	$350,000	$350,000	$350,000
Add. Devices#	$350,000	$350,000	$350,000	$350,000	$350,000
Broadband	$18,000	$18,000	$18,000	$18,000	$18,000
Help Desk	0	$20,000	0	$20,000	0
Technicians	$245,000	$245,000	$245,000	$245,000	$245,000
LAN Admin	0	$65,000	0	$65,000	0
WAN Admin	$80,000	0	$80,000	0	0
Infrastructure@	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$500,000
Totals	**$5,148,000**	**$5,219,000**	**$5,280,000**	**$5,351,000**	**$4,832,000**

* - These costs do not include replacement cycle for existing computers. This is found in ***Appendix E***

- These devices are a multimedia cart with a document camera, speakers, and DVD player

@ - Infrastructure costs are in support of meeting the targeted student to computer ratios. These could include wireless and additional wiring.

Costs are increased each year to take into account increased staff and student enrollment.

Technology Planning Committee

Technology Planning Committee

Special thanks to the following individuals for their assistance with this Plan:

William Boyer, Chairperson
Director of Technology
Frederick County Public Schools

Chris Bohner
Supervisor, Networks and Security
Frederick County Public Schools

Lisa Bostic
Applications Administrator
Frederick County Public Schools

Tom Dean
Network Specialist
Frederick County Public Schools

Chris Heinze
Teacher Specialist
Frederick County Public Schools

Mike Hakkarinen
Teacher Specialist
Frederick County Public Schools

Karen Kroll
Teacher Specialist
Frederick County Public Schools

Mark Payne
Applications Administrator
Frederick County Public Schools

Steve Strunk
Network Engineer
Frederick County Public Schools

Chuck Grover
Mathematics Teacher
Brunswick High School
Frederick County Public Schools

Lori Rounds
Chief Technology Officer
Frederick Community College
Representative of Higher Education
Frederick, Maryland

TBD
Student Representative
Frederick, Maryland

TBD
Parent Representative
Frederick, Maryland

TBD
Representative of Business Community
Frederick, Maryland