

Six-Year Educational Technology Plan
for
Fredericksburg City Schools
2004-2010
Revised Summer 2007



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Signature of the Superintendent

Date

Signature of the Director of Technology

Date

**Fredericksburg City Schools
Technology Plan
Mission/Vision Statement
2004-2010 Plan**

The technology mission for Fredericksburg City Public Schools is to empower students and employees with the knowledge and skills to effectively use technology to access, manage, and exchange information through the use of technology as a natural part of the teaching and learning process to support the 21st century learner.

Fredericksburg City Schools' vision for information technology (IT) begins not with computers or video information systems, but with Fredericksburg's children becoming world-class citizens of the twenty-first century. This vision sees teachers, administrators, parents and the community working together to provide our children with world-class opportunities. We believe that the use of instructional technology can positively affect the quality of teaching and learning by emphasizing core subjects and learning skills, provide for immediate access to information as well as provide a variety of means to publish and communicate information within the school community and the global marketplace. As teachers and students explore 21st century tools, we believe that our teachers will find a new role as facilitators to our students as they explore information and publish their ideas electronically. Furthermore, our teachers will be able to make their instruction more relevant to 21st century learning by incorporating data from a variety of electronic sources and through increased contact with other educators throughout the world. We believe that the cost of this technology is justified by giving the students the technical literacy and communications skills that are in demand in the modern workplace.

We also believe information technology plays an important part in that transition from childhood to world-class citizenship.

Students and Staff will:

- Skillfully use modern technologies, which facilitate and enhance student learning of core subjects as well as emphasize learning skills.
- Confidently and competently use a variety of technologies to create, access, store, retrieve, manipulate and present information
- Use educational technologies to expedite instructional, managerial, and administrative tasks
 - **Teachers** will use modern technologies to simplify administrative tasks such as attendance, grade reporting, lesson plan preparation, and to nurture, monitor, remediate the academic, vocational, and social achievement of students. In addition, our teachers will integrate modern technologies as they develop and utilize these lesson plans in their instruction and assessments.
 - **Administrators** will have improved information in a timely manner enabling them to make academic, financial, and operational decisions faster and more accurately than in previous years.
 - **Parents** will be able to access information on our website to help their children with homework assignments and test preparedness, monitor their child's academic progress, view their child's attendance history, and other information relative to the child's success in school. In addition, parents and students will be able to participate in school-based online training in the use of modern computer technology, accessing web-based programs and using various hardware devices for their personal development.
 - **Community** will be able to use technology to access school information and participate in the expanded education of students through participating in various partnerships, mentorship's, and collaboration activities. Our students must be prepared for a future world with job opportunities that do not exist today, with job skills that are not known today, and with technologies that are not common today.

The Fredericksburg City Public Schools Educational Technology Plan addresses the following needs:

- Internet Safety in accordance with the Virginia Department Division of Technology & Human Resources Guidelines and Resources for Internet Safety which addresses:
 - Personal safety on the Internet
 - Information on the Internet
 - Ethical values regarding the Internet and the use of technology within the division.
- The utilization of 21st century tools and skills where appropriate for creating reports/presentations, conducting research, and communicating ideas and information with others.
- To use technology to enhance creative, collaborative, and innovative problem solving.
- To use technology to improve student performance on state standards and national norm assessments.
- To use technology to enhance creative and innovative problem solving.
- Provide training and support in the application and integration of technology in the classroom.
- Properly maintained network equipment, software, and peripheral equipment.
- The utilization of e-mail and high speed access to the Internet to foster communication within the school, the community, and the world.
- Access to computers, Local Area Network (LAN), and Wide Area Network (WAN) for students, faculty, and administrators.
- Communication of division and school news and information to the public.

**Fredericksburg City Schools
Technology Plan
2004-2010
Current Status/Needs Assessment**

Further improvements in instructional technology of Fredericksburg City Schools have occurred since to this plan since it was issued in 2004. Our technology staff has increased by two (2) with the addition of a full time data entry clerk position and another full time division wide Instructional Technology Integrator (ITI). Through local funds, we have been able to maintain one part-time technology support specialist at three (3) schools and one (1) full-time specialist at the middle school. We have maintain a partnership with the Career and Technology Program's Cisco networking course which provides up to 3 student network interns every year. In addition, we have two (2) full-time technology support technicians provided under our network support service contract. The Director of Technology leads the Technology Department and advises the Superintendent and School Board on all matters concerning administrative and instructional technology for the school division. The new Instructional Technology Integrators (ITIs) in collaboration with the Directors of Instruction and Technology are responsible for all instructional technology matters for infusion of technology into the curriculum for instruction and assessment as well as establishing professional development activities for teachers, staff, and administrators.

In regards to our current network hardware, the division has reallocated previous hardware used in the old James Monroe High School. Such equipment included overhead projectors, data projectors, RGA/VGA cabling, power cables, and Ethernet switches and cables. The division continues to replace outdated and broken computers, printers, and antiquated network hardware and equipment per the hardware replacement cycle identified in this plan. Every school in the division including the Office of Student Services, Original Walker-Grant, and the School Board Office has the following:

- A File Server capable of storing data created by the faculty, staff, administrators, and students
- An Application Server capable of delivering network applications to all of the workstations within the LAN
- A print server capable of delivering network printing applications to all of the workstations within the school's LAN
- A System Update Server (SUS) which downloads and deploys essential Microsoft Critical Updates and security patches to all of the schools' servers and client workstations during off peak hours.
- A Cassette Tape Library and Backup System which protects the school's data stored on LAN servers by providing daily back-ups of division servers.
- Uninterruptible Power Supplies (UPS) to insure sufficient power to safely shutdown the buildings' servers in the event of a power outage
- Secondary Domain Controllers

In addition to the previously mentioned devices, James Monroe High School, serves as the hub for the division's Wide Area Network (WAN) and Internet connection, has the following devices:

- An E-mail server running MS Exchange 2003, Symantec Norton Antivirus, and Microsoft Intelligent Messaging service.
- A Front End Mail Server providing web access to the division's e-mail system via Microsoft Outlook Web Access (OWA)
- A Pearson SMS Student Management System consisting of:
 - A Microsoft SQL Database Server which hosts the School Management System and stores data entered into the Student Information System (SIS)
 - A SMS Web Server which hosts SMS and provides Administration and Teachers with secure access to the divisions Student Management System
 - A SMS Report Server, which provides reports, services to administration and teachers.
 - A SMS Grade Server, which handles all backend services in, regards to teachers grade books.

- A SMS test system used for testing SMS updates and patches prior to deployment on the production SMS system.
- Food Services sever running Microsoft SQL server which processes, stores, and reports on food item sales at each site.
- An Anti SPAM (unsolicited e-mail) filter server utilizing GFI Mail Essentials 12.0 which limits the number of SPAM emails each user receives.
- A FortiGate-1000 firewall which provides complete network protection at the perimeter through a combination of network-based antivirus, web content filtering, firewall, VPN, and network-based intrusion detection/prevention (IDP), and traffic shaping.
- A Dual Xeon 2.8 GHz Proxy server which provides Internet Content Filtering required by law through Symantec Web Security 3.0
- A Dual Xeon 2.8 GHz web server running Microsoft IIS services which provides our web presence to the world

Since the previous publication of this plan, the Student Management System servers were implemented during the 05-06 school year and deployed division wide. All servers have ample memory, storage space, and backup devices. User accounts for all new faculty, staff, and administration as well as accounts for middle and high school students were established. In addition, e-mail accounts for all new employees have been created and linked to the division's web directory located on the division website. In the Fall of 2006, e-mail archiving was implemented in accordance with state and federal guidelines for email retention. The data storage capacity for disaster recovery was increased from monthly to yearly. Fredericksburg City Public Schools currently has all four schools are stage I and II certified therefore meeting the state's requirements for offering (eSOL's) online testing. Over the last two years, James Monroe High School administered SOL's online and Grades 3 and 5 were added at Lafayette Upper Elementary School and our middle school in the Spring of 2006. In the future, Fredericksburg City Schools will continue to expanded electronic testing and assessment capabilities with the addition of portable wireless labs and by increasing the number of instructional computer labs at each school.

Over the last three years, Fredericksburg's infrastructure for the WAN and LANs has undergone a massive upgrade. All of the schools are currently operating on a 100 megabit switched network with a gigabit fiber backbone. All network switches are Layer 2-3 HP ProCurve models. The Office of Student Services was upgrade in the summer of 2004 from 10 megabit to 100 megabit connection speed. All of the school system's WAN routers are CISCO 1700's with the exception of James Monroe, which has a CISCO 3640 for WAN connectivity and a Cisco 3745 with 2- WIC-1DSU-T1 for Internet connectivity. During the summer of 2004, Fredericksburg replaced the Symantec FortiGate-300 firewall appliance with a FortiGate 1000 appliance. This firewall provides complete network protection functionality through a combination of network-based antivirus, web content filtering, firewall, VPN, and network-based intrusion detection/prevention (IDP), and traffic shaping. In addition, it assists in eliminating viruses and worms from e-mail, file transfer, and real-time (web) traffic without degrading network performance. During the summer of 2005 the division upgraded its Multilink leased TI Internet connection to a leased Bonded TI x 2 connection, which doubled our bandwidth capacity to 3megabits per second for the Internet. Due to high instructional and administrative demand at the onset of the 2006-2007 school year the Division actively pursued to increase our Point-to-Point connections and our Internet connection capacity. The Internet connection we will receive beginning July 1, 2007 will consist of a DS3 connection with two bonded T-1 connections per site. This will increase our Point-to-Point connectivity to 3 MBs. In addition, we plan to utilize 25 channels of the DS3 connection for our Internet connection. This increase is required due to the centralization of the Divisions servers and Student Information Systems. The Division has made this request according to USAC and will be seeking E-Rate refunds for the services.

Technology Initiatives

Division Wide

In the Fall of 2005, the school division implemented Test for Higher Standards (TFHS) using the Reports Online pre- SOL assessment software. Individuals were trained by the Director of Technology, Director of Instruction and Assessment and the Instructional Technology Integrators in procedures and the correct usage of the system and data obtained from its use. The TFHS system is modeled after Dr. Flanagan's successful Literacy Passport Test (LPT). Training for administrators consisted of four (4) hours and teachers received one (1) hour of training. All students in core curriculum courses with related SOLs are tested at nine-week intervals. Teachers and administrators are able to view online reports and identify students requiring remediation.

Digital Scanners/Copiers with network capabilities have been placed at each school building and the School Board Office. The digital devices allow the division to begin storing information in an electronic format thereby reducing the amount of space required to store archives of documents. As of the Fall of 2006, two schools James Monroe High School and Lafayette Upper Elementary School have implemented digital scanning.

Email Archiving was initiated during the Fall of the 2006-2007 school year. A new server running GFI MailArchiver software was installed at James Monroe High School for this purpose.

A new HP Ultrium Drive Library with ample storage media was installed at James Monroe HS to meet the need of High Speed reliable Disaster Recovery. The existing HP Tape Library was redeployed to Walker-Grant Middle School. Backup procedures and policies have been reviewed and updated.

Fredericksburg City Public School's Internet access and Wide Area Network connectivity will undergo a major upgrade beginning July 2007. Existing Bonded T1's circuits providing Internet access will be upgraded to a DS3 circuit purchased through VITA. 25 Mbs will be utilized for Internet access provided by Verizon. All existing T1 circuits will be upgraded to bonded T1's providing 3 Mbs capacity from each school to James Monroe. All upgrades were done in accordance with USAC and VITA procedures. The division will continue to apply for E-Rate discounts on these circuits.

As required by law the division modified it's AUP to include a component of Internet Safety. Beginning the Fall of 2006-2007 the division established a committee to address Internet Safety Instruction. The committee identified stakeholders, identified resources, and began to study which programs would be responsible for the delivery of instruction. As a result of the committee's work Fredericksburg City Public Schools identified any employee that uses the Internet and has authority over children to be responsible for promoting Internet Safety. Fredericksburg City Public Schools will require these employees to complete the online Isafe.org mentorship training program. Fredericksburg will also make Isafe.org resources available to parents via our website and several parental meetings throughout the year. Beginning September 2007 Internet Safety will be integrated into the schools curriculum at all grade levels.

Hugh Mercer Elementary School

Every instructional classroom at Hugh Mercer Elementary School has two (2) computers, one (1) local printer and one (1) television. Hugh Mercer Elementary School has two computer labs with 25 Pentium III or IV computers in each lab. Both labs and classroom systems are running Windows XP Pro and Office 2003. In addition, Hugh Mercer has 60 Alpha Smarts which can be used by students in any classroom to meet Virginia's Technology SOLs. There are 4 (four) HP 4300DN printers purchased during the 2005-2006 school year. The printers were setup in each grade area and provided the faculty with high-speed duplex printing capability. In addition to these printers, a Xerox networked digital copier/scanner is installed in the Administrative Office. This allows the administration to scan hardcopies and store them as electronic files. Two OCR scanners and software are available for faculty use and are primarily used to score and analyze bubble sheet tests for the TFHS. The cafeteria at Hugh Mercer Elementary School is equipped with two WinSnap Point of Sale terminals and is connected to the Division's Websmart Lunch Management server located at James Monroe High School.

All instructional computers at Hugh Mercer have the following installed on the workstation:

- Microsoft Office Suite 2003 w/FrontPage 2003
- Deep Freeze - Desktop Security program
- SMS - Pearson Student Management System (WAN)
- Kidspiration
- Quizdom Software (Networked)
- Scholastic Reader (Networked)
- Scholastic Inventory (Networked)
- Age & Content specific instructional software
- Follett
- ROS Reports Online (Test for Higher Standards)
- Kidz Solutions
- Study Island – Web based
- A Division developed web application (FCPS Online Lunch Count) used to determine the number of meals required by the cafeteria staff.

The Hugh Mercer library also has nine (9) SVGA data projectors, a total of three (3) Action Board with 32 Personnel Response System (PRS), two (2) Active Slates, two (2) Active Tablets and productivity software, seven (7) digital cameras, and one (1) digital video camera, two (2) sets of 32 Quizdom Personal Response Systems, One (1) Elmo Presenter which allows teachers to present virtually anything to both small and large audiences. Teachers and administrators can check these devices out for instructional use.

Walker-Grant Middle School

With the opening of Lafayette Upper Elementary School Walker-Grant's students population has changed to grades 6-8. In addition to the population change, Walker-Grant Middle School underwent a massive change in the classroom structure for classroom and teacher workstations. In the Spring of 2005-2006, teacher workstations consisting Celeron computers were replaced with Pentium 4 systems running Windows XP Pro and Office 2003. During the Fall of 2006, additional Pentium III or IV's computers were placed in core subject classrooms based on data needs from SOL testing. All mathematics and Language Art classrooms were equipped with two additional networked Pentium III, IV and/or Celeron computers. All other classes have two networked Pentium III or IV computer and additional standalone Apple eMacs with 17-inch flat CRT display and powered by a PowerPC G4 processor. One-networked laser printer has been placed in each grade level classrooms for teacher and student use. During the Spring of 2007 An Apple Xserve server was installed at Walker-Grant as well as an additional cart of 20 wireless MacBooks. These will be used predominately for the creation of POD Cast. In addition to the server and Cart Macbooks, (16) sixteen 30 Gb multimedia iPods were purchased. Training will be provided to the ITI's and 13 members of the faculty regarding the creation and storage of PodCasts during the summer of 2007. Currently, Walker-Grant Middle School has forty (40) wireless Ibook computers, twenty (20) wireless Intel MacBook computers for a total of 60 wireless laptops. The addition of the Intel MacBooks brings the total mobile solution up to three carts of twenty computers each. All mobile solutions are checked out of the Technology Department by teachers and are used by students to complete class assignments or projects and to provide additional machines for Virginia Technology SOL training and testing. Walker-Grant has three (3) grade level computer labs with Pentium IV's Windows XP Pro and Office 2003 and networked laser printer and (two) 2 labs for the Career and Technology programs of Keyboarding and Technology Systems classes. An OCR scanner and software system is available for faculty use and is primarily used to score and analyze bubble sheet test, which allows our teachers to scan and score bubble sheet test. The cafeteria at Walker-Grant Middle School is equipped with two WinSnap Point of Sale terminals and is connected to the Division's Websmart Lunch Management server located at James Monroe High School.

Additionally, the Pocket PC Pilot program was deemed cost prohibitive and as a result of the grade level structuring the Alpha Smart program was cancelled in favor of additional classroom, lab computers, and wireless solutions which all require additional network hardware and cabling as well as electrical upgrades. All instructional computers at Walker-Grant have the following installed on the computers:

- Microsoft Office Suite 2003 w/FrontPage 2003
- Chancery SMS Attendance and Reporting
- Chancery SMS Gradebook
- Tom Snyder's Time-Liner
- Mapmaker's Tool Kit
- Type to Learn (Labs)
- Inspiration
- Scholastic Reader (networked)
- Scholastic Inventory (networked)
- Follett Library Management System (networked)
- Career Futures Software
- ROS (Reports Online) Test for Higher Standards
- A Division developed web application (FCPS Online Lunch Count) used to determine the number of meals required by the cafeteria staff.

Since the last publication of this plan and the reallocation of technology equipment from James Monroe High School, the Media Center at Walker-Grant's technology inventory has increased. It now has ten (10) SVGA data projectors, a total of three (3) Action Board with 32 Personnel Response System (PRS), two (2) Active Slates, two (2) Active Tablets and productivity software, four (4) digital cameras, four (4) digital video cameras, and two laptop

computers, two (2) sets of 32 Quizdom Personal Response Systems which can be signed out by the faculty from the Library, One (1) Elmo Presenter which allows teachers to present virtually anything to both small and large audiences. Teachers and administrators can check these devices out for instructional use. Training for setting up the projector and using the hardware was provided via the media specialist or ITI during pre-school week and throughout the school year.

James Monroe High School

James Monroe opened as a new facility in the Fall of 2006. James Monroe has been designed with 21st century tools similar to Lafayette Upper Elementary School. Each classroom has ceiling mounted SVGA data projector, teachers workstations are Pentium VI computers with Windows XP Pro, Office 2003 and audio/TV/DVD capability which connects to the Audio Video Data ports (AVD) in each room. The AVD's distributes audio/video signal from the teacher's multimedia computer to the classroom audio and video system. Additionally, each classroom has two Pentium IV computers running Windows XP Pro and Office 2003 for student use. Each room has been equipped with a network printer for teacher and student classroom use. Five (5) networked digital copier/scanners have been installed throughout the building, which allows scanning of hardcopies and electronic storage. James Monroe High School has four (4) wireless mobile labs consisting of 80 Pentium IV laptop computers. The wireless labs are distributed to teachers for classroom use via the Media Center. James Monroe currently has four (4) computer research labs located in each of the building's four pods. These labs consist of 25 Pentium IV computers running Windows XP Pro and Office 2003 as well as a networked laser printer. In addition, there are 20 computers in Multimedia Center Lab and 12 Pentium computers in the Library. Currently, there are eight (8) content specific labs at James Monroe. Five (5) labs with Pentium computers used for the delivery of Computer Assisted Instruction (CAI), keyboarding, accounting, computer networking, computer-aided-design, and other instructional activities within the Career and Technical Education (CTE) department. A foreign language lab was added with 28 Sanako Audio Communication Systems and one (1) teacher workstation running the SANAKO server. In addition, James Monroe has a driver education lab equipped with three (3) driving simulators that provide real time feedback to the teacher's computer and student. A journalism lab is in place consisting of eight (15) Pentium IV's and the Adobe Creative Suite. Every classroom in James Monroe has at least two (2) Pentium IV's networked computer for student use with the exception of the Science Department, which has between 4 and 6 computers for student use. An OCR scanner and software system is available for faculty use and is primarily used to score and analyze bubble sheet test, which allows our teachers to scan and score bubble sheet test. The OCR scanner and software is available for faculty use.

All instructional computers at James Monroe have the following applications installed on the workstation:

- Microsoft Windows XP Pro
- Microsoft Office Suite 2003
- Chancery SMS Attendance and Reporting
- Chancery SMS Gradebook
- Tom Snyder's Time-Liner
- Inspiration
- Follett
- Geometer Sketchpad
- Content specific instructional software

Since the last publication of this plan, the Media Center technology inventory has increased. It now has nine (2) mobile data projectors, four (4) Action Board with thirty-two (32) PRS, one (1) Active Tablet and one (1) Active Slate and productivity software. Additionally there are three (3) SGA data projectors, six (6) digital cameras, six (6) microphones, three (3) personal computer to TV converters and two (2) digital video cameras, two (2) sets of 32 Quizdom Personal Response Systems which can be signed out by the faculty from the Library, One (1) Elmo Presenter which allows teachers to present virtually anything to both small and large audiences. Teachers and administrators can check these devices out for instructional classroom use.

During the summer and pre-school weeks the Instructional Technology Integrators (ITIs) conducted intensive training to all faculty and staff members. In addition, the ITI's provided integrations workshops throughout the

school year and provide one-on-one and small group sessions during teachers planning periods. The majority of this training focuses on classroom integration and using classroom technology, which includes but not limited to:

- * The ActiveBoard and supporting peripherals
- * Classroom Audio and Video System
- * TV recording and playback capabilities
- * Digital copiers and scanning to e-mail
- * In addition to the training provided by the ITIs additional training for setting up the computer and projector and using various types of hardware was provided by the media specialist.

Lafayette Upper Elementary School

Lafayette Upper Elementary School opened as a new facility in the Fall of 2005. Lafayette Upper Elementary School has been designed with 21st century tools. Each classroom has ceiling mounted SVGA data projector, teachers workstations are Pentium VI computers with Windows XP Pro, Office 2003 and audio/TV/DVD capability which connects to the AVD's in each room. The AVD's distributes audio/video signal from the teacher's multimedia computer to the classroom audio and video system. Additionally, each classroom has two Pentium IV computers running Windows XP Pro and Office 2003 for student use. Each room has been equipped with a network printer for teacher and student classroom use. Five (5) networked digital copier/scanners have been installed throughout the building, which allows scanning of hardcopies and electronic storage. Lafayette Upper Elementary School currently has three (3) computer research labs. These labs consist of 25 Pentium IV computers running Windows XP Pro and Office 2003 as well as a networked laser printer. In addition, there are 6 computers in Multimedia Center Lab.

All instructional computers at Lafayette Upper Elementary School have the following applications installed on the workstation:

- Microsoft Windows XP Pro
- Microsoft Office Suite 2003
- Chancery SMS Attendance and Reporting
- Chancery SMS Gradebook
- Tom Snyder's Time-Liner
- Inspiration
- Follett Library Management System
- Content specific instructional software
- Study Island
- FastForward
- A division developed web application (FCPS Online Lunch Count) used to determine the number of meals required by the cafeteria staff.

Since the last publication of this plan, the Media Center technology inventory has increased. It now has nine (2) mobile data projectors, four (4) Action Board with thirty-two (32) PRS, one (1) Active Tablet and one (1) Active Slate and productivity software. Additionally Lafayette has six (6) digital cameras for student or teacher use. Teachers and administrators can check these devices out for instructional classroom use. During the Spring of 2007 Two (2) sets of 32 Quizdom Personal Response Systems were purchased. These PRS's can be signed out by the faculty from the Library. In addition one (1) Elmo Presenter was purchased. The presenter will allow teachers to present virtually anything to both small and large audiences.

During the summer and pre-school weeks the ITI's conducted intensive training to all faculty and staff members. In addition, the ITI's provided integrations workshops throughout the school year and provide one-on-one and small group sessions during teachers planning periods. The majority of this training focuses on classroom integration and using classroom technology, which includes but not limited to:

:

- * The ActiveBoard and supporting peripherals
- * Classroom Audio and Video System
- * TV recording and playback capabilities
- * Digital copiers and scanning to e-mail
- * In addition to the training provided by the ITIs additional training for setting up the computer and projector and using various types of hardware was provided by the media specialist.

Software

Fredericksburg will continue to utilizing our Microsoft School Agreement originally purchased in the Spring of 2003. This agreement allows us to upgrade all of the division's computers with the latest operating system and the latest Office suite. Currently, Microsoft XP Pro and Microsoft Office XP 2003 suite are installed division wide. The agreement also entitles us to all critical updates and patches as they become available. In the Fall 2005, Chancery Winschool, Eclass Attendance and Eclass Grades programs were replaced with Chancery SMS a Pearson web based centralized student management system. Software upgrades for Scholastic Reader, Inspiration and Kidspiration were completed the Summer of 2005 and will continue to be upgraded each summer. We currently have Symantec Anti Virus Enterprise version 10.2 running on all of our servers and Symantec Antivirus installed on all of our computers. Symantec Web Security (SWS) web content filtering software is provided by Symantec and FortiGate hardware, which is required by law for E-Rate and "No Child Left Behind" legislation, was upgraded in the summer of 2006.

Beginning in the Fall of 2005, administrators and lead teachers began using the SOL Tracker program was initiated to disaggregate SOL data. Data technicians, Director of Instruction, and ITIs provided training for the program. In the Fall of 2005, Chancery SMS Reporting and Attendance program was implemented. The ITIs, the Data Coordinator, and the Directory of Technology provided training for the program.

In the summer of 2005 the division upgraded the WinSnap lunch program to WebSmartt. Websmartt is a centralized SQL database application with a web interface. A new Server was added to accommodate the database and web program. Specific lunch personnel were trained in the setup and use of Websmartt at each site and at the school board office.

During the Fall of 2006 GFI mail archiving system was deployed to archive all incoming and outgoing email. In addition, our enterprise backup software was upgrades at each school. We will continue to upgrade all enterprise software level software as updates become available and after rigorous testing on test systems.

In the Spring of 2007 and instructional software package Fastforward was purchased. This application was installed on Lafayette's application server and can be utilized in the labs at Lafayette.

Web Base Subscriptions

The current web based subscriptions are:

Grolier Online

SIRS Knowledge Source

TFHS Test for Higher Standards Reporting on Line System (ROS)

Teaching Made Easier

Reading A – Z

Kidz Solutions

Enchanted Learning

United Streaming

Kuder Career Assessment

Cisco Networking Academy

Teaching Made Easier

Learning Island

SOL Tracker

EIMS

Since the previous plan, Fredericksburg City Public Schools no longer subscribes to the following web based subscriptions:

- * BoxerMath site license for Walker Grant Middle School and James Monroe High School
- * K12 Planet

Professional Development

Professional development activities are organized and implemented via the ITIs in collaboration with the Directors of Instruction, Curriculum, and Technology to train teachers and staff on incorporating technology into instruction and assessment as well as new equipment, tools and software purchased. The majority of teachers at Fredericksburg had completed the required Technology Standards for Instructional Personnel (TSIP's) certifications at the end of the 2002 - 2003 school year. All newly hired professional staff members are required to provide proof of meeting the Standards for Instructional Personnel or complete the Fredericksburg City Schools Technology Portfolio by May 1st of their first year of employment. In addition, new and veteran teachers may participate in the Fredericksburg Summer Technology Institute, which is offered during the summer. The Institute provides classes for TSIP's as well as classes and workshops for the effective integration of technology within the curriculum.

The division will continue to collaborate with 14 other school divisions participating in the North Tier Partnership (North Tier) for the No Child Left Behind (NCLB) competitive grant. In addition, Fredericksburg City Public Schools will continue to be the fiscal agent for the North Tier Partnership. This Federal grant provides professional development opportunities in the area of technology integration until 2009. Graduate classes and workshops are provided through Public Broadcasting System (PBS), Educational Development Center, and Troy State University via online and face-to-face classes.

REVIEW OF ACCOMPLISHMENTS FROM PREVIOUS PLAN

- All schools are eSOL stage 1 & 2 certified
- LAN infrastructure at Hugh Mercer, Lafayette, Walker Grant, James Monroe, Original Walker-Grant and School Board Office are 100 Mbps.
- Computers less than a Pentium III have been replaced
- Pentium IV computers purchased in 03-04 had memory upgrades and were formatted prior to the installation of Microsoft XP pro SP2 and Office 2003 SP2
- Department or grade level network printers have been added at each school
- OCR scanner and software system have been added at each school.
- ROS scanner and software system have been added at each school
- A software procurement procedure was developed and implemented to the faculty and staff.
- During the SY 2006-2007 the Internet Bandwidth was increased and hardware appliances installed to more efficiently manage and control bandwidth to meet current and future instructional and administrative needs
- A technology scope and sequence has been implemented for curriculum alignment
- A full time Data Entry/Inventory Manager has been hired to assist in SIS data accuracy and Fixed Assets tracking.
- Two full time Division ITIs have been hired
- The Summer Technology Institute has been revitalized and is scheduled to start in the summer of 2004. The institute will consist of two-week programs addressing TSIP's and the integration of technology into the overall curriculum.
- All servers have been replaced with new XEON systems running Windows Server 2000 and placed on a replacement cycle.
- All WAN routers and firewalls have been replaced to accommodate the increase bandwidth.
- Internet Safety was added to the school curriculum.
- Online web application was developed and deployed that allowed teachers at Hugh Mercer, Lafayette, and Walker-Grant to submit their lunch request online

- An online web application was developed and deployed so future applicants can submit their applications online.
- An online web application was developed and deployed which allows faculty and staff to register for professional development activities and also allow the division to maintain individual's professional development activities.
- Email Archiving was implemented in the Fall of 2006
- Spam Filtering was implemented in the Fall of 2004

TECHNOLOGY NEEDS ASSESSMENT

Fredericksburg utilizes the SWOT (Strengths, Weaknesses, Opportunities, and Threats) methodology to assess its instructional and administrative technology. The Director of Technology provides a variety of information to the Technology Advisory Committee (TAC) during monthly TAC meetings. The Committee is challenged to identify the division's strengths and weaknesses using the State Technology Plan as a framework. In addition, the Director provides the committee with information regarding future instructional and educational technologies and challenges the committee to investigate and provide feedback regarding current opportunities, which should be piloted. In addition, members of the Technology Committee looked at possible threats (problems) which could prevent future opportunities from flourishing or weaken our current strengths. The Director utilized the feedback from the Committee to formulate and revise this Technology Plan.

The division utilized *Taking a Good Look at Instructional Technology* (TAGLIT) which is a set of assessments and reports designed to help school personnel understand the current status of technology use in their schools. TAGLIT includes surveys for school technology leaders and teachers. Between September and November 2002, the school division working with VITAL completed the TAGLIT assessment. Information obtained from this assessment was used to assist the Director in developing this Technology Plan.

- **School Technology Leaders:** The Technology Director worked with the school administrators and teachers to explain the purpose and intent of the TAGLIT survey. Time was provided for the administrators to complete the administrators' survey as well as for the teachers to complete the teachers' survey. The principals' report and the teachers' summary proved to be similar.
- **Teachers:** Ninety-seven percent of the teachers and all of the administrators completed the on-line survey with both honest and candid answers. The answers to the open-ended questions reflected extensive thought and consideration of their needs and concerns as well as the needs and concerns of the students.

The division will utilize TAGLIT once again during the 2007-2008 school year. Data obtained will be compared to determine the direction Technology in Fredericksburg should go. Results from the comparison will be used to establish new programs and opportunities.

The division also utilized Levels of Technology Implementation (LoTi) which was developed in 1994 by Dr. Christopher Moersch. The Levels of Technology Implementation (LoTi) scale is an effort to accurately measure authentic classroom technology use. This scale focuses on the use of technology as an interactive learning medium because this particular component has the greatest and lasting impact on classroom pedagogy and is the most difficult to implement and assess. During the Spring of 2004 each school's faculty completed the LOTI online assessment which was financially provided for by the North Tier Partnership Ed Tech Grant of which we are the Fiscal Agent. Results indicated that of the individuals participating in the assessment, over 80% of the instructional staff, the majority of individuals placed about midway on the continuum at level 2 or 3. In order to increase the level of integration LOTI recommends the following strategies to facilitate moving our faculty to higher levels of technology integration:

- Technology Boot Camps (provided during the Summer Institutes)
- Mentoring Program (Provided by the ITI's throughout the year)
- Technology Brush-up Sessions (Technology Workshops offered during teachers planning periods)
- Application Training (Summer Institutes, Technology Workshops)
- Performance-Based Assessment and Electronic Portfolios (North Tier Partnership TieIn activities such as PBS online courses, Ed Tech OnLine (ETOL) courses and online courses provided by Troy State University).
- Performance-Based Assessment and the Internet (North Tier Partnership TieIn activities such as; PBS online courses, ETOL courses and online courses provided by Troy State University).
- Modeling of Complex Thinking Skills and Tool-Based Application (North Tier Partnership TieIn activities such as; PBS online courses, ETOL courses, and online courses provided by Troy State University).
- Infusing Existing Lesson Plans with Technology (Technology Workshops, Summer Institutes and North Tier Partnership TieIn activities)
- Developing Research-Based Projects utilizing the Internet (Technology Workshops, Summer Institutes, and North Tier Partnership TieIn activities)

During the Fall of 2007 the division will repeat the administration of the LOTI online assessment. Results from the 2004 administration and this administration will be compared and analyzed to determine growth and direction.

Technology Planning

Results from SWOT, LOTI, and TAGLIT as well as formal and informal comments to the Technology Committee indicate that most teachers feel that the division Technology Plan is a good one and is on the right track. Teachers would like to have more input into the division technology plan so that they can feel they have some ownership as opposed to having it forced upon them. A copy of this Six-Year Technology Plan was sent to each of the division's principals for filing at their school site. In addition, it was posted on the division website at <http://www.cityschools.com/technology>, presented and discussed to the school board and discussed with the Assistant Superintendent and the lead teacher committee.

Curriculum Integration

Results from SWOT, TAGLIT, and LoTi as well as formal and informal comments to the Technology Committee indicate that teachers still feel the greatest need is to learn how to integrate technology into the curriculum. Teachers feel the need to be comfortable with the technology before they begin integrating. Since the publication of this plan an additional full time ITI has been hired to provide an integration specialist at the elementary and secondary levels for our division. The ITI position needs to be expanded so each school has its own ITI. This would enable effective and seamless integration of technology into the total curriculum. This position would assist the technology department by conducting professional development evaluation and curriculum integration assistance for instructional staff.

With increased technology at every school most employees feel the need for a full time technologist in their building. This technologist will assist with troubleshooting computer problems and onsite help desk support. This position would also assist the technology department with first line troubleshooting, and provide technical support to administrative systems and personnel. Currently, Walker-Grant is the only school with a fulltime Technologists on staff. All other schools and sites have part-time technologist who provide support and assistance 2 hours a day..

Educational Applications

Software applications have been standardized and where possible are server based for ease of training, technical support and procurement. Currently we have the following software applications on every desktop computer in the city.

- Desktop – MS Office XP pro, Office XP 2003 with FrontPage 2003 (MS School Agreement), Office XP with FrontPage 2003 for Mac WGMS (MS School Agreement), Follett Circulation Plus, SOL To GO, Adobe Reader 7.0, Symantec Anti Virus, DeepFreeze Enterprise.
- Web Applications - Gale Group, Grolier On-line, SIRS Knowledge Source, FinditVA, United Streaming, Teaching Made Easier (HMES, WGMS), Reading A – Z (HMES & LUES) Cisco Network Academy, Enchanted Learning, and Kuder Career Assessment
- Network Applications - Follett, Choices 2004 (JMHS), Career Futures 2004 (WGMS), Inspiration, Kidspiration, Timeliner, Mapmaker, Type to Learn

Administrative Applications

- Chancery School Management System SMS
- New Year Tech Inventory TrackIt Inventory System
- Omni Form
- Online Job Applications
- Online Professional Development Registration & Tracking System
- SOL Tracker
- Reports Online and Test For Higher Standards
- Online Trouble Ticket
- Online Scholarship Database
- Online Lunch Count System

Continuous evaluation of these products needs to occur on regular basis for ease of use, cost, and educational value.

Professional Development

Professional development in the past has concentrated on basic computer skill acquisition. Now that our teachers have sufficient hardware in the classroom, a program that emphasizes both basic skills, for those professionals who still need them, and specific integration strategies, lesson plans and subject level practices needs to be continued. Concentration on technology integration is needed and a professional development plan must be created for continued growth. Teachers need to learn how to effectively use a 3-computer classroom, wireless labs, multi computer labs, Active Boards and Personal Response Systems. A program of professional development consisting of three phases needs to be continued to meet NCLB requirements. Delivery of these professional development activities with focus on Technology Integration is overseen by the Instructional Technology Integrators (ITI's). The three phases consisting of instruction in technology integration, implementation of the technology integrated lesson, and evaluation/follow-up activities. An online method of tracking the professional development of each staff member has been developed by the Technology Department and is maintained by the Director of Curriculum and Assessment as required for NCLB. A system to insure teachers are integrating technology into their curriculum should be designed and implemented. One such system could easily be implemented during the 2007-2008 school year. This system would require every teacher to design, develop, and utilize one lesson plan which clearly demonstrates current integration concepts. To insure all teachers integrate technology it is recommended that their lesson plan should become part of the teachers' evaluation.

Hardware/Software

Additional computer hardware and furniture are required, for completion of the state recommended goal of five (5) computers in every classroom needs to be purchased. Our middle school and elementary school are slipping behind the high school and upper elementary school in regards to classroom technology. Both Hugh Mercer and Walker-Grant are lacking data projectors and multimedia sound systems in their classrooms. A solution to this short fall is not as simple as purchasing data projectors for each room. Because of the age of these buildings (pre-computers) the solution will required increase electrical supply in the buildings and rooms.

Great progress has occurred in the software realm during the previous plan. Timeliner, Mapmakers Tool Kit, Inspiration, Kidspiration, Scholastic Reader and Scholastic Reader Inventory, Exam View Pro, and other software have been obtained for student and staff use. During the 2006-2007 school year we added FastForward to this list. Online instructional programs have been provided such as General Educational Development (GED) preparation by Keystone Learning, HP Net Essentials and the Cisco CCNA program. In addition, our CTE program at Walker-Grant utilizes 20 training CAI modules, which are server based and provide instruction, assessment, feedback regarding competency obtainment and records the results of student learning in an electronic grade book. Even with these accomplishments, software is still a great concern for most teachers and the division. The lack of specialized software available for teachers is a high point of anxiety, especially at the elementary levels. Because of purchasing the Microsoft School Software Agreement, all of the computers in the division have the most up-to-date office productivity software and operating system. This opportunity allowed us to standardize training, installations and streamlined the deployment of productivity software. However, quality subject specific instructional software is lacking at all grade levels. Software that was previously on computers is no longer useable or available for the classroom because of the recent update from Windows 98 to Windows XP. During the 2007-2008 school year software currently running on our machines which was designed for the Windows 2000 and Windows XP operating system will need to be evaluated for compatibility with Windows Vista prior to the deployment of the Microsoft Vista operating system. There is still a concern regarding valid software licenses and the staff lack of understanding of current copyright laws. This confusion indicates that the school division needs to educate teachers, staff, students, and the community regarding the legal issues around copyright and software licenses. Although we established a policy for software procurement, we still need to provide more attention to the selection of instructional software and how it can best be used in a classroom to improve instruction. Fredericksburg City Schools has always been generous with its funding for software and adequate monies are available for purchasing instructional software and subscriptions. The Director of Technology suggests that members of the lead teachers committee join the technology committee and establish a subcommittee responsible for recommending the purchase of content specific software. The current inventory of existing software at each school needs to be updated and reviewed frequently during the school year. This inventory

should be posted on our website so parents and teachers can view it. It was also suggested by staff that professional reviews of software contained within our inventory be found and hyperlinked to the actual inventory so teachers and administrators can make informed software purchasing decisions.

Infrastructure

During the previous two years, Fredericksburg City Schools invested a great deal of resources in upgrading the network infrastructure. Currently the WAN capabilities are inadequate to meet the needs of the present number of computers and users on the network. Continuous evaluation of the WAN utilization needs to occur on a regular basis to insure that the infrastructure is capable of supporting the demands placed on it by the division. The Technology Committee recommends that we utilize individual logins for all faculty, staff, and students in grades 3-12 and generic logins for grades K – 2.

Over the last two years Fredericksburg City Schools has built two new schools. One of the schools was an upper elementary school which is located on the current Walker-Grant tract and opened in the Fall of 2005. The other school was a replacement for James Monroe High School which opened in the Fall of 2006. It is located on the current James Monroe tract of land which required the existing building to be demolished. The new schools infrastructure was a challenge for the Technology Department especially with the old James Monroe building being the Hub to the WAN and access to the Internet for all buildings in the division. Each new school's network architecture mirrored the existing schools in the division. Each site has high speed 100 Mbps CAT 6 copper connection from the workstation to the switches and copper gigabit connections from the switches to the servers. All wiring closets have a gigabit fiber backbone. Layer 3 connectivity for the Upper Elementary School will be a leased T1 WAN connection with 1.54 Mbps capacity. James Monroe High School will not continue to utilize the existing bonded T1x2 connection with a capacity of 3 Mbps to the Internet cloud. Beginning the Fall of 2007-2008 the division will utilize a DS3 communication circuit. 25Mbps of this DS3 will be used for Internet traffic. Each building will be connected to James Monroe via bonded T1's for a total capacity of 3Mbps. Every classroom in the new schools has an instructional computer capable of delivering DVD and streaming video and at a minimum two (2) student computers. Each classroom will have a ceiling mounted SVGA projector and speaker system connected to the instructor's computer. In addition to the classroom computers, the new schools will have wireless devices in the media centers and one fully equipped computer lab per grade level. Each lab consist of twenty-five (25) desktop computers, an Action Board with PRS, a ceiling mounted SVGA data projector, whiteboards, digital scanners and imaging devices.

There is a need for increased Capitol Improvement Funding (CIP) to insure that our students have the latest informational technology which will prepared them with 21st Century Skills for both college and the workplace. Currently all computers within the division are on a four year replacement cycle. Currently our funding for hardware and equipment does not cover the cost of replacing 25% of our machines, including backup systems, servers, switches and routers.

With over one thousand three hundred (1,400) computers in the school system a need exists for an additional technical support. For quality technical support to be delivered one full time technologist is required at each school. Currently the division contracted with Businets, Inc., a local information technology company for part-time support technologist at each site for computer diagnostics and repair. Each school also has a part-time (2 hours a day) on-site technologist to assist in the computer diagnostics and repair. We will continue to utilize student interns whenever possible. The student interns are selected via application and resume from our CTE department's Cisco and CST programs. All interns must be an 11th or 12th grade student in good academic standing and demonstrate a desire to work in the IT industry. Businets, Inc., a local information technology company and member of our Technology Advisory Committee, hires the interns. The internship begins in the summer of the students' junior year and lasts 2 years.

SPAM still drastically affected our e-mail system efficiency. Our division receives 69K SPAM e-mails a day. Over 80 % of our e-mail is SPAM. To help fight the incoming SPAM, Fredericksburg installed a SPAM filter (Mail Essentials). This system requires constant monitoring to eliminate false positives and to retrieve legitimate e-mail that has been blocked. Currently the computer system running Mail Essentials 12.0 for exchange is over burdened. It should be noted that no entity that utilizes e-mail and has a presence on the Internet could do without a SPAM Filter.

Network administration, security, and intrusion prevention must become a more important issue in the daily operation of technology use at all levels. The Director of Technology suggests that the division hire a network administrator or at a minimum contract out for network administration services. Over the last three (3) years the division experienced a rapid

increase of network demands which resulted in additional computer and user accounts being established in order to meet the demands. The division currently needs to manage over twenty (40) servers, one thousand three hundred (1,300) computer security accounts, two thousand (2,000) plus user accounts and user profiles and over three hundred (300) + e-mail accounts as well as security permissions for all employee shares on each school's file server.

Data Collection and Data Analysis

NCLB requirements continue to place a burden on the technology staff and other staff members, preparing reports, verified credits for high school graduates and data collections via the Student Information System (Pearson Student Management System). The workload of the Data Analyst position has nearly doubled. This position was responsible for completing technology orders, completing purchase orders, maintaining accurate accounts, maintaining (4) four SMS school databases and a central office module, creating reports and templates for school personnel, troubleshooting user computer problems, help desk for SMS, SMS attendance, and SMS grades, as well as setting fields for NCLB data collections and insuring accurate data input and submitting all required NCLB reports. A financial specialist/secretary for Technology has been hired to provide much needed help to the Data Analyst. Restructuring of duties allow the Data Analyst to deal solely with SQL data, record management, SRC reporting, and Pearson SMS management. The addition of the financial specialist/secretary allowed the responsibility of completing technology orders, completing purchase orders, maintaining accurate accounts to be removed from the Data Analyst duties. Data Currently the division has a full-time data technician, who is responsible for maintaining the technology inventory, maintaining student performance databases such as SOL Tracker and Reports online and completing the Crime and Violence report. In addition, both the Data Analyst and the Data Technician work together to upload numerous data files to EIMS, SELP, ROS, SRC, ARDT and other systems upon request. Funding for information technology needs to be assessed on a regular basis as the division grows and the need for electronic information increases.

Accountability

In order to meet the requirements of the NCLB legislation, several new programs have been implemented for data collection. An online database program has been developed and implemented to track staff professional development. Beginning in the Fall of 2007-2008 our application process will be online. Additionally, SOL Tracker and Reports Online will continue to be utilized to assess student performance and identify students for remediation. Additional programs are being developed that will require staffing, data collection methods and evaluation procedures continue to be developed to determine the effectiveness of the new programs. Failure to comply with the new requirements will result in lost funding from the Federal Government grants. This plan will be reviewed at each of the Technology Committee meetings. Completion of goals and strategies will be noted and posted on the technology website and in monthly school board reports.

E-Rate

E-Ratable services for the past two (2) years have consistently been at the 64-68 percent level. Discounts have been requested for administrative telephone services and division internet services. Beginning year 7, many services that were not eligible have now been made available. We will consider requesting pre-discount or reimbursement for wireless phones, and pagers during this the span of this Technology Plan.

- High Speed Internet bandwidth - During the 20075-2008 SY we upgraded to a Leased line Bonded T1x2 at the DMark. Due to high demand for instruction and administrative task we need to need to increase this service to provide eSOL's, internet research, video, video streaming, and web services to students, staff, and administration. These services will be requested annually for e-rate purposes. The Division has solicited solution RFP's for both Internet and WAN connectivity. The Division will continually monitor Internet and WAN utilization and provide the necessary bandwidth for instruction, administration, and assessment. During the Spring of 2006-2007 the

division accepted a proposal by Verizon Business/VITA for a DS3 connection for Internet service. This will increase our Internet bandwidth a little over 8 times. The need still exist for a redundant path to the Internet. This path will be required in the event our existing DS3 connection fails.

- Wide Area Network - each site within the division has interconnectivity provided by a T1 connection at each site. During the Spring of 2007-2008 this connectivity will be increased to 3Mbs bonded T1 circuits. This will allow students, staff and administration the ability to communicate via e-mails, video, video streaming and use the Pearson student information system (SMS). The connections at each site along with the Bonded T1x3 at the DMark provide the WAN capabilities that are needed to meet division, state and federal instructional goals.
- Local telephone service at all division locations - these services are requested for communication between division sites, emergency services, and parent communication. A Centrex system is used to make communications easier and network all sites for communication purposes. The school division has a total of 94 local lines and 54 long distance, 101 classrooms are equipped with integrated digital phones which provide local and long distance service, PBA, intercom and emergency messaging. This will need to be increased as the new schools are completed.
- Wireless Phone service - these phones are used for administrative, security, emergency, and during local phone blackout periods at each school site. Currently Fredericksburg City Schools utilize 10 wireless phones within the school system.
- Pager services - Pagers are currently used by Maintenance personnel and by the school Psychologists. This service is used to communicate to essential employees for an anytime - anywhere communication need. Currently, service is for 8 users.

**Fredericksburg City Schools
Technology Plan
Stakeholder Participation
2004-2010 Plan**

Check (√)	I for supplied information, C for provided substantive consultation, R for reviewed and critiqued the plan or sections of the plan or N for no involvement
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(Check more than one letter, if appropriate.)

GROUPS	I	C	R	N
Representatives of business/industry	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Interested community representatives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Representatives of special populations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Representatives of local community colleges	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Administrators	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Teachers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parents	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Students	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Describe how the required respective groups were involved in the development and implementation of your 2003-2009 plan.
The respective groups were invited to technology advisory committee meetings and collaboratively contributed to the plans development and review process the 2004 - 2010 plan.

Describe how the required respective groups were involved in the evaluation of your Technology program for 2004 - 2010.
Each group contributed input in regards to current technology and needs within the school division.

**Fredericksburg City Public Schools
Six-Year Technology Plan
STAKEHOLDER INVOLVEMENT
2004-2010**

Describe how parents, students, teachers, representatives of business and industry, representatives of local colleges, representatives of special populations, and other interested individuals are involved in the development, implementation, and evaluation of Technology Program, and how such individuals and entities are effectively informed about, and assisted in understanding the requirements The states technology plan.

The local technology advisory committee is involved in the development, implementation, and evaluation of the division Technology Plan that is posted at <http://www.cityschools.com/technology/TechPlan.pdf>. The advisory committee, which meets regularly, is a group of persons representing business, industry, public agencies, education, and the community for providing counsel, direction, and assistance to Technology Planning. The local Technology Advisory council may be used for this purpose if the membership is expanded to include membership from the following groups: parents, students, teachers, representatives of business and industry, labor organizations, representatives of local community colleges, representatives of special populations, and other interested individuals. Other persons may be asked to participate at the discretion of the School Division.

List below those persons on the Technology Advisory committee who have been appointed to serve in the development, implementation, and evaluation of information technology (attach additional pages, if necessary).

Group ID Letter:	<u>P</u> for parents <u>S</u> for students <u>T</u> for teachers <u>A</u> for school administrators <u>D</u> for division administrators <u>DI</u> Instructional Technology Integrator	<u>B&I</u> for representatives of business and industry <u>CC</u> for representatives of local community colleges <u>SP</u> for representatives of special populations <u>O</u> for other interested individuals <u>TS</u> for school based technology specialist <u>DE</u> Data Entry	
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Goal 1.01 Goal 1.02 NAME/TITLE OR POSITION	NAME OF COMPANY/BUSINESS/ORGANIZATION	GROUP ID LETTER
1. Baker, David	FCPS Central Office – Director of Finance	D
2. Warren Kelchner	FCPS-JMHS - Technologist	TS
3. Catlett, Marci	Central Office – Assistant Superintendent	D
4. Dodd, Cynthia	FCPS Central Office	TS
5. Downing, Donna	HMES - Technologist	TS
6. Martinelli, Robert	BUSINETS INC.	B&I
7. Keffer, Dennis	CO – Director of Curriculum and Assessment	A
8. Ladmiraault, Ralph	CO – Director of Student Services	A
9. Magin, Tracy	WGMS – Library	T
10. TBD	PARENT	P
11. Robinson, Dinah	JMHS – CTE Teacher	T
12. Schlang, Andrea	CO – Finance Specialist/Secretary	O
13. Stone, Gail	CO - Director of Administration & Instruction	A
14. Tankersley, Marjorie	HMES - Principal	A
15. Rita Cavataio	JMHS – Assistant Principal	A
16. Robert Buongiorno	BUSINETS INC.	B&I
17. Mary Smith	Elementary School Instructional Technology Integrator	DI
18. Tracy Marino	Middle & Secondary School Instructional Technology Integrator	DI
19. Woodward, Norma	CO - – Data Analyst	C

20. Young, Robert	CO - - Director of Technology	D
21. TBD	Senior Class President	S
22. Daryl Chesley	JMHS - Principal	A
23. Judy Filmeck	CO - Data Technician	DE
24. Wendy Picard	WGMS - Technologist	T
25. Danville Fourie	JMHS - Library	T
26. Kathy Weller	HMES- Lead Teacher	T
27. John Russ	LUES - Principal	A
28. Harry Thomas	WGMS - Principal	A

Fredericksburg City Public Schools
Six-Year Technology Plan
2004-2010
STAKEHOLDER INVOLVEMENT

The members of the Technology Advisory Committee and all stakeholders are informed about the states technology plan and the division's plan via e-mail, web postings, and monthly meetings.

The committee has been involved in the following tasks during the 2004-2007 school year:

- Investigating upgrading Scholastic Reader the division's reading program at both the middle and elementary schools
- Identifying and selecting software applications for each school
- Discussions regarding Internet Safety and current state legislation
- Revision of the Division's AUP resulting from state legislation which requires the integration of Internet Safety into the division's curriculums' at each school
- Discussions regarding network policies
- Researching and selecting wireless devices for the middle and high schools
- Change the 3 year hardware replacement policy implemented in the SY 2000-01 by increasing the life span of multimedia computers and servers to 4 years
- Investigate the purchase of multimedia computers with TV and DVD capabilities, data projectors and ceiling mounts for each school
- Provided selection input in regards to e-mail filtering software and Web Content Filtering
- Provided input in the selection of several web based applications such as BoxerMath, Teaching Made Easier, ROS, FastForward, and Scholastic Reader, for the division
- Supported the decision to deploy network printers to departments and/or grade level users
- Supported upgrading data connections to increase capacity.

**Fredericksburg City Schools
Technology Plan
Technology Goals & Targets
2004-2010**

INTERGRATION OF TECHNOLOGY

"Integration refers to the appropriate use of specific technologies as highly effective tools in facilitating learning across all levels of cognitive inquiry and development. Fredericksburg City Schools is committed to providing equal access to technology; establishing partnerships that promote the integration of technology into the overall curriculum and improving collaborations among administrators, teachers, and students"

GOAL I • Improve teaching and learning through the appropriate use of technology.						
Target	Strategies	Responsibility	Implementation Date	Assessments	Funding	Estimate Cost
1. Administrators have a vision and plan for technology use and integration.	1. The Technology Committee in collaboration with the lead teachers' committee will utilize LoTi and existing curriculum Scopes and Sequences as a model to develop a comprehensive integration plan which will identify integration activities; define the method used to monitor integration activities of individual teachers, develop a formal evaluation component for technology integration and identify who will be responsible for the evaluation process.	Division ITIs	2005	Published Technology Scope and Sequence for each grade level will be posted to our website.	Local Funding	

	<p>2. The Technology Department will provide opportunities for school administrators and central office administrators to attend:</p> <ul style="list-style-type: none"> a. VSTE Conference b. DOE Technology Leadership Conference c. Any other regional, state or national conference relating to Technology Integration 	<p>Director of Technology</p> <p>Assistant Superintendent</p>	Duration of Plan	Number of attendees will increase yearly	Local Funding	\$6000.00 (approx. \$1000.00 per attendee)
<p>2. School leaders provide support for integration of technology into instruction.</p>	<p>1. Fredericksburg City Schools will continue to support training for technology integration by providing:</p> <ul style="list-style-type: none"> a. Necessary time for teachers to receive training b. Professional development leave c. Hardware & software training d. Substitute teachers when needed e. Financial assistance if needed 	<p>Director of Technology</p> <p>Assistant Superintendent</p> <p>Division ITIs</p>	Duration of Plan	<p>Number of requests for substitutes, and Professional Development leave related to technology will show significant growth.</p> <p>Rosters for Tech Workshops, Conferences and Summer Institutes</p>	Local Funding	

	<p>f. A Summer Technology Institute</p>					
	<p>2. Fredericksburg City Schools will maintain its partnership with the North Tier Partnership and utilize the instructional opportunities it provides such as:</p> <ul style="list-style-type: none"> a. Delivery of distance education courses via PBS, Educational Development Center b. North Tier Annual Technology Symposium 			<p>Attendance sheets and North Tier MyLearning Plan certificates issued after courses are completed.</p>	<p>North Tier Grant</p>	<p>Many Professional Development classes are free through the North Tier Partnership</p>

	3. Various staff development opportunities					
3. Leaders can effectively evaluate instructional uses of educational technology.	1. The ITIs will provide a series of training workshops for lead teachers and administrators. These workshops will train them in the process of evaluating the results from annual LoTi and VITAL assessments as well as individual classroom teacher surveys.	Director of Technology Division ITIs	2008	Certificate of completion	Local Funding	
4. Technology integration partnerships are established among educational technology stakeholders.	1. The Technology Committee will have representatives from the Lead Teachers Committee and representatives of the Curriculum and Instruction Department	Director of Technology Director of Curriculum & Instruction	2007	Minutes of Technology Committee	Local Funding	
5. Teachers effectively integrate instructional technology.	1. Fredericksburg City Schools will design, develop and deliver via the web quality in-service programs	Director of Technology Division ITIs	2008	Artifacts posted online	Local Funding	

	regarding technology integration as well as challenging academic courses for parents, teachers and students within the Fredericksburg City Public Schools system					
	2. Fredericksburg City Schools will purchase, configure and manage a Moodle or equivalent type of server to provide teacher created online courses to Fredericksburg students	Director of Technology Division ITI's	2007 - 2008	Hosting of teachers created online courses	Local Funding	\$8000.00
	3. The Online LoTi Assessment will be administered yearly by the ITIs. Data results from the LoTi assessment will be purchased and analyzed in conjunction with student core SOL performance and local SOL's for Technology to determine integration plans for the future.	ITI	Duration of Plan	Individual, School and Division wide LoTi Reports	Local Funding	\$1600.00
	4. Online VITAL surveys will be administered to teachers, administrators and 8 th grade students. Data from previous surveys will be analyzed by the ITI's to determine level of technology integration and technical skills	Division ITI's	2007-2008	Analysis of survey results posted online	Local Funding	No Additional Charge

<p>6. Teachers collaborate to improve and enrich instruction using technology.</p>	<p>1. Fredericksburg will provide opportunities for two (2) teachers from each school site to attend the annual VSTE conference and the DOE Technology Leadership Conference.</p>	<p>Director of Instruction & Curriculum Director of Technology</p>	<p>Duration of this plan</p>	<p>Teachers will be responsible to teach one course during the Lead Teacher Meetings or other scheduled PD in-services. Subject will focus on what they learned during the conference</p>	<p>The number of postings and the # of lesson plans posted to the site.</p>	
<p>2. Fredericksburg will provide teachers with the resources required to attend the locally developed Lead Teacher meetings, school faculty meetings and the North Tier Partnership TieIn activities</p>	<p>3. Establish and maintain discussion web for teachers to share integration experiences and store integrated lesson plans</p>					
<p>7. Teachers collaborate to improve and enrich instruction using technology.</p>	<p>1. Fredericksburg City Schools will purchase, configure and utilize a SharePoint style discussion web with links to an online database which will contain high quality technology rich lesson plans. This discussion web will be a place for teachers to share integration experiences and store integrated lesson plans.</p>					

8. Teachers use technology-based intervention strategies to improve student achievement.	1. The ITIs will model intervention strategies to faculty and administrators during Lead Teacher and faculty meetings	Division ITIs Principals	Duration of Plan	Participant's evaluation of the presenter	Local Funds	
9. Teachers understand and model the acceptable use of technology in teaching and learning.	1. Fredericksburg will send (4) four teachers to Troy State University Masters Degree program in Instructional Technology. Upon completion of the program the teachers will be required to develop and deliver a class which illustrates high quality technology integration.	Director of Technology Division ITIs Principals	Complete	Roster from Troy State		
	2. Fredericksburg will establish an Instructional Integration Team consisting of four Full Time (ITs) Instructional Technologists. One (1) IT will be assigned to each school site. The will work in collaboration with the Division ITIs to, model high quality integration practices to teachers. The will also work with the Technology Department to troubleshoot hardware and software issues and provide help desk services. 3. Fredericksburg will provide resources necessary for the ITI team to perform a follow-		2008 – 2009	Each school will have a FT IT	Local Funding	\$25,000 salary per IT
			2008-2009			

	up survey with the faculty to determine if appropriate practices were assimilated into the curriculum.					
10. Students routinely use technology in a variety of learning activities across the curriculum.	1. Teachers will continue to utilize the computer labs at each location with their students for such activities as: research, reporting, analyzing, and other SOL related instructional activities	Principal School Technology Support Personnel	Duration of Plan	Sign in sheets from labs Wireless Sign out sheets ITI evaluations	Local Funding	
11. Students will have digital and information literacy skills.	1. The Technology Committee and the Lead Teachers Committee will design, develop, and administer a local Technology Scope and Sequence for each grade level to insure that all students have the skills required for a successful educational and life experience.	Director of Technology Director of Instruction and Curriculum	2005	A Published Technology Scope and Sequence for each Grade Level will be posted to our website.	Local Funding	
12. Student learning and achievement will be enhanced through the effective integration of technology.	1. Continue to use Sol Tracker to analyze student SOL performance. 2. Continue to utilize (EIMS) Educational Information Management System 3. Continue to use Test for	Director of Technology Division ITIs Director of Instruction and Curriculum Coordinator of Info. Tech.	Duration of Plan	Student SOL scores will continue to show growth	Local Funding State Provided Local	\$2,500.00

	Higher Standards questions and Reports Online System				Funding	\$7,000.00
13. Student learning and achievement will be enhanced through the use of advanced technologies.	<ol style="list-style-type: none"> The Technology Committee will continue to assess current technologies and explore new and emerging technologies as well as methods to incorporate these new technologies into the overall curriculum. Fredericksburg will continue to provide web based video providers 	Director of Technology Division ITIs	Duration of Plan	<p>Minutes from technology meetings</p> <p>Usage logs from web services</p>	Local Funding	\$5,000.00
14. Computer/Technology Standards of Learning (SOL) are fully integrated across all curriculum areas.	<ol style="list-style-type: none"> The Lead Teachers committee will design, develop, and administer online technology SOL assessments for each grade level with emphasis being on grades 3, 5, and 11. 	Division ITIs	2007 - 2008	Artifact posted online	Local Funding	
	<ol style="list-style-type: none"> Establish a collaborative partnership with the Office of Curriculum and Instruction to analyze Local SOL technology data to determine strengths and weaknesses of instruction. Use the resulting data to improve technology instruction for all students. 	Director of Technology Division ITIs Director of Instruction and Curriculum	2006	Existence of a committee with the purpose of analyzing student performance and Technology employed	Local Funding	

15. Internet Safety Incorporated into division's overall curriculum	1. Establish a collaborative partnership with the Office of Curriculum and Instruction to develop and implement a system to deliver Internet Safety Instruction to all students, faculty, administration and parents per state legislation.	Director of Technology Division ITIs Director of Instruction and Curriculum	2007-2008	Certificate of completion of approved online service. Teachers lesson plans incorporate Internet safety	Local Funding	Local Funding
	2. Provide in-services and workshops for faculty and administration to complete ISafe mentorship training.	Director of Technology Division ITIs Director of Instruction and Curriculum	2006 - 2007	Certificate of completion of approved online service.	Local Funding	Local Funding
	3. Utilize Moodle or SharePoint server to deliver ISafe training to citizens, parents and students	Director of Technology Division ITIs Director of Instruction and Curriculum	2007 - 2008		Local Funding	\$8000.00
16. Instructional personnel will meet Technology Standards for Instructional Personnel (TSIP).	1. The division will provide training classes, online tutorials and workshops during the school year which will address the TSIPs. In addition to TSIPs these activities will incorporate Technology Integration and Internet Safety across the curriculum for all subjects and grade levels. These activities will also be offered to the administration, faculty, and staff during the Summer Technology	Director of Technology Director of Personnel Division ITI's	2005	100 % of instructional personnel will meet TSIP's by May 2005	Local Funding	

	Institute and throughout the school year.					
17. Instructional personnel will meet Technology Standards for Internet Safety	1. The division will provide training classes, online tutorials and workshops during the school year which will address the Internet Safety. These activities will incorporate both Technology Integration and Internet Safety across the curriculum for all subjects and grade levels. These activities will also be offered to the faculty , administration, staff during the Summer Technology Institute and throughout the school year via our website	Director of Technology Director of Personnel Division ITI's	2007 - 2008		Local Funding	
GOAL II • Improve statewide equity in the implementation of technology-enhanced teaching and learning.						
1. Educators and students have access to technology to support instructional goals.	1. Supervised computer labs at each site will be accessible before school opening and following the closing school closing.	Principals Director of Technology Technology Support Personnel	Duration of Plan	Usage sheets at each school		
	2. All school administrators and classroom teachers will have a teacher workstation provided to them. This workstation will be internet accessible and have the latest MS OS, the latest Microsoft Office Suite, and	Director of Technology	Duration of Plan	Technology Inventory	Local Funds	TCO per teacher \$1700.00

	the most current version of web security and anti virus programs installed as well as school, grade, and subjects' specific software required in their daily work.					
	<p>3. Beginning with the New Upper Elementary School and replacement high school scheduled for opening in 2006 all classrooms in new buildings will have the following:</p> <ul style="list-style-type: none"> a. (1) One teacher/admin multimedia computer w/TV card and DVD RW drives and HS internet and LAN connections b. (1) Ceiling mounted SVGA Projector connected to the Teacher/Admin Computer c. (2) Two student instructional computers with HS internet and LAN connections d. One computer lab per grade level consisting of 30 computers, one action board with PRS and Tablet, one ceiling mounted SVGA 	Director of Technology Director of New Construction	May 2005 Complete	Technology Inventory	Local Funds	<p>TCO \$2,200.00 each</p> <p>\$1000.00 each</p> <p>\$1700.00 each</p> <p>TCO \$60,200.00 per lab</p>

	projector and one Personal Response System					
	<p>4. Where required upgrade classrooms at Walker-Grant Middle School and Hugh Mercer Elementary School to equal facilities and equipment available in Lafayette Upper Elementary School and the new James Monroe High School. Over the next 4 years all classrooms in the division will have the following:</p> <p>e. (1) One teacher/admin multimedia computer w/TV card and DVD RW drives and HS internet and LAN connections</p> <p>f. (1) Ceiling mounted SVGA Projector connected to the Teacher/Admin Computer</p> <p>g. (5) Five student instructional computers with HS internet and LAN connections</p> <p>h. One computer lab per grade level consisting of 30 computers, one action board with</p>	Director of Technology Director of New Construction	2007 - 2010	Technology Inventory	Local Funds	<p>TCO \$2,200.00 each</p> <p>\$1000.00 each</p> <p>\$1700.00 each</p> <p>TCO \$60,200.00 per lab</p>

	PRS and Tablet, one ceiling mounted SVGA projector and one Personal Response System					
	5. A committee of classroom teachers, lead teachers, school administrators and tech support representatives will research and recommend replacement devices for the now antiquated and non functional Emates which are utilized in the home loan program at Walker-Grant	Technology Director Division ITIs Assistant Superintendent Finance Director of Technology	2005 Program Terminated in lieu of additional computers in classrooms	Minutes from committee's meetings and recommendation with reasons for selection	Local Funds	
			2006 Initiative deemed cost prohibitive Program Terminated in lieu of additional computers in classrooms	Minutes from committee's meetings and recommendation with reasons for selection	Local Funds	
2. Appropriate technology-based instructional strategies are used for students with unique needs.	1. The Technology Department will continue to work with the Office of Student Services and the Special Education Department at each school by providing assistance with the selection and purchase of assistive devices for special needs students.	Director of Student Services Director of Technology	Duration of Plan	Technology usage reports from SPED departments from each school	Local Funds	

PROFESSIONAL DEVELOPMENT & SUPPORT PROGRAMS

“Professional development covers both pre-service and in-service training with a specific focus on the Virginia Technology Standards for Instructional Personnel and the state technology standards for students.”

Target	Strategies	Responsibility	Implementation Date	Assessments	Estimated Cost
GOAL I: Establish partnerships for identifying and delivering effective technology training to assist educators as they help students achieve high academic standards.					
1. Educator training programs reflect pre-service course work and experiences that include effective approaches to integrating technology into K-12 education.	1. Instructional personnel will continue to participate in challenging in-service training provided by FCPS through the Technology Department	Director Administration & Instruction Technology Director Division ITIs	Annually for the duration of this plan	1. Records of attendance will be kept	No Additional Cost
2. A variety of classes, training, and resources pertaining to integrating technology effectively are available for staff development.	1. Pursue establishing a partnership with University of Mary Washington and continue our partnership with the North Tier partnership that would allow our staff and faculty to enroll in specially designed classes that facilitate technology integration.			2. Records of Enrollment will be kept	TBD
3. Technology-related staff development offered by various entities is provided in a variety of topics and delivery methods.	1. Continue providing challenging in-service training through the University of Mary Washington Technology Training Course for SPED personnel regarding the use of assistive devices.			3.	North Tier will cost approx. \$1000.00 per year beginning 2009.
4. Technology leadership activities are provided to K-12 educational technology stakeholders.	1. Continue to provide in-service training for all new teachers during pre-school week and during the school year.			4. Record of participation will be kept	No Additional Cost

Target	Strategies	Responsibility	Implementation Date	Assessments	Estimated Cost
GOAL II: Administer grant programs and financial assistance initiatives that support implementation of educational technology integration.					
1. Grant programs and alternative sources of funding that support educational technology are administered.	1. Fredericksburg will continue to serve as the Fiscal Agent for the North Tier Partnership Educational Technology Competitive Grant	Director of Technology	Annually	Grant applications and financial records will be kept in the Technology Department	
	2. Fredericksburg will continue to utilize VPSA funds to increase the number of networked multimedia computers in all locations.	Director of Technology			
	3. Fredericksburg will research and apply for additional federal, state and private grants	Director of Technology Division ITI's			
2. Teacher education institutions, businesses, organizations, and private entities become partners in the implementation of technology-related grants focusing on technology integration.	1. Fredericksburg will continue to use State Educational Technology Grant funds to provide professional development opportunities to the division's instructional personnel.	Director of Technology Division ITI's			

Target	Strategies	Responsibility	Implementation Date	Assessments	Estimated Cost
GOAL III Establish and maintain instructional technologists (including site-based technology resource teachers) in school divisions.					
1. Site-based instructional technologists are available to all schools. (The state requires one ITI and one Technologist per every 1000 students)	1. Hire 1 fulltime Instructional Technologists each year until all schools have at least one on site.	School Board Superintendent Director of Technology	2006 - 2010	Increase in the number of Instructional Technologist at each site	\$24,000.00 per Technologist
	2. Hire 1 fulltime Instructional Technology Integrator each year until all schools have at least one ITI on site.	School Board Superintendent Director of Technology	2005 - 2010	Increase in number of Instructional Technology Integrator at each site	\$50,000.00 per Instructional Technology Integrator
	3. Hire a Network Administrator or contract services which address daily security issues, SPAM, Virus threats, user account problems, and file share permissions on the divisions 20+ servers.	School Board Superintendent Director of Technology	2008 - 2010	A network administrator will be hired.	\$50,000.00
2. Staff development models and activities that are designed for site-based instructional technologists are available for all K-12 schools.	1. All activities and models will be posted on our web server, Moodle server and/or our SharePoint servers.		2009 - 2010		

CONNECTIVITY

"All school buildings and classrooms need appropriate cabling, telephone lines, outlets, wiring, and power receptacles to support the use of existing and future multi-media educational communication systems. Such systems include networking of voice, data, video, instructional television and voice communications to and from each classroom. Without the proper infrastructure, our school division and individual schools would not be able to access existing high speed wide area networks."

Target	Strategies	Responsibility	Implementation Date	Assessments	Estimated Cost
GOAL I: Ensure that all schools have access to integrated instructional and administrative services across interoperable high-speed networks.					
1. Every instructional and administrative area in each school has a sufficient number of network connections to support the high bandwidth requirements of current and future instructional and administrative applications.	1. Fredericksburg City Schools will continue to replace computers and network hardware on a 4-year cycle. One fourth of the division's 1300 computers will be upgraded or replaced yearly.	School Board Director of Technology	Duration of Plan	The division will not have any computer older than 4 years	\$390,000 .00 annually (325 x \$1200.00)
	2. Upgrade Original Walker Grant's 10 baseT LAN to mirror James Monroe's, Walker-Grant's, and Hugh Mercer's 100 Mbps baseT architecture. This includes the purchase of a new file server, 100 mbps LAN Switches and backup library	Director of Technology	Fall 2005		\$15,000
	3. Purchase additional network-ready multimedia microcomputers for all K-12 classrooms so (5) computers are present in each classroom. This includes classrooms at the alternative school located at Original Walker-Grant.	Director of Technology Technology Support Provider	Duration of Plan	Every classroom will have 5 networked computers w/ high speed internet access by 2010 (An additional 600 computers are needed division wide to meet the requirement)	\$120,000.00 annually for 100 additional computers.

Target	Strategies	Responsibility	Implementation Date	Assessments	Estimated Cost
GOAL I: (Cont.) Ensure that all schools have access to integrated instructional and administrative services across interoperable high-speed networks.					
	4. Purchase 1 additional wireless mobile computer lab w/ a network printer for the high school and middle school each year of this plan until each school has 200 total laptops. Students and faculty will utilize the wireless labs throughout the school year. During the eSOL test cycle they will be used to administer the eSOL to an entire grade level thereby reducing the demand on the computer labs at each school.	School Board Director of Technology	2008	The high school and middle school will have a total of 200 wireless laptops each.	\$60,000.00 per mobile lab per school per year (consisting of 20 wireless laptops, storage cart and network printer)
	5. Over the duration of two school years Fredericksburg City Schools will provide sufficient wireless mobile labs, wired labs with multimedia computers, instructional and productivity software, to allow each student in grades 6 - 12 access to the school network. Student in grades 6 – 12 will be issued their own network login and be provided with a home directory on the school’s file server to save their work.	School Board Director of Technology	2005-2006	students in grades 6 – 12 will have access to Multimedia computers, software and file shares	\$60,000.00 per grade level
	6. Continue to utilize and support DeepFreeze Enterprise desktop security software division wide	School Board Director of Finance Director of Technology	2005	Most current version installed at the start of each school year	\$2000.00
2. Each school division connects all school facilities through a wide area network with sufficient bandwidth to accommodate	1. Annual service cost of upgrading five point to point communication connections from 1.54 Mbps to 3 Mbps	School Board Director of Finance Director of Technology Support Contractor	2007 - 2008	Throughput and capacity will increase	\$60,000.00
	2. Purchase, configure and install hardware appliance which allow	School Board Director of Finance	2007 - 2008		\$12,000.00

instructional and administrative needs	management of bandwidth and layer 2 security	Director of Technology Support			
3. Each school's local area network has reliable high-speed access to the Internet capable of supporting instructional and administrative applications and initiatives	1. Annual service cost for upgrading current 3 Mbps bonded T1 connection located at James Monroe to a DS3 connection with 25 Mbps connections to the Internet	School Board Director of Finance Director of Technology VITA Support Contractor	2007 - 2008	Internet capacity and throughput will increase	\$108,000.00
	2. Upgrade or replace current WAN equipment per requirements of upgraded circuits	School Board Director of Finance Director of Technology Support Contractor	2006- 2007	New equipment installed at all sites to allow access to new data connections	\$50,000
4. An integrated suite of instructional and administrative applications supported by standards-based enterprise architecture for K- 12 schools is in place	1. Continue to purchase Microsoft School Agreement for software assurance regarding MS Operating Systems and the Office Suite	School Board Director of Finance Director of Technology Support Contractor	2005	Renewal certificate	\$60,000
	2. Continue to utilize and purchase support for WebSmarrt Lunch Management System division wide	Director of Finance Director of Technology Support Contractor	2005	Most current version installed at the start of each school year	\$5,000.00
	3. Continue to utilize and purchase support for Pearson/Chancery Student Management System division wide.	Director of Finance Director of Technology Support Contractor	2005 - 2006	Most current version installed at the start of each school year	\$15,000

Target	Strategies	Responsibility	Implementation Date	Assessments	Estimated Cost
GOAL II: Ensure sufficient support for ongoing, reliable network operations.					
1. Adequate support personnel are in place to operate and support the K-12 school technology infrastructure.	1. Fredericksburg City Schools will continue to contract support services for its K-12 school technology infrastructure	School Board Director of Finance Director of Technology	Annually for the duration of this plan	Signed contract for support services	\$150,000.00
2. Support personnel for K-12 school infrastructure have appropriate technical skills.	1. All contractors providing support services to Fredericksburg City Schools provide the Division with appropriate credentials and certifications. All contractors must be Microsoft Server Certified, HP certified, Fortigate and Cisco Certified.	School Board Director of Finance Director of Technology	Annually for the duration of this plan	Signed contract for support services	
3. School systems have customer support systems in place to address technical problems in a timely and efficient manner.	1. Online Support Desk and Trouble tracking systems will be developed and deployed by the division..	Director of Technology	2007-2008	Intranet site exist division computer users to report problems and request software installs.	\$4000.00
4. School divisions plan for the total cost of ownership (TCO) associated with K-12 technology.	1. The division will use tools recommend by the DOE to determine the TOC associated with our K-12 technology	Director of Technology	2006	TOC will be determine for our K-12 Technology	

Target	Strategies	Responsibility	Implementation Date	Assessments	Estimated Cost
GOAL III: Provide leadership and resources to promote efficient procurement of infrastructure, including the identification and procurement of emerging technologies.					
1. The K-12 school technology procurement process is efficient and cost effective.	1. Fredericksburg City Schools will continue to purchase technology equipment from State Contract or through a competitive bid process.	Director of Technology	Annually for the duration of this plan	Invoices and quotes will be kept in the Technology Department	
2. The school division is regularly informed about emerging technologies for instruction and administration.	1. The technology committee will be kept abreast in regards to emerging technologies for instruction and administration by the Director of Technology, vendor visits, and roundtable discussions.	Director of Technology	Annually for the duration of this plan	Minutes from Technology Committee meetings	
GOAL IV: Ensure that Fredericksburg City Schools has network security, filtering, and disaster recovery plans in place.					
1. Policies, procedures, and technologies are in place to ensure that computing resources are secure and recoverable.	1. A Division Acceptable Use Policy (AUP) and Users Guide is published and distributed to all employees and students for signature	Director of Technology	Annually	AUP is included in the Six-Year Technology Plan,. In addition, it is posted on the division's web site. It is also distributed to all employees and students during the first weeks of school. Signed AUP's are kept at the site of origin. The Student Management System is used to identify and track who signed the Computer Acceptabl Use Policy	No Additional Cost

	2. The division will develop and maintain backup and disaster recovery policies	Director of Technology	Annually		No Additional Cost
2. The school division will maintain an up-to-date Acceptable Use Policy (AUP) and effectively use network filtering solutions and address Internet Safety.	1. The division will develop and maintain an Internet use and content filtering policy. This policy will be a component of the Acceptable Use Policy.	Director of Technology Technology Advisory Committee	Annually or as required	Internet Safety Component will be included in the Acceptable Use Policy.	
3. School divisions have appropriate and effective network and data security policies and systems.	1. Latest version of Veritas Backup Exec will be maintained on all division servers	Director of Technology Network Services Contractor	As required	Annual renewal of services Weekly Reports from contractor	\$8000.00
	2. Tape backup libraries will be updated, deployed and maintained at each school as required.	Director of Technology Network Services Contractor	2006 - 2007	Weekly Reports from contractor. Offsite storage of backup tapes	\$25,000.00
	3. Perimeter firewalls will be utilized and maintained at each site to protect the division from security breaches.	Director of Technology Network Services Contractor	2006 - 2007	Firewall performance and integrity will be reviewed annually	\$28,000.00
	4. A Network Users Guide will be reviewed and updated annually.	School Board Director of Technology	Annually		

	<p>5. Internet content filtering and Antivirus technologies will be updated, deployed, and maintained as needed. Procedures regarding inappropriate content will be reviewed as required</p>	<p>Director of Technology Support Contractor</p>	<p>Annually</p>	<p>Enterprise Web content filters and Anti Virus technologies will be utilized to prevent users from receiving inappropriate web content or viruses (Content Filtering per federal regulations.)</p>	<p>\$34,000.00</p>
	<p>6. SPAM filtering technologies will be updated, deployed, and maintained as needed. Procedures regarding SPAM detection will be reviewed as required.</p>	<p>Director of Technology Support Contractor</p>	<p>Annually</p>	<p>Enterprise level SPAM blocking technologies will be utilized within the division.</p>	<p>\$1000.00</p>
	<p>7. Symantec Norton Anti Virus will be maintained on all division servers and local workstations.</p>	<p>Network Services Contractor</p>	<p>As Required</p>	<p>Weekly Reports from contractor</p>	<p>No Additional Cost</p>

EDUCATIONAL APPLICATIONS

“Educational applications relate to the instructional and administrative applications that will run over the infrastructure “highway” referenced in the Connectivity element.”

Target	Strategies	Responsibility	Implementation Date	Assessments	Funding
GOAL I: Improve teaching and learning through the appropriate use of network-accessible educational applications.					
1. Teaching and learning resources that effectively support the Virginia Standards of Learning (SOL) have been identified, communicated, and developed.	1. The ITI will work in collaboration with the Lead Teachers Committee to publish a web document on the division’s web site which identifies resources that support the Virginia Standards of Learning (SOL). This subcommittee will review and update this resource list.	Director of Administration & Instruction Division ITIs	2005	The division’s website will contain an instructional resource page organized by grade level and subject.	No Additional Cost
GOAL II: Promote and develop Web-based applications, services, and resources.					
1. All schools are participating successfully in the Virginia Web-based SOL Technology Initiative.	1. Network capacity and Internet utilization will be monitored and analyzed prior to administration of eSOL’s. The school Readiness Spreadsheet provided by the DOE will be used to determine certification. Any school not meeting level 1 and 2 certification will be modified or adjusted to meet certification.	Director of Technology Coordinator of Information Technology Director of Administration & Instruction School Testing Coordinators	2004	All schools and divisions will use the Virginia SOL Web-based Assessment Program Checklist to determine readiness to administer e-SOL’s.	No Additional Cost
2. School divisions use Web-based applications for state data collection, warehousing, and reporting.	1. Continue utilizing the state’s web based EIMS program to manage student information. 2. Continue to use PEMSolutions to create, deliver, score, and report and analyze summative, formative, and alternative assessments, and provides many other custom online and paper-based testing and reporting services.	Director of Technology Coordinator of Information Technology Director of Administration & Instruction Division Director of	Annually beginning Fall of 2004	Student information will be uploaded to the NCS Pearson EIMS servers as well as PEMSolutions servers.	No Additional Cost

		Testing Division School Test Coordinator			
3. Use of a common set of data definitions allows standard communication and interpretation of student information.	1. (http://www.sifinfo.org/index.asp) Fredericksburg City School's information systems are all Schools Interoperability Framework (SIF) compliant. Fredericksburg City School will continue to seek applications which meet this certification.	Director of Technology Coordinator of Information Technology	Annually	All future information systems will carry the SIF compliant certification.	No Additional Cost
	2. Work with the DOE to establish a SIF system for Fredericksburg. Fredericksburg will purchase, configure, and deploy server capable of running a SIF Agent provided by the DOE.	Director of Technology DOE Support Contractor	2007 - 2008	DOE servers will pull required state and federal data from our Student Management System.	\$6000.00
4. Every school has an efficient, automated library media center connected to the Internet and networked to appropriate learning areas.	1. The division will upgrade the existing Follett Library Management System with Follett's Destiny Library Manager. This application will provide a powerful library automation system centralized on a single server within the school division. Users can access Destiny through any workstation with a web browser-through the district's WAN, the Internet or both.	School Board Director of Technology Division ITIs Library media specialist	Fall 2007-2008	All libraries will use the web based management system	TBD
	2. The division will purchase Follett's Destiny Textbook Manager a web based application which will provide a powerful library automation system centralized on a single server within the school division. Destiny Textbook Manager is easy-to-use, web-based textbook management system that will save	School Board Director of Technology Division ITIs Assistant Principals	Fall 2007-2008	All schools will use the web based textbook management system	TBD

	the division time and money by giving the schools control of their textbook inventory – anytime, anywhere.				
	3. The division will continue to purchase and utilize online databases for research	School Board Director of Technology Division ITIs School Librarians	2007 - 2008	Links to various database will be listed on school's library web pages	,\$4000.00
5. School divisions have strategies for providing community access to school-based technology and applications.	1. The school division will redesign the division's web site. An online survey utilizing Survey Monkey will be designed and deployed as a popup on our division home page and each school's web site. Data collected from this survey will be used to determine format, layout, and expected information. The new web site will simplify the posting of information to the division's web page by administrators, teachers, and staff by utilizing Macromedia Contribute.	Director of Technology Division ITIs	Fall 2004-2005		\$17,000 for design service, site security setup, server setup and. Site license for Macromedia Contribute will be required.
GOAL III Offer digital learning opportunities at state and local levels.					
1.	1. Fredericksburg City Schools will continue to offer Web Based courses such as Cisco Networking Academy, ProSoft CIW program, Keystone (Alternative Education Program)	Director of Technology Director of CTE Director of Administration & Instruction Division ITIs	Annually	The division will see growth in the number of online courses and professional development activities	TBD
	2. The Department of Curriculum & Instruction will continue to research web based courses and online Professional Development in order to provide quality services to faculty and students.	Director of Technology Director of Administration & Instruction	Annually	A listing of division approved Professional Development and online	No Additional Cost

		Division ITIs		courses will be created and posted on the division's web site.	
2. Schools are able to receive digital television broadcast signals and effectively utilize the enhanced capabilities.	1. The Technology Department will research, develop, and distribute guidelines (standards) for utilizing the wide area networks at each site to support online streaming video.	Director of Technology	2008	Document posted online regarding usage of video over LAN	No Additional Cost
	2. The division will purchase and install required media equipment to allow networking of video over the LAN's. This includes video servers, television, and required media.	Director of Technology	2008		TBD following item & cost analysis
	3. Install a new digital downlink on site at the new James Monroe High School and Walker Grant Middle School. Purchase required equipment. Install CATV in all instructional rooms per state developed communications guidelines (standards) including equipment specifications for various levels (within school divisions) of digital networking capabilities	Director of New Construction Director of Technology Division ITIs	2009	Each school will be able to receive, store, retrieve, and play video over the LAN and WAN connections	TBD

ACCOUNTABILITY

“Accountability addresses the broad assessment of information technology and its specific value to teaching and learning environments, data management, and decision support functions related to K-12 schools.”

Target	Strategies	Responsibility	Implementation Date	Assessments	Funding
GOAL I: Assess the value that information technology (IT) adds to teaching and learning environments.					
2. Identify elements of technology integration that benefit the teaching and learning environment.	<ol style="list-style-type: none"> 1. Establish a collaborative sub-committee consisting of technology committee members and the divisions’ lead teachers committee and challenge them to Define Technology Integration Identify and communicate the elements of Technology Integration 2. Provide training during Technology Summer Institute to administrators for assessing the presence of the elements of technology integration that directly affect instruction and learning. (LoTi) 	Director of Technology	1. Fall 2005	The committee will produce an artifact that clearly defines and illustrates technology integration	No additional cost Local Funds
2. Readiness to integrate technology into teaching and learning has been assessed for each school.	<ol style="list-style-type: none"> 1. Continue to participate with the North Tier Partnership and utilize the LoTi services it provides to determine each school’s readiness to integrate. 	Director of Administration & Instruction Director of Technology Division ITIs	2. Annually thru 2010	All administrators will attend integration workshops	\$3000.00 Annually
4. Instructional technology integration has been assessed in schools and classrooms.	Continue to conduct online LoTi surveys annually to determine each school’s and teachers level of technology integration.	Division ITIs	3. Annually thru 2010	Integration will become a component of the formal observation process	\$500.00 annually

4. Technology-rich environments and effective technology-based instructional strategies support student learning.	1. Provide opportunities for the division's faculty and administrators to participate in and observe best practices that support student learning such as: <ul style="list-style-type: none"> • North Tier Technology Symposiums • VSTE Conference • DOE Technology Conference 	Director of Instruction & Curriculum Director of Technology	4. Annually	80 % of faculty and staff will participate in the Online LOTI assessment each year of this plan	No additional cost Local Funds
GOAL II: Provide appropriate decision support capabilities for all stakeholders.					
1. Information systems provide comprehensive information about student learning progress.	1. Continue to utilize SOL Tracker, Chancery SMS to process data related to student educational progress	Coordinator of Information Technology	Annually	Student SOL scores and cumulative progress will be uploaded into the SOL Tracker's Database and the EIMS online database. Student information will be stored in the WinSchool database.	\$23,000 annually
2. Information systems interface to provide staff members the ability to use appropriate and effective data to make decisions	1. Chancery SMS, EIMS, and SOL Tracker will be used as (DCT) Decision Support Tools.	Director of Technology Coordinator of Information Technology Technology Data Entry personnel	Annually	All federal, State and Local reports will be filed with the appropriate agencies	No Additional Cost
GOAL III Assess information technology (IT) literacy.					
1. All students are technology literate.	1. Fredericksburg's Lead Teacher Committee will collaboratively work with the ITI to develop an online technology assessment based on the Virginia Technology		Fall 2004	An online technology assessment will be posted on a secure server.	No Additional Cost

	SOL's and a locally developed Scope and Sequence for Technology. This Technology assessment will be administered to all students yearly by the classroom teacher.				
2. All instructional personnel are technology literate.	1. All new teachers and instructional staff members will be required to show the Director of Technology proof of meeting the Virginia's Technology Standards for Instructional Personnel	Director of Personnel Director of Technology Division ITIs	2004	100 % of Instructional Personnel will meet the Virginia TSIP's within one year from the date of hiring	No Additional Cost
3. All paraprofessionals and support staff are technology literate.	1. Teachers and Instructional staff not meeting the TSIP's will have one (1) year to complete an approved technology portfolio or complete a locally developed technology for educators program or complete a recognized college program for instructional technology		Fall 2004		\$25,000 for a cohort 50 students
4. Students meet expectations for technology utilization pertaining to their subject and grade level as described by school division technology plans.	1. Fredericksburg's Lead Teacher Committee will collaboratively work with the ITI to developed Technology Scope and Sequence for each grade level.	Director of Administration & Instruction Director of Technology Division ITIs	2004-2005	A Technology Scope and Sequence will be developed for each grade level in the division	No Additional Cost
GOAL IV. Ensure that local technology plans are consistent with the state technology plan.					
1. School divisions will have technology plans that are consistent with the components of the state	1. Division will submit an aligned 6 year Technology Plan to the DOE by June 30, 2004	Director of Technology Division ITIs	2004	Fredericksburg's Six-Year Technology Plan will be	No Additional Cost

<p>technology plan. All schools will have technology plans that are consistent with the components of their division technology plan.</p>	<p>2. Division will post the final copy of the 6 year Technology Plan on the Division's web site</p>			<p>available for download from the school division's web site.</p>	
<p>2. All schools and school divisions will evaluate annually the progress and effectiveness of their technology plans.</p>	<p>1. The Technology Committee will utilize SWOT annually to asses the Six Year Technology Plan and modify as required to meet the division's educational goals.</p>	<p>Director of Administration & Instruction</p> <p>Director of Technology</p>	<p>Annually beginning 2005</p>	<p>Previous versions of the Six-Year Technology Plan will be stored in the Technology Department and on the division's website.</p>	<p>No Additional Cost</p>
	<p>2. Conduct an annual review of the Six-Year Educational Technology Plan; use data collected to revise the process and strategies that reflect the changing priorities of the Commonwealth, the Department of Education, and public schools in Virginia. All revised Plans will be submitted to the State for approval prior to the Division reposting the plan on the division's web site.</p>	<p>Division ITIs</p>		<p>Minutes from the Technology Committee's meeting will include Technology Planning discussions</p>	

**Fredericksburg City Schools
Technology Plan
2004-2010
Executive Summary**

Fredericksburg City Schools believes that a quality education relies, in large part, on professional educators, parents, and students having access to the information, resources, and tools that serve learners of all ages. In past years, Fredericksburg has experienced significant growth in the area of informational technology. If Fredericksburg is to remain a technological leader in Virginia, the school division will require continual support from the School Board and City Council to achieve the educational & instructional goals identified in this Six-Year Technology Plan and in plans of the future. Proper planning regarding the selection, use, and deployment of modern informational and educational technologies is pivotal in the success of technology altering our students' educational performance.

During the process of developing this Six-Year Technology Plan, the Technology Committee consisting of key stakeholders from within the school division contributed their thoughts, concerns, and aspirations regarding the use of information technology to improve student learning. This Six Year Plan is a collaborative vision for Fredericksburg City Public Schools. Working collaboratively with members of the Technology Committee, various faculty members and the administrative team, the Director of Technology compiled this plan based on the framework provided by the Virginia Department of Education. Fredericksburg City Schools Six Year Technology Plan was designed around the same key components and goals that were established by the state in the development of Virginia's 2004-2010 Educational Technology Plan. The division utilized the Strengths, Weaknesses, Opportunities, and Threats (SWOT) methodology to assess its current use of information technology. The data generated by the SWOT methodology was used to decide which goals were applicable to Fredericksburg City

Schools. The Director utilized the SWOT data and various feedbacks from key stakeholders to develop targets and strategies that would allow the division to achieve their desired goals. In addition to establishing goals, targets, and strategies, the division established various assessment methods designed to measure the goal attainment.

Key Components & Goals

The following list structure has been utilized in the layout of this summary:

Educational Technology Component

1. Goals of Component

a. Targets

i. Strategies

Integration refers to the appropriate use of specific technologies as highly effective tools in facilitating learning across all levels of cognitive inquiry and development.

Goal I: Improve teaching and learning through the appropriate use of technology.

1. Administrators have a vision and plan for technology use and integration.
 - a. Develop a formal evaluation component for technology integration and identify who will be responsible for the evaluation process.
 - b. Administrators will attend regional, state and national conferences relating to technology integration
 - ii. VSTE Conference
 - iii. DOE Technology Leadership Conference
 - iv. Any other regional, state or national conference
2. School leaders provide support for integration of technology in instruction.
 - a. Continue to support training for technology integration
 - b. Continue our partnership with the North Tier Partnership and utilize the professional development opportunities it provides.
3. Leaders can effectively evaluate instructional uses of educational technology.
 - a. The Instructional Technology Integrators (ITIs) will provide a series of training workshops for lead teachers and administrators. These workshops will provide training in the process of evaluating individual classroom teachers' levels of technology integration.
4. Technology integration partnerships are established among educational technology stakeholders.
 - a. Lead Teachers will be represented on the Technology Committee
5. Teachers effectively integrate instructional technology.
 - a. Continue to explore the web as a delivery system for high quality in-services in regards to integrating technology into the curriculum.
 - b. Establish a system to deliver online courses created by trained teacher
 - c. Administer the online LOTI assessment to all instructional personnel annually
 - d. Online VITAL surveys will be administered to teachers, administrators and 8th grade students to determine if integration is taking place.
6. Teachers collaborate to improve and enrich instruction using technology.
 - a. provide opportunities for two (2) teachers from each school site to attend the annual VSTE conference and the DOE Technology Leadership Conference
 - b. Fredericksburg will provide teachers with the resources required to attend the locally developed Lead Teacher meetings, school faculty meetings and the North Tier Partnership TieIn activities

- c. Establish a discussion web for teachers to share integration experiences and store integrated lesson plans
- 7. Teachers collaborate to improve and enrich instruction using technology.
 - a. Fredericksburg will establish a web based system that will allow teachers to have develop discussion webs and share high quality lesson plans.
- 8. Teachers use technology-based intervention strategies to improve student achievement
 - a. ITIs will model intervention strategies to faculty and administrators during Lead Teacher and faculty meetings
- 9. Teachers understand and model the acceptable use of technology in teaching and learning.
 - a. Send (4) four teachers to Troy State University Masters Degree program in Instructional Technology.
 - b. Hire 4 full-time Instructional Technologists by 2008. They will serve as school technologist assisting with help desk issues and assist our Instructional Technology Integrator (ITI).
 - c. Hire 2 additional full-time Instructional Technology Integrator (ITI).
 - d. ITI team will perform follow-up surveys with the faculty to determine if appropriate practices modeled during Summer Technology Institute and scheduled workshops and in-services have been assimilated into the teachers' curriculum.
- 10. Students routinely use technology in a variety of learning activities across the curriculum.
 - a. Teachers will continue to utilize the wireless mobile and stationary computer labs at each location with their students for such activities as: research, reporting, analyzing, and other SOL related instructional activities
- 11. Students will have information literacy skills.
 - a. The division will continue to develop a local technology scope and sequence for each grade level. This scope & sequence will serve as a guide to insure that all students have the technological (Tech SOL's) skills required for a successful educational and life experience
- 12. Student learning and achievement will be enhanced through the effective integration of technology.
 - a. The division will continue to use Sol Tracker to analyze the student cumulative SOL performance and achievement in core subjects.
 - b. The division will continue to participate in the state's Educational Information Management System (EIMS) program.
 - c. The division will use the date contained within EIMS and Tracker to improve student achievement.
- 13. Student learning and achievement will be enhanced through the use of advanced technologies.
 - a. The Technology Committee will continue to assess current educational technologies and explore new and emerging technologies as well as methods to incorporate them into the overall curriculum.
 - b. Fredericksburg will continue to provide web based video through various service providers to all schools.
- 14. Computer/Technology Standards of Learning (SOL) are fully integrated across all curriculum areas.
 - a. The Lead Teachers at each school will work collaboratively with the division ITI's to develop, and administer a system to measure the technology SOL's for each grade level with emphasis being on grades 3, 5, 8 and 11.
 - b. The division will analyze local technology SOL results to determine strengths and weaknesses of instruction. This information will be used to capitalize on our strengths and improve upon our weakness.
- 15. Internet Safety will be incorporated into division's overall curriculum for grades K-12

- a. Establish a collaborative partnership with the Office of Curriculum and Instruction to develop and implement a system to deliver Internet Safety Instruction to all students, faculty, administration and parents per state legislation.
 - b. All stake holders with direct interaction with students and computers will participate in and complete the Isafe.org mentorship program through planned in-services, workshops or from the convenience of their own home.
 - c. All teachers grades K-12 will use teachable moments to instruct students in how to be safe while working online.
16. Instructional personnel will meet Technology Standards for Instructional Personnel (TSIP).
- a. The division will continue to provide training classes, online tutorials and workshops during the school year which will address the TSIPs. In addition to TSIPs these activities will incorporate technology integration across the curriculum for all subjects and grade levels.

Goal II: Improve statewide equity in the implementation of technology-enhanced teaching and learning.

1. Educators and students have access to technology to support instructional goals.
 - a. Supervised computer labs at each site will be accessible before school opens and following the closing of school.
 - b. All classroom teachers will have a teacher workstation provided to them. This workstation will have the most recent operating system and the most recent Microsoft Office Suites installed as well as school, grade and subjects specific software required in their daily work.
 - c. The Lafayette Upper Elementary School has the following classroom technologies:
 - i. One(1) teacher/admin multimedia computer w/TV card and DVD RW drives and HS internet and LAN connections
 - ii. One (1) Ceiling mounted SVGA Projector connected to the Teacher/Admin Computer
 - iii. Two(2) student instructional computers with HS internet and LAN connections
 - iv. One (1) computer lab per grade level consisting of 30 computers, one action board with PRS and Tablet, one ceiling mounted SVGA projector.
 - v. Wireless Media Center
 - d. The New James Monroe High School has the following classroom technologies:
 - i. One (1) teacher/admin multimedia computer w/TV card and DVD RW drives and HS internet and LAN connections
 - ii. One (1) Ceiling mounted SVGA Projector connected to the Teacher/Admin Computer
 - iii. Two(2) student instructional computers with HS internet and LAN connections
 - iv. One computer lab per grade level consisting of 30 computers, one action board with PRS and Tablet, one ceiling mounted SVGA projector.
 - v. Wireless Media Center
 - e. Over the next 4 years where required all classrooms will be upgraded to match the instructional technology currently existing at James Monroe and Lafayette.
 - f. The division will pilot the use of dual boot laptop systems as a replacement to antiquated and non functional Emates which were utilized in the home loan program at Walker-Grant
 - g. The division has investigated the total cost of implementing a wireless Pocket PC program at the High School and Middle School. This program would have allow students to borrow a wireless Pocket PC with a wireless keyboard and instructional software selected by lead teachers. The division will not pursue this imitative in lieu of the new dual boot lap top pilot program
2. Appropriate technology-based instructional strategies are used for students with unique needs.
 - a. The Technology Department will continue to work with the Office of Student Services and the Special Education Department at each school by providing assistance with the selection and purchase of assistive devices for special needs students.

Professional Development covers both pre-service and in-service training with a specific focus on the Virginia Technology Standards for Instructional Personnel.

Goal I: Establish partnerships for identifying and delivering effective technology training to assist educators as they help students achieve high academic standards.

1. Educator training programs reflect pre-service course work and experiences that include effective approaches to integrating technology into K-12 education.
 - a. Instructional personnel will continue to participate in challenging in-service training which will be provided by the Technology Department and the North Tier Partnership
2. A variety of classes, training, and resources pertaining to integrating technology effectively are available for staff development.
 - a. Courses & programs offered by the North Tier Partnership include:
 - i. PBS Online courses
 - ii. Educational Development Center Online Courses
 - iii. Graduate Program offered through Troy State University
 - b. The division will pursue establishing a partnership with MWC and Germanna Community College that would allow our staff and faculty to enroll in specially designed programs that would facilitate technology integration and TSIP's certification
3. Technology-related staff development offered by various entities is provided in a variety of topics and delivery methods.
 - a. Continue providing challenging in-service training through the MWC Technology Training Course for SPED personnel regarding the use of assistive devices
 - b. Continue sponsoring the Summer Technology Institute
4. Technology leadership activities are provided to K-12 educational technology stakeholders.
 - a. Continue to provide in-service training for all new teachers during pre-school week.
 - b. Deliver technology integration instruction online.
 - c. Continue to provide opportunities for integrating technology into the curriculum through scheduled workshops.

Goal II: Administer grant programs and financial assistance initiatives that support implementation of educational technology integration.

1. Grant programs and alternative sources of funding that support educational technology are administered.
 - a. Fredericksburg will continue to serve as the fiscal agent for the North Tier Partnership Educational Technology Competitive Grant
 - b. Fredericksburg will continue to utilize VPSA funds to increase the number of networked multimedia computers in all location
 - c. Fredericksburg will research and apply for additional federal, state and private grants
2. Teacher education institutions, businesses, organizations, and private entities become partners in the implementation of technology-related grants focusing on technology integration
 - a. Fredericksburg will continue to use State Educational Technology Grant funds to provide professional development opportunities to the division's instructional personnel.

Goal III: Establish and maintain instructional technologists (including site-based technology resource teachers) in school divisions.

1. Site-based instructional technologists are available to all schools.
 - a. Hire 1 fulltime instructional technologists for each school site
 - b. Hire 1 fulltime technologists for each school site
 - c. Hire a Network Administrator or investigate contracting services, which address daily security issues, SPAM, Virus threats, user account problems, and file share permissions on the divisions 40+ servers.
2. Staff development models and activities that are designed for site-based instructional technologists are available for all K-12 schools
 - a. All activities and models will be posted on our Moodle server and/or web server.

Connectivity includes such concerns as the development of state and school division electronic infrastructures and the supporting software and hardware that would allow all users to have equitable technical access to local, state, and worldwide educational resources.

Goal I: Ensure that all schools have access to integrated instructional and administrative services across interoperable high-speed networks.

1. Every instructional and administrative area in each school has a sufficient number of network connections to support the high bandwidth requirements of current and future instructional and administrative applications.
 - a. The division will continue to replace computers and hardware on a 4-year cycle. One fourth (325) of the division's 1300 computers will be upgraded or replaced yearly
 - b. Upgrade Original Walker-Grant's 10 baseT LAN to mirror the other schools has been completed
 - c. Purchase additional network-ready multimedia microcomputers for all K-12 classrooms so five (5) computers are present in each classroom.
 - d. Purchase one (1) additional wireless mobile computer lab w/ a network printer for the high school and middle school each year of this plan until each school has 200 total wireless laptops. Currently the schools have 120 wireless laptops. Students and faculty will utilize these laptops throughout the school year. During the eSOL test cycle, they will be used to administer the eSOL to an entire grade level thereby reducing the demand on the computer labs at each school.
 - e. Student in grades 3 – 12 will be issued their own network login and be provided with a home directory on the school's file server to save their work.
 - f. Continue to utilize and support desktop security on all computers.
2. Each school division connects all school facilities through a wide area network with sufficient bandwidth to accommodate instructional and administrative needs.
 - a. Upgrade five point to point communication connections from 1.54 Mbps to 3 Mbps
 - b. Purchase, configure and install hardware appliance which allow management of bandwidth and layer 2 security
 - c. Continue to utilize E-Rate discounts for all eligible communication services
3. Each school's local area network has reliable high-speed access to the Internet capable of supporting instructional and administrative applications and initiatives.
 - a. Upgrade current 3 Mbps bonded T1 connection located at James Monroe to a DS3 connection with 25 Mbps connections to the Internet.
 - b. Upgrade or replace current WAN equipment per requirements of upgraded circuits
 - c. Continue to utilize E-Rate discounts for all eligible communication services
 - d. Continue to measure and access Internet and WAN bandwidth utilization and adjust capacity to insure each school has sufficient bandwidth to implement instructional strategies.

4. An integrated suite of instructional and administrative applications supported by standards-based enterprise architecture for K- 12 schools is in place.
 - a. Continue to purchase Microsoft School Agreement for software assurance regarding MS Operating Systems and the Office Suite
 - b. Continue to utilize and purchase support for WebSmartt Lunch Management System division wide
 - c. Continue to utilize and purchase support for Pearson/Chancery Student Management System division wide.
 - d. Continue to investigate instructional software and programs that support improving student achievement in core subjects.

Goal II: Ensure sufficient support for ongoing, reliable network operations.

1. Adequate support personnel are in place to operate and support the K-12 school technology infrastructure.
 - a. Continue to contract 24, 7,365 support services for K-12 school technology infrastructure from a certified technical support provider.
 - b. Student interns from our A+ and Networking Hardware courses at James Monroe High School where applicable.
 - c. Continue to support Part-time information technologist at each site
2. Support personnel for K-12 school infrastructure have appropriate technical skills.
 - a. The division will continue to contract support services for its K-12 school technology infrastructure for organizations w/ appropriate credentials that certify their professional skills.
3. School systems have customer support systems in place to address technical problems in a timely and efficient manner.
 - a. Online Support Desk and Trouble tracking systems will be developed and deployed by the division and utilized by our on-site technologist, support vendor, faculty, administration ect.
 - b. Continue to support 24,7,365 service contract with a certified technical support provider
 - c. Continue to utilize student interns from our A+ and Networking Hardware courses
 - d. Continue to utilize part-time technologist at each site
4. The school division plans for the total cost of ownership (TCO) associated with K-12 technology.
 - a. The division will use tools recommend by the DOE to determine the TOC associated with our K12 technology

Goal III: Provide leadership and resources to promote efficient procurement of infrastructure, including the identification and procurement of emerging technologies.

1. The division's technology procurement process is efficient and cost effective.
 - a. The division will continue to seek the best technology for the lowest cost by purchasing technology equipment from the State Contract or utilizing the competitive bid process.
2. Schools are regularly informed about emerging technologies for instruction and administration.
 - a. The technology committee will be kept abreast in regards to emerging technologies for instruction and administration by the Director of Technology, vendor visits, and roundtable discussions

Goal IV: Ensure that Fredericksburg City Schools has network security, filtering, and disaster recovery plans in place.

1. Policies, procedures, and technologies are in place to ensure that computing resources are secure and recoverable.
 - a. Published existing policies and procedures for data security and recovery and distribute them to key stakeholders.
 - b. Backup tape libraries will be maintained remotely on all division servers by network support service contractor
 - c. Tape backups will be stored offsite. And managed by the division's network support vendor.
2. The school division will maintain an up-to-date Acceptable Use Policy (AUP) and effectively use network filtering solutions and address Internet Safety
 - a. The division will develop and maintain an Internet use and content filtering policy. This policy will be a component of the Divisions Acceptable Use Policy.
 - b. The division's Acceptable Use Policy (AUP) will be published, posted online and distributed to all employees and students for signature and use. Signed AUP's will be stored at the appropriate school by a designee of the building administrator.
 - c. The Acceptable Use Policy (AUP) as well as other policies and guidelines will be accessible by each employee via the ITS website. This site will explain Internet content filtering procedures; SPAM filtering procedures server usage, and other pertinent information for a computer user in Fredericksburg City Schools.
3. School divisions have appropriate and effective network and data security policies and systems.
 - a. Backup software and servers will be maintained at each site. Tapes will be removed and storied off-site by the support vendor.
 - b. Perimeter firewalls will be utilized and maintained at each site to protect the division from security breeches.
 - c. Internet content filtering and Antivirus technologies will be updated, deployed, and maintained as needed. Procedures regarding inappropriate content will be reviewed as required
 - d. SPAM filtering technologies will be updated, deployed, and maintained as needed. Procedures regarding SPAM detection will be reviewed as required.
 - e. A web-based email archiving system will be deployed and maintained by the network support vendor.
 - f. Anti Virus systems will be maintained remotely on all division servers by network support service contractor.

Educational Applications relate to the instructional and administrative applications that will run over the infrastructure “highway” referenced in the Connectivity element.

Goal I: Improve teaching and learning through the appropriate use of network-accessible educational applications.

1. Teaching and learning resources that effectively support the Virginia Standards of Learning (SOL) have been identified, communicated, and developed.
 - a. The ITI will work in collaboration with the Lead Teachers Committee to publish a web document on the division’s web site which identifies resources that support the Virginia Standards of Learning (SOL). This subcommittee will review and update this resource list.

Goal II: Promote and develop Web-based applications, services, and resources.

1. All schools are participating successfully in the Virginia Web-based SOL Technology Initiative.
 - a. Network capacity and Internet utilization will be monitored and analyzed prior to administration of Esol’s. The school Readiness Spreadsheet provided by the DOE will be used to determine certification. Any school not meeting level 1 & 2 certification will be modified or adjusted to meet certification.
2. The school division uses Web-based applications for state data collection, warehousing, and reporting.
 - a. Continue utilizing the state’s web based EIMS program to manage student information.
 - b. Continue to use PEMSolutions to create, deliver, score, and report and analyze summative, formative, and alternative assessments, and provides many other custom online and paper-based testing and reporting services.
3. Use of a common set of data definitions allows standard communication and interpretation of student information.
 - a. Fredericksburg will continue to seek software applications which meet the Schools Interoperability Framework (SIF) certification, currently the following applications are SIF certified
 - i. Pearson SMS (Student Management System)
 - ii. Pearson SMS Gradebook
 - iii. SOL Tracker
 - iv. WebSmartt Web Based Lunch management Program
 - b. Continue to work with the DOE to establish a SIF system for Fredericksburg.
 - i. Fredericksburg will purchase, configure, and deploy server capable of running a SIF Agent provided by the DOE.
4. Every school has an efficient, automated library media center connected to the Internet and networked to appropriate learning areas.
 - a. Currently each school is using Follett’s server based library management system. The division plans to replace this version of Follett with a web version called Destiny Library Manager.
 - b. Currently the division has no electronic inventory system for maintaining records of textbooks. The division will purchase Follett’s Destiny Textbook Manager a web based application which will provide a powerful library automation system centralized on a single server within the school division.
 - c. The division will continue to purchase and utilize online instructional databases for research
5. School divisions have strategies for providing community access to school-based technology and applications.
 - a. The division will investigate the cost of professional web site design services and management services.

- b. The division website is 3 years old and once again the division will redesign the site to make it more users friendly and more useful to parents, students and staff. The redesign will utilize an online survey. This survey will be deployed as a popup on our division home page and on each school's web page. Data collected from this survey will be used to determine format, layout, and expected information.

Goal III: Offer digital learning opportunities at state and local levels.

1. Web-based courses and staff development activities are provided.
 - a. Fredericksburg City Schools will maintain its partnership with the North Tier Partnership and utilize the instructional opportunities it provides
 - b. Fredericksburg City Schools will continue to offer web based courses such as Cisco Networking Academy, Pro Soft CIW program, Keystone (Alternative Education Program)
 - c. The Department of Curriculum & Instruction will continue to research web based courses and online professional development in order to provide quality services to faculty and students
 - d. The division will pilot with a small group of teachers from Walker-Grant and James Monroe the delivering high quality AP coursework via a interactive distant learning system.
 - e. The division will deliver high quality staff development coursework via a interactive distant learning system.
 - f. A web-based professional development tracking system has been deployed
2. Schools are able to receive digital television broadcast signals and effectively utilize the enhanced capabilities.
 - a. The Technology Department will research, develop, and distribute guidelines (standards) for utilizing the wide area networks at each site to support online streaming video
 - b. The division will continue to research, purchase and install required media equipment to allow networking of video over the LAN's.
 - c. The division will purchase required equipment to install a new digital downlink on site at the new James Monroe High School and Walker Grant Middle School.

Accountability addresses the broad assessment of information technology and its specific value to teaching and learning environments, data management, and decision support functions related to K-12 schools.

Goal I: Assess the value that information technology (IT) adds to teaching and learning environments.

1. Identify elements of technology integration that benefit the teaching and learning environment.
 - a. Establish a collaborative sub-committee consisting of technology committee members and the division's lead teacher committee will identify and communicate the elements of technology integration
 - b. Training will be provided for administrators that describe the process of assessing the presence of the elements of technology integration that directly affect instruction and learning.
2. Readiness to integrate technology into teaching and learning has been assessed for each school.
 - a. Continue to participate with the North Tier Partnership and utilize the LoTi services it provides to determine each school's readiness to integrate technology into the overall curriculum
3. Instructional technology integration has been assessed in schools and classrooms.
 - a. Conduct online LoTi and VITAL surveys annually to determine each school's and individual teachers' level of technology integration
4. Technology-rich environments and effective technology-based instructional strategies support student learning.
 - a. Provide opportunities for the division's faculty and administrators to participate in and observe best practices that support student learning
 - i. North Tier Technology Symposiums
 - ii. VSTE Conference
 - iii. DOE Technology Conference

Goal II: Provide appropriate decision support capabilities for all stakeholders.

1. Information systems provide comprehensive information about student learning progress.
 - a. Continue to utilize SOL Tracker, Pearson SMS to process data related to student educational progress
2. Information systems interface to provide staff members the ability to use appropriate and effective data to make decision
 - a. Continue to utilize Pearson SMS, EIMS, and SOL Tracker will be used as (DCT) Decision Support Tools

Goal III: Assess information technology (IT) literacy.

1. All students are technology literate.
 - b. Fredericksburg's Lead Teacher Committee will collaboratively work with the ITI to develop an online technology assessment based on the Virginia Technology SOL's and a locally developed scope and sequence for Technology. This Technology assessment will be administered to all students yearly by the classroom teacher
2. All instructional personnel are technology literate.
 - c. All new teachers and instructional staff members are required to show the Director of Technology proof of meeting the Virginia's Technology Standards for Instructional Personnel
3. All paraprofessionals and support staffs are technology literate.

- a. Teachers and Instructional staff not meeting the TSIP's will have 1 year to complete an approved technology portfolio or complete a locally developed technology for educators program or complete a recognized college program for instructional technology
4. Students meet expectations for technology utilization pertaining to their subject and grade level as described by school division technology plans.
 - a. Fredericksburg's Lead Teacher Committee will collaboratively work with the ITI to develop a Technology Scope and Sequence for each grade level based upon the Virginia Technology SOL's.

Goal IV: Ensure that local technology plans are consistent with the state technology plan.

1. Schools will have technology plans that are consistent with the components of the state technology plan. All schools will have technology plans that are consistent with the components of their division technology plan.
 - a. The division will submit an aligned 6 year Technology Plan to the DOE by June 30, 2004
 - b. The division will post the final copy of the 6 year Technology Plan on the Division's web site
2. The school division will evaluate annually the progress and effectiveness of their technology plans.
 - a. The Technology Committee will utilize SWOT annually to assess the Six Year Technology Plan and modify as required to meet the division's educational goals
 - b. The division will conduct an annual review of the Six-Year Educational Technology Plan; use data collected to revise the process and strategies that reflect the changing priorities of the Commonwealth, the Department of Education, and public schools in Virginia. All revised Plans will be submitted to the State for approval prior to the Division reposting the plan on the division's web site.