Technology Plan Addendum
2014- 2016

Contents

Introduction

I. **Who We Are**

The Accomack County Public Schools are located on Virginia's Eastern Shore. Our mainland is part of the Delmarva Peninsula. Accomack County schools are rural and isolated serving 5,420 students. Three of our schools are located on Chincoteague and Tangier Islands. Four elementary, two middle, one alternative, and two high schools (with career and technical centers) comprise the mainland schools. Due to the rapidly changing needs and the expanded vision of Accomack County Public Schools, (ACPS), a consensus has been reached that the state approved ACPS Technology Plan for 2010-2015 needs to be revised to reflect those changing needs. Therefore, this addendum to the original plan serves to align that plan to the current goals of ACPS.

II. Vision Statement & Mission Statement

It is the vision of Accomack County Public Schools to be a community of diverse learners where all members are valued, challenged, and expected to grow. We strive to prepare our students to be effective, productive users of technology. The Accomack County Public Schools central office staff, K-12 administrators, faculties, and staff are committed to the use of educational technology to access, remediate, and improve student achievement. The Accomack County Public Schools 2010-2015 Technology Plan is a roadmap that will be used and adjusted to ensure appropriate integration of technology in the classrooms of Accomack County Public Schools. In addition it serves as a roadmap for the use of funds allocated for Educational Technology over the next six years.

III. How We are Going to Make Our Vision a Reality - at the County Level

Since the original plan was written ACPS has made significant strides toward obtaining the hardware upgrades that the plan called for. ACPS now has enhanced broadband access in all of our schools, however, due to a re-envisioning of Internet usage, our needs have changed dramatically. Again, the original plan stated that an increasing percent of our classrooms were equipped with interactive boards. It can now be stated that all core classrooms are equipped with interactive boards. Educational Technology has suffered one significant set-back since the original Tech. Plan was written--rather than employing 3.5 ITRTs and 4.5 ITs, the county now employs 3 ITRTs and 4.5 ITs. This change is significant when one considers that the Standards of Quality call for 5 ITRTs and 5 ITs for a district of our size. We are in the process of upgrading all schools to broadband access. Each of the schools has a teacher that serves as a technology coach. These coaches teach a full load of classes, yet assist their fellow teachers with instructional technology implementation.

IV. How We Are Going to Achieve Our Vision- at the Building Level

With the rate of change in the technological world there is a fear of being unable to effectively use this new technology. According to Luke and Britten (2007) the answer lies in educating the teachers because teachers must be taught to use [this new] technology, but they must also experience successful and meaningful technology integration in their own lives and in their own

classes" (p. 264). ACPS accomplishes this by providing teachers with the opportunity for online learning through How to Master and PD360. ACPS also partners with the Eastern Shore Community College to offer various technology integration courses throughout the year. New teachers are provided with a full day of workshops focused on using technology to increase classroom activities/applications and improve student achievement. One hundred percent of our teachers were certified by the Virginia Technology Standards for Instructional Personnel for the last five school years.

ACPS has the view that "technology [should be] used to support learners, and make learning more efficient" (Al Musawi, 2011, p. 130) and in doing so makes "the learning experiences more memorable [by] improve[ing] access to ideas and information, [and by] enhance[ing] and extend[ing] an individual's abilities to express themselves" (Al Musawi, 2011, p. 130). In accordance with this belief each teacher was issued a state of the art wireless laptop computer in FY04, FY 08 and FY12. Al Musawi (2011) states that "technology is changing the way faculty teaches and students learn" (p. 130) and this is especially true for this digital age in which we live. We have begun to use technology as a medium/resource for finding and delivering information to students by making sure that every classroom is connected to the Internet. This resource role for technology allows information to be at the teacher's and student's fingertips (Al Musawi, 2011, p. 131). In order for our schools to continue to provide this service to our students we are in the process of upgrading all schools to broadband access. Student response devices and wireless slates are available to all teachers. ACPS began equipping teachers with interactive white boards in 2001-2002 and has steadily been increasing the percentage of classrooms with them. These interactive boards and slates allow for teaching strategies including "questioning, brainstorming, and role playing" (Al Musawi, 2011, p. 133) that "can be supported by the appropriate and innovative use of technology" (Al Musawi, 2011, p. 133). The use of PowerSchool provides teachers with an electronic gradebook and, for the first time, allows parents/guardians the ability to monitor student progress.

V. Our Plan

The current five-year technology plan is the fourth such plan. However, it is the first plan in which our needs have changed so rapidly as to require an addendum during its implementation. It is a cumulative effort that began in the FY 2009-2010 school year. The Accomack County Public Schools Technology Committee used the five areas of technology planning aligned with many of the goals and targets of the Virginia Department of Education's 2010-2015 Technology Plan. The strategies, responsibilities, costs, sources of funding, and evaluation benchmarks were established by the Technology Committee working in conjunction with teachers, building and central office administrators, staff, parents, and students. Teachers took a technology survey to help assess our needs and shortcomings prior to establishing goals and strategies. Our Technology Plan is displayed on the district website (http://www. accomack.k12.va.us).

VI. Technology Plan Committee Members_

James B. Carey	Technology Coordinator
Mark Mears	Network Administrator
Karen Riner	Principal, Chincoteague Elementary School
Shane Kio	Instructor, Nandua Middle School
Charles "Eddie" Lawrence	High School Instructional Coordinator

Dr. Myoshi Byrd	Assistant Principal, Nandua High School
Melissa Rollosson	ITRT
Jason Baldwin	Middle School Instructional Coordinator
Elward Crianza	Instructor, Arcadia Middle School
Brian Tupper	Principal, Arcadia Middle School
Crystal Chuquin	ITRT
Jessie Duncil	Director for Intervention and Prevention Services
Dr. Rhonda Hall	Assistant Superintendent for Administration and Human Resources
Dr. Maribeth Haines	Elementary School Instructional Coordinator
Joy Phillips	Instructor, Accawmacke Elementary School
Larry Blodgett	ITRT
Shaun O'Shea	Principal, Metompkin Elementary School
Amanda Hruska	Instructor, Nandua Middle School

Reference

Al Musawi, A. S. (2011). Redefining technology role in education. *Creative Education*, *2*(2), 130-135. Retrieved from http://ezproxy.cu-portland.edu/login?url=http://search.proquest.com/docview/896546212?accountid=10248

Barron, A. E., Kemker, K., Harmes, C. M., & Kalaydjian, K. (2003). Retrieved from http://mariaesposito.org/disseration docs/Nets/Barron.pdf

Luke, C. L., & Britten, J. S. (2007). The expanding role of technology in foreign language teacher education programs. *CALICO Journal*, *24*(2), 253. Retrieved from http://ezproxy.cuportland.edu/login?url=http://search.proquest.com/docview/750593265?accountid=10248

Infrastructure / Connectivity

Update and maintain an infrastructure that provides members of our immediate Education Community, (5,420 students and 500+ staff), access to contemporary technologies, software, digital content and communication networks.

Background data - bandwidth usage report:

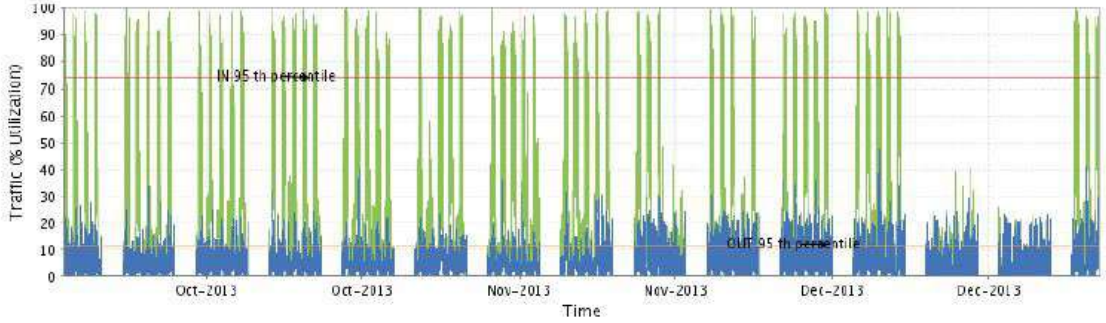
CapacityPlanning Report

Router Name :	01 sbo-c3945-1	Report Start Time:	2013-10-01 09:00
Interface Name :	SBO Gig0/0 (WAN)	Report End Time:	2014-01-08 15:00

Exclude weekends

Graph: Percentage

1 Minute Average



Utilization is calculated with Speed of 100.0 Mbps

Category	Total	Max	Min	Avg	Standard Deviation	95th Percentile
Traffic IN	13.52 TB	103.12%	0.00%	17.59%	24.92	74.09%
Traffic OUT	2.23 TB	47.24%	0.00%	2.91%	4.16	11.45%

Reporting period: 2013 Oct 01 - 2014 Jan 08
Report includes

- off-business hours.
- two-week Christmas holiday…**County and some school activities during break**
- Thanksgiving holiday.

The ACPS Internet bandwidth is 100 Mbps.

The reporting tool lets us filter out weekends, but not off-business hours (the time span is too great for that feature to work), and not holiday days. Because of these limitations, the "Average" number is useless. The category to look at is the 95th Percentile, which discards the top 5% of the results, which are considered intermittent traffic spikes. What remains is the average peak usage.

ACPS average peak bandwidth usage is 74.09%. In reality, with the caveats mentioned above, the number is higher.

This is before we

- migrate PowerSchool to Pearson-hosted services for greater reliability, happening in February.
- implement the district-wide Imagine Learning Initiative.
- we integrate Google Apps for Education into our technology portfolio as indicated elsewhere in this Tech Plan revision.
- we roll out any additional devices to individual students.
- we implement WIDA testing, next year.
- we add any future needs that Instruction may have in the semester and year(s) to come.

Cisco Systems, leading network equipment manufacturer, has stated that a WAN circuit running at 80 percent of capacity is too full. We are already pushing 80% at our current levels.

The recommendation is that we increase our bandwidth to 200 Mbps from SBO to ESVBA for second semester of this year (2013-2014) and re-evaluate at the end of the school year based on average usage at that time while taking into account Instructional plans for the 2014-2015 school year. Continue to re-evaluate as necessary.

Strategy 1

- **A** - Research and select a wireless access system that will support high density use of student/ staff devices in the high schools and medium density coverage in the elementary schools…add more access points as needed.
- **B** - Use current funds to equip the 5 elementary schools with the system of access points selected in 1-A... 2 middle schools will be upgraded after the elementary schools. (Order and start installations in **late February 2014- summer**...Tech Coordinator & Tech staff)
- **C** - Upgrade the remaining 4 school's access points (Tech staff in **2014-15**.)

Strategy 2

- **A** - Install Powered over Ethernet (POE) switches that will support access points and Voice Over Internet Protocol (VOIP) telecommunications\ as funds are available and in line with the county roll out of VOIP. This is a contracted installation.
- **B** - Install VOIP systems as budgeted funds allow for new school communication systems.

Subcommittee Members:
Shane Kio – Instructor, Nandua Middle School
Karen Riner – Principal, Chincoteague High School
Mark Mears - Network Administrator.

Support Systems

Provide a level of technical support and services that maintain the division's investment in state of the art software and technology equipment. Promote efficiencies that improve the areas of instruction and administration.

Strategy 1

- **A -** Seek full funding of the VDOE SOQs to include full time positions for 5 Instructional Technology Resource Teachers and 5 Technicians. While we meet SOQs, two data specialist positions are counted rather than ITRT positions. The data positions do not directly support instructional technology. *(**2014-15 Budget** request submitted for a full time technician and one of two ITRT positions to fill the required SOQ positions. We will request the **2nd ITRT position in 2015-16.**)*
- **B -** Implement a Help Desk that will
    - ¬ Assist staff with repairs and adjustments to their equipment and software
    - ¬ Input all work requests into IT Direct (Automated repair system)
    - ¬ Expedite emergency and mission critical requests directly to network and technical service.
    - ¬ This will be a clerical position that supports the help desk and gives clerical support to the Technology Services Department.
- **C -** Send selected technicians to MCSE training. Establish a network technician position and fund 2 such positions. *(Send 2 technicians and Network Administrator to training camp in **July 2014**)*
- **D -** Seek and fill a Network Engineering position that will maintain Microsoft servers, virtual servers, and Instructional software. (One network position is not enough to maintain our network.)
- **E -** Set up Protocols for
    - ¬ Level 1 Contact and repairs within 4 hours of receiving the request. (Emergency requests are given directly to the technician or a call to Technology Services. Examples: Internet is down in the school, Power School is not working/ accessible,
    - ¬ Level 2 Contact and repairs within a day, once the request is received by the technician examples: printer jammed, computer will not come on,
    - ¬ Level 3 Contact/ response from technician within a week to 2 weeks...waiting for parts or repairs by Dell. example: mother board on laptop is bad...computer will not come on,
    - ¬ Level 4 Contact and response within a week to advise that this request is work that needs to be done during the summer or other vacation time.
- **F -** Increase the use of IT Direct / School Dude to track and input work requests.

STRATEGIES	PERSONS RESPONSIBLE	START DATE	TARGET DATE	DATE COMPLETED
1.A Seek full funding of ITRT and Technician (5 each)	Technology Coordinator	12/12/2013	7/1/2014/15	
1.B Implement a Help Desk	Technology Staff	August, 2014	8/30/2014	
1.C Seek training for MCSE for 2 technicians and the Network Administrator	Technology Coordinator	March, 2014	7/31/2014	
1.D Seek and fill a Network Engineering position	Technology Coordinator	2014-15 Budget item…July 2014 fill position upon approval	7/1/2014	
1.E Set up protocols for Services	Technology Staff	12/12/2013	2/20/2014	
1.F Increase use of IT Direct	Technology Staff	12/12/2013	5/30/2014	

Job descriptions:

Instructional Technology Resource Teacher (ITRT) This position is filled with a state licensed teacher that assists administrators, teachers and staff on the training side of educational technology. Use of equipment for instructional delivery, use of software for productivity, instruction or remediation, as well as any other in-service activities are part of the responsibilities of the ITRT. They also assist during SOL and benchmark testing activities. Please refer to the VDOE ITRT description of ITRT duties. (Salaries are covered by the professional teaching salary scale.)

Lead ITRT Secondary and elementary positions that have regular ITRT duties at schools, but also have added responsibilities to the overall mission and goals of the department of technology. **<u>Two weeks added</u>** to their regular teaching contracts would be necessary to fully fund this position. (Currently it is a title only position.)

- ¬ Set up students in the various remediation programs for the teachers
- ¬ Work on special projects for the Instructional Coordinators
- ¬ Maintain certain programs such as Can Do, (CTE tracking of competencies) for teachers and Central Office staff
- ¬ Other duties as assigned

Technician The technician position requires the national A+ Computer Repair license/ certification for software and hardware. Computer technician's responsibilities vary from position to position, but duties often include:

- Configure and maintain desktops, laptops, printers and other technology devices in classrooms, labs and offices
- Offers technical support on-site or via phone or email to faculty and staff
- Maintains wireless networks and CAT 5 connectivity
- Other duties as assigned
- Salaries are covered by the ACPS Computer Repair Technician Salary Scale

Network Technician The network technician is a position that requires A+ licensing as well as a Microsoft Certified Systems Engineering license. In addition to having technician responsibilities at 2 schools will also

- assist the Network Administrator with local maintenance of servers, routers and switches in the school district
- set up email and other required accounts for use of productivity software and communications
- other duties needed to support the ACPS network
- The network technician salary is $5,000.00 more than their technician pay with the MCSE license and $10,000.00 more than their technician pay with the MCSE and Certified Cisco Network Administrator CCNA license.

Network Engineer The network engineer programs servers, routers and switches and supports our OS (operating system/ Windows Server). The network engineer works in cooperation with the network administrator to assure that all systems are functioning at peak performance and assists with installation of new software systems for instruction and remediation

Network Administrator

- Manages all aspects of the ACPS network, and its security
- Assists the Technology Coordinator with planning for the district's needs
- All other duties as assigned

Technology Coordinator

- Plans, manages, and coordinates all aspects of the department of technology in conjunction with the school board office and instructional staff.
- Refer to the ACPS Technology Coordinator job description

Subcommittee members:
Jim Carey, Technology Coordinator
Charles "Eddie" Lawrence, High School Instructional Coordinator
Dr. Myoshi Byrd, Assistant Principal, Nandua High School

Communications

Provide ACPS faculty, staff and students the ability to work in a collaborative environment including email, contacts, and calendars, as well as documents, presentations and spreadsheets.

Strategy 1

- **A** - Using the Google domain we own (accomack.k12.va.us), make use of Google Apps for Education (GAFE) which includes, but is not limited to, Google mail (email), Google calendars, and Google Drive. These features are all free for verified education domains.

    - Google mail will be employed district wide prior to the beginning of the 2014-15 school year to provide ease of sharing contacts and distribution lists. In addition, groups can be created which use a single email address to send mail all members of the group. Student use of Google mail will be phased in over a period of time as deemed appropriate. (ACPS will need to use a 3rd party (Postini??) for archiving email as dictated by law.) ACPS email will be converted to Google mail by the beginning of the 2014-15 school year. Employees of ACPS can migrate to Google mail, at their request, prior to that time. Migration to Google mail will be relatively painless, however switching from first initial last name (jsmith) to first name.last name (john.smith) will cause a few headaches from a server and forwarding standpoint (not the user).

    - Contact sharing will be enabled for adult users in the ACPS domain while sharing for student users will be disabled. Should the need arise contact sharing for students can be enabled for individual school.

    - Google calendars will be employed by ACPS. These calendars can be shared within the confines of our domain, as well as to the public as deemed appropriate (school and event calendars).

    - Google Drive will be implemented as a means of creating and sharing documents, presentations, spreadsheets and forms. Each education account is allowed 30GB of data storage so users have plenty of room to store documents. Teachers will use Drive to share and distribute assignments. Students can then view and complete assignments, collaborate with classmates as needed, and turn in their assignments. Teachers will be able to view and annotate those assignments and the students will be able to see those annotations. The use of this paperless environment should save money as less paper and toner for printers and copiers will be needed.

    - Google Sites will be implemented by teachers for constructing sites for content distribution. Students will implement Google Sites for demonstration of knowledge purposes.

STRATEGY	PERSON(S) RESPONSIBLE	START DATE	COMPLETION DATE
Implement Google Mail - roll current email over to newly created Google Mail on the ACPS domain	Mark Mears	Summer 2014	
Implement contact sharing and create groups for distribution	SBO personnel, Melissa Rollosson, principals	Summer 2014	
Implement the use of Google Calendars	ACPS staff	Fall 2014	
Implement the use of Google Drive	ACPS staff, students	Fall 2014	
Implement the use of Google Sites	ACPS staff, students	Fall 2014	

- **B –** In-service the staff in the components of GAFE.
    - ACPS will make use of training documents provided by Google in their Rollout Guide In addition, ACPS will make available training documents that have been customized for our domain.

    - ACPS will hold training sessions for Google Mail prior to its roll out for the **2014-15 school year.** This training will include the use of shared contacts and Google Calendars.

    - Separate training will take place for the use of Google Drive, which includes Docs, Slides, Spreadsheets, and Forms). Topics will include the basics ins and outs of using these products, as well as sharing and collaboration.

    - Volunteers who can pilot the use of Google Drive with minimal support will be sought to use Google Drive during the first semester of the 2014-15 school year. During the 1st semester of the 2014-15 school year the technology department will provide training to widen the base of secondary teachers using Google Drive in their classrooms. Training will continue during the 2nd semester of the 2014-15 school year and by the 2015-16 school year all secondary teachers will be expected to use Google Drive.

    - Elementary volunteer users will be sought throughout the 2014-16 school years, gradually widening the implementation of GAFE until all teachers are using GAFE in the 2016-17 school year.

    - The speed at which Google Drive is implemented can be altered based on feedback from teachers.

    - The next stage of training will be using Google Sites and will follow approximately one year behind implementation of Google Drive. **(2015-16)**

STRATEGY	PERSON(S) RESPONSIBLE	START DATE	COMPLETION DATE
Teach "Contemporary Technology for Adminsitrators"	Melissa Rollosson	January - April, 2014	
Create training documents for APCS to use	ITRTs	March 2014	
Conduct training for all staff in the use of Google mail, including contacts and calendars	ITRTs	August 2014	
Conduct training in the use of Google Drive for secondary teachers - include focus on use with students	ITRTs	September 2014 and beyond	
Conduct training in the use of Google Drive for elementary teachers	ITRTs	September 2015 and beyond	
Conduct training in the use of Google Sites	ITRTs	September 2015 and beyond	

- **C** – Research and select a security/monitoring system for GAFE
    - ACPS will purchase and implement a security/monitor program (i.e. CloudLock Security) to ensure GAFE is being used in compliance with federal laws (CIPA, COPPA). Programs such as these scan the contents of Google Drive looking for sensitive information such as social security numbers and PINs in shared documents. Scans of Google Drive also provide usage statistics and disallowed file types. ACPS would be able to control which apps can/cannot be used, such as third party apps which might be a security risk.

STRATEGY	PERSON(S) RESPONSIBLE	START DATE	COMPLETION DATE
Investigate the choices in security/monitoring programs for GAFE and make recommendations	Melissa Rollosson	January 2014	
Purchase security/monitoring program for GAFE	Jim Carey	Summer 2014	
Implement chosen security/monitoring program	Jim Carey, Melissa Rollosson	Summer 2014	

Subcommittee members:

Melissa Rollosson, lead secondary ITRT
Jason Baldwin, Middle School Coordinator
Brian Tupper, Principal, Arcadia Middle School
Elward Crianza, Science teacher, Arcadia Middle School

Digital Content

Use of digital textbooks and software programs to promote Instruction

Strategy 1

- **A -** Identify and integrate digital textbooks
  - Digital textbooks (CK12) are currently used via Chromebooks in Grade 7 Science at Arcadia Middle School and in Chemistry classes at Arcadia High School.
  - Pearson Success Net, Math Connect ED, Science Fusion and Five Ponds Press are supplemental digital texts used at the elementary level.
- **B -** Integrate digital textbooks as funds are available for 1:1 equipment and digital textbooks
  - The device currently being used for the 1:1 (high density) are Chromebooks although other devices may be purchased at a later date as the use of digital textbooks expands.
  - Laptop carts are also available at all schools for use in classrooms for using digital textbooks.

Strategy 2

- A - Identify computer software that addresses the 3 levels of intervention in the core areas (An Instructional department committee is currently working on explicitly defining each tier).

SOFTWARE	TIER (1,2,3 OR TBD-to be determined)
Reflex Math	2
Imagine Learning	2
Catch Up Math	3
Pi and the Lost Function	2
Success Maker	1
EdMark	1
Hatch Teach Smart	1
Rosetta Stone	2
Study Island	1
Pearson Success Net (Reading)	1
Pearson Success Net (Math)	1
Math Connect Ed	1
Kidspiration	2

- **B**- Integrate computer software, server systems or cloud technology to accomplish division goals

SOFTWARE	DIAGNOSTIC/ ASSESSMENT (Y/N)	DEVICE
Reflex Math	Y	PC, Chromebook
Imagine Learning	N	PC, iPad (limited content)
Catch Up Math	N	PC, Chromebook, iPad
Pi and the Lost Function	N	PC, Chromebook, iPad
Success Maker	N	PC
EdMark	N	PC, Chromebook
Hatch Teach Smart	N	PC (Hatch)
Rosetta Stone	N	PC
Study Island	Y	PC, Chromebook, iPad
Pearson Success Net	N	PC, Chromebook, iPad
Math ConnectED	N	PC, Chromebook
Kidspiration	N	PC
Essay Scorer	N	PC, Chromebook, iPad
SOL Pass	N	PC, Chromebook, iPad
Accelerated Reader	N	PC, Chromebook, iPad
Interactive Achievement	Y	PC, Chromebook
Discovery Education	N	PC, Chromebook
Gizmo (Explore Learning)	N	PC, Chromebook
EMedia VA	N	PC, Chromebook
Star Reading	Y	PC, Chromebook
Star Math	Y	PC, Chromebook
Gates MacGinitie	Y	PC
Vernier	N	PC, Chromebook
CK12	N	PC, Chromebook
Virtual Virginia	N	PC, Chromebook
Edgenuity	N	PC
PALS	Y	PC, Chromebook
WIDA	Y	PC, Chromebook
Myhrw.com	N	PC, Chromebook, iPad
Wordly Wise 3000	N	PC, Chromebook, iPad

Subcommittee Members:
Crystal Chuquin
Dr. Rhonda Hall
Dr. Maribeth Haines
Jessie Duncil
Joy Phillips

Instructional Strategy & Student Engagement

Strategy 1

- A - Utilize SMART Boards, document cameras, digital content and other contemporary technology tools to improve the delivery of content.

- The purchase and installation of SMART Boards has been one of the major successes of the current technology plan. During the remaining years of this plan some SMART Board installations and purchases will be made in order to;
  - Provide SMART Boards for any additional classrooms and teachers which are added to our current staffing.
  - Replace non-SMART interactive boards which would
    - Facilitate servicing of this equipment through standardization
    - Replace aging interactive boards some of which are no longer supported by their manufacturers
  - Replacement of 48 inch SMART Boards which are currently being used in classrooms for which they are not appropriately sized. (2014-15 budget requests 25 replacement SMART Boards)
- The purchase and installation (mounting) of LCD projectors will be one of the major accomplishments of the current technology plan. All of the High Schools and Middle Schools and Chincoteague Elementary School have LCD projectors suspended from the ceilings as of school year 2013-2014. In completing this installation process in the mainland elementary schools
  - There will be no additional cost to the ACPS budget as these purchases are being budgeted from ongoing technology funding.
  - During the summer of 2013 LCD projectors were mounted in the ceiling of the fourth and fifth grade classrooms of the mainland elementary schools.
  - During the summer of 2014 LCD projectors will be mounted from the ceiling of all the mainland second and third grade classrooms
  - During the summer of 2015 LCD projectors will be mounted form the ceiling of all the mainland kindergarten and first grade classrooms.
- The middle and high school levels are currently moving toward making computing devices available to all students on an individual basis. During school year 2013-2014 a pilot program to study the feasibility of this initiative was implemented at Arcadia Middle School and Arcadia High School. Through the use of Chromebooks, the Chemistry classes at Arcadia and the Seventh Grade Science classes at Arcadia Middle School the following advantages are being realized;
  - Free online text books are being used by teachers and students. These are also downloadable so that students without Internet access at home are able to download them during class time and use them at home.
  - These textbooks are modifiable by the teachers on an ongoing basis. Teachers can add or subtract content to the text itself. The can also add outside resources.
  - Teachers can utilize cloud storage to make worksheets, assignments, etc. available to students.
  - Students can turn in work, presentations, etc. through cloud storage.

- Students are more engaged in the learning process than with traditional textbooks.

- For this pilot, Chromebooks were used. However, ACPS will continue to review other emerging technologies in order to choose the device best suited to our changing needs. Currently the advantages of Chromebooks include
  - They are the most cost effective individual computing devices available for our needs
  - Because they are cloud based they are not as subject to viruses and malware as other devices would be, thus minimizing the need for ACPS support staff to maintain and update these devices.
  - They are integrated with Google Apps and Google drive, thus giving student the opportunity to acquire 21st century skills in word processing, spreadsheets, databases, etc., without having to purchase these programs.
- If funds are available to continue the initiative toward individual computing devices for our students ACPS will spread this initiative in the following manner:
  - through the purchase of 500 Chromebooks for school year 2014-2015. These Chromebooks will be made available to all ACPS 7th grade students.
  - During school year 2015-2016 Chromebooks will be made available to all 7th and 8th grade ACPS students.
  - During the years following, individual computing devices will be made available to one additional grade level per year, beginning with the 9th grade and then spreading to the remainder of the high school grades. (If funds are available.)
- If it is determined that it is not feasible or wise to continue this initiative after school year 2013-2014, then the Chromebooks which were purchased for the pilot will used in the following manner
  - They will be placed in Nandua Middle School, Arcadia Middle School, and Chincoteague Middle school as classroom sets.
  - These sets will require the purchase of three additional carts to secure and charge the Chromebooks.
  - NMS and AMS will be issued 75 Chromebook each (two sets) and CMS will be issued 30 (one set.)
- By extending this usage of individual computing devices to other grade levels the aforementioned benefits should be realized throughout the secondary schools. In addition to the benefits mentioned above ACPS will also experience:
  - Higher SOL scores as a result of the increased student engagement.
  - Students more adept at higher order thinking skills and thus more prepared for college.
  - Students using Google Apps for Education in a collaborative way, thus learning to work as a member of a team, which is the number one job skill employers are looking for.
  - Students who having used more technology have increased technological ability and are better equipped for the 21st century workplace.
  - Cost savings as expensive textbooks for a number of subjects are replaced with free online textbooks.

- **B -** Utilize wireless technology carts and available high density equipment in learning activities that exponentially expands student engagement in the learning process.

- Given that the ACPS School Board has adopted reading, math, and science series at the elementary level that have technology components. Access to SMART Boards, LCD Projectors, document cameras, etc. are necessary for both teachers and students to fully benefit from the adopted programs. Utilizing the technology components of these programs increase student engagement and participation through songs, games, videos, movement, etc.

- The following approach will be taken to meet this critical need.
  - School carts of 20, 24 or 30 laptops will be assigned to grades 3, 4, and 5 to be used as needed to address instructional needs.
  - A budget request has been submitted to supply 5 laptops per core classroom in grades k, 1 and 2 which when combined with the 3 existing classroom computers will bring the total number of computers in these classrooms to a minimum of eight

C – Replace 6-7 year old inkjet printers with monochrome laser printers. Over the next two years we will need to replace our aging HP 6940 teacher inkjet printers. The middle school core classroom teachers have successfully used monochrome laser printers for the last eight (8) years. We will replace the high school teachers' inkjet printers with monochrome laser printers and use the old inkjets as spares until we replace the elementary schools with monochrome laser printers.

Subcommittee members:
Shaun O'Shea, Principal, Metompkin Elementary School
Amanda Hruska, Instructor, Nandua High School
Lawrence Blodgett, Instructional Technology Resource Teacher