Arlington Public Schools

2016-18 Addendum
to the
Arlington Public Schools Technology Plan for FY2012-16

http://www.apsva.us/informationservices

"Twenty- first century learning, and the technology that supports it, is a broad concept—actually, much too broad—requiring us to rethink every aspect of our education system. It demands more than teaching students to be problem solvers and effective collaborators. It entails tough, broader questions, like how do we make room for 21st century skills in the current curriculum? What, if anything, can we throw out and still ensure that students have the knowledge and skills they need to succeed? We must look critically at our pedagogy and how we can move to more active learning in student-centered classrooms. How can we build reliable, valid, and useful assessment systems that meet accountability needs and ensure that all children receive a customized education reflecting their personal learning styles, needs, and interests? Confined to the current school day, schools cannot guarantee students will acquire 21st century skills and knowledge; consequently, we need to reconceptualize school more generally as a place and time for learning."

– 2015-17 Addendum to the Educational Technology Plan for Virginia

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Executive Summary

The purpose and primary value of strategic planning is its power to involve people in a process leading to new understandings and insights about the challenges the Arlington Public Schools might confront in the future and how it should plan for those possibilities. The purpose of technology planning is to support the Strategic Plan through the lens of technology.

The APS Technology Plan establishes the overarching goals and strategies for the effective and efficient use of technology to improve student achievement and APS operations. The plan is aligned with both state and federal technology plans and reflects the anticipated technology trends for the next 6 years. The Addendum to the plan extends these goals for an additional two years while updating the strategies.

A strategic technology plan must remain flexible, agile and relevant in the dynamic technology environment and guide technology efforts at the district, school, office, and department levels. In order to maintain the needed agility in the presence of changing technologies the strategies APS Technology Plan are revised annually based on information in the Division's Department Plans.

The Departments of Instruction and Information Services coordinated in the development of the Arlington Public Schools (APS) Technology Plan and the Addendum to the plan. The full committee was comprised of members from all departments as well as school-based representatives.

In the development of the APS Technology Plan a detailed Needs Assessment was conducted resulting in 7 strands which have been woven through the plan: Agility, Decision-making with Use in Mind, Data, Individualized Experience, Training, Reliability and Utility.

The APS Technology Plan consists of six broad goals and is aligned and integrated with the APS Strategic Plan.

Goal 1:	Provide a safe, flexible, and effective learning environment for all students
Goal 2:	Engage students in meaningful curricular content through the purposeful and effective use of technology
Goal 3:	Afford students with opportunities to apply technology effectively to gain knowledge, develop skills, and create and distribute artifacts that reflect their understandings
Goal 4:	Provide students with access to authentic and appropriate tools to gain knowledge, develop skills, extend capabilities, and create and disseminate artifacts that demonstrate their understandings
Goal 5:	Use technology to support a culture of data-driven decision making that relies upon data to evaluate and improve teaching and learning
Goal 6:	Utilize technology to enable and optimize the work of business, support and instructional operations

Introduction to the 2016-18 Addendum to the Arlington Public School Technology Plan for FY2012-16

"Technology has become such an integral part of the education landscape that it is imperative that planning for technology integration is conducted in light of the overall goals and mission of education. Even in administrative functions, technology should always be focused on supporting the highest aspirations of our education system. At the same time, because technology permeates so much of what educators now do, it is important to plan very carefully and thoughtfully for the development and deployment of technology, and yet maintain flexibility and the ability to make time-sensitive decisions."

- 2015-17 Addendum to the Educational Technology Plan for Virginia

The 2016-18 Addendum to the Arlington Public Schools Technology Plan for FY2012-16 (Addendum) extends the current plan for two additional years. This extension will allow APS's technology planning cycle to lag by one year the Division's strategic planning cycle. This schedule will enable APS to create a new technology plan in during 2018 which is responsive to both the future APS Strategic Plan and the future Educational Technology Plan for Virginia.

The Addendum retains the goals and objectives from the Arlington Public Schools Technology Plan for FY2012-16, while updating the strategies and indicators. These goals and objectives from the Arlington Public Schools Technology Plan for FY2012-16 are the same goals and objectives which are in the Educational Technology Plan for Virginia: 2010-15. This approach ensures that the APS Technology Plan remains fully aligned with the Educational Technology Plan for Virginia while also being fully aligned with the APS Strategic Plan for 2011-17 and Division's department plans. The new state objectives, while of very high quality, are significantly different from the prior state objectives and adjusting the APS plan to these new objectives would entail more than extending the existing plan.

For each strategy there are one or more indicators. Some of the indicators are metrics; others are in the form of questions. These indicators may not all be gathered or reported; however they provide guidance on what the objective hopes to ultimately achieve.

Goal 1:

Provide a safe, flexible, and effective learning environment for all students.

Objective 1.1	Deliver appropriate and challenging curricula through face-to-face, blended, and virtual learning environments.
Strategy 1.1.1	Develop curriculum projects which: utilize blended and virtual learning environments and develop ICT literacy.
Indicator	Exemplary curriculum projects identified by DoI

Objective 1.2	Provide the technical and human infrastructure necessary to support real, blended, and virtual learning environments.
Strategy 1.2.1	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.
Indicator	Uptime of core services
Indicator	Student to device ratio
Strategy 1.2.2	Provide a full time ITC at all comprehensive schools and part time ITCs for programs.
Indicator	Percentage of comprehensive schools with full time ITCs
Strategy 1.2.3	Continue to meet the Virginia Standards of Quality for Technology Support Positions
Indicator	APS has one Technology Support Position for every 1000 students
Strategy 1.2.4	Establish a robust, scalable, sustainable network infrastructure designed to accommodate APS issued devices for all students and staff, personal devices, and the internet of things
Indicator	Uptime of core services
Indicator	Transition of phone and video services to IP delivery

Objective 1.3	Provide high-quality professional development to help educators create, maintain, and work in a variety of learner-centered environments.
Strategy 1.3.1	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Technology related professional development opportunities provided to teachers
Indicator	Percentage of comprehensive schools with full time ITCs

Goal 2:

Engage students in meaningful curricular content through the purposeful and effective use of technology.

Objective 2.1	Support innovative professional development practices that promote strategic growth for all educators and collaboration with other educators, content experts, and students.
Strategy 2.1.1	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Technology related professional development opportunities provided to teachers

Objective 2.2	Actualize the ability of technology to individualize learning and provide equitable opportunities for all learners.
Strategy 2.2.1	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.
Indicator	Personalized Learning Project target students and staff have been issued a device
Strategy 2.2.2	Leverage Connect 2 Compete, partnerships, ConnectArlington and other opportunities to ensure every student has broadband internet access at home.
Indicator	Students report they have broadband internet access at home

Objective 2.3	Facilitate the implementation of high-quality Internet safety programs in schools.
Strategy 2.3.1	Provide Internet Safety curriculum and professional development to teachers in all APS schools.
Indicator	Internet Safety curriculum is established
Indicator	Teacher participation in Internet Safety professional development
Strategy 2.3.2	Provide Digital Citizenship learning opportunities for families.
Indicator	Family participation in Digital Citizenship opportunities

Goal 3:

Afford students with opportunities to apply technology effectively to gain knowledge, develop skills, and create and distribute artifacts that reflect their understandings.

Objective 3.1:	Provide and support professional development that increases the capacity of teachers to design and facilitate meaningful learning experiences, thereby encouraging students to create, problem solve, communicate, collaborate, and use real-world skills by applying technology purposefully.
Strategy 3.1.1	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Technology related professional development opportunities provided to teachers
Strategy 3.1.2	Provide Extended Day staff with STEM professional learning
Indicator	Participation of Extended Day staff in STEM training

Objective 3.2	Ensure that students, teachers, and administrators are Information and Communications Technologies (ICT) literate.
Strategy 3.2.1	Develop curriculum projects which: utilize blended and virtual learning environments and develop Information and Communications Technologies (ICT) literacy.
Indicator	Shared lesson plans online

Objective 3.3	Implement technology-based formative assessments that produce further growth in content knowledge and skills development.
Strategy 3.3.1	Provide technology-based formative assessments that produce further growth in content knowledge and skills development.
Indicator	Assessments made using Interactive Achievement

Objective 3.4	Support instructional strategies and resources that assist in further bridging the achievement gap that exists among various groups of APS students.
Strategy 3.4.1	Develop curriculum projects which: utilize blended and virtual learning environments and develop Information and Communications Technologies (ICT) literacy.
Indicator	Shared lesson plans online
Strategy 3.4.2	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.
Indicator	Personalized Learning Project target students have been issued a device
Strategy 3.4.3	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Technology related professional development opportunities provided to teachers

Goal 4:
Provide students with access to authentic and appropriate tools to gain knowledge, develop skills, extend capabilities, and create and disseminate artifacts that demonstrate their understandings.

Objective 4.1	Provide resources and support to ensure that every student has access to a personal computing device.
Strategy 4.1.1	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.
Indicator	Personalized Learning Project target students have been issued a device
Strategy 4.1.2	Provide Grade 2-12 students with a personalized learning device
Indicator	Target students have been issued a device
Strategy 4.1.3	Establish a 'Laptop Loaner' program for students without devices at home
Indicator	All students report they have access to a device at home
Strategy 4.1.4	Establish a sustainable technology funding model accommodating Instructional program needs and student enrollment.
Indicator	APS budget reflects enrollment based technology funding
Indicator	APS budget reflects funding for specific Instructional program needs

Objective 4.2	Provide technical and pedagogical support to ensure that students, teachers, and administrators can effectively access and use technology tools.
Strategy 4.2.1	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.
Indicator	Personalized Learning Project target students have been issued a device
Strategy 4.2.2	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Technology related professional development opportunities provides to teachers
Strategy 4.2.3	Provide a full time ITC at all comprehensive schools and part time ITCs for programs.
Indicator	Percentage of comprehensive schools with full time ITCs
Strategy 4.2.4	Continue to meet the Virginia Standards of Quality for Technology Support Positions
Indicator	APS has one Technology Support Position for every 1000 students
Strategy 4.2.5	Create a comprehensive suite of online learning and collaboration tools.
Indicator	ITCs report that teacher needs for online learning and collaboration tools are met

Strategy 4.2.6	Establish Assistive Technology Resource positions according to the federal Individuals with Disabilities Education Act (IDEA) and the Regulations Governing Special Education Programs for Children with Disabilities in Virginia.
Indicator	Audit of positions reflects compliance regulations

Objective 4.3	Identify and disseminate information and resources that assist educators in selecting authentic and appropriate tools for all grade levels and curricular areas.
Strategy 4.3.1	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Percentage of comprehensive schools with full time ITCs
Indicator	Technology related professional development opportunities provides to teachers

Objective 4.4	Ensure that every student has access to an Internet connected personal computing devices during and outside of school hours.
Strategy 4.4.1	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.
Indicator	Personalized Learning Project target students have been issued a device
Strategy 4.4.2	Provide Grade 2-12 students with a personalized learning device
Indicator	Target students have been issued a device
Strategy 4.4.3	Establish a 'Laptop Loaner' program for students without devices
Indicator	Every student who reports they don't have a device at home is provided a device
Strategy 4.4.4	Leverage Connect 2 Compete, partnerships, ConnectArlington and other opportunities to ensure every student has broadband internet access at home.
Indicator	Students report they have broadband internet access at home

Goal 5:

Use technology to support a culture of data-driven decision making that relies upon data to evaluate and improve teaching and learning.

Objective 5.1	Use data to inform and adjust technical, pedagogical, and financial support.
Strategy 5.1.1	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Technology related professional development opportunities provides to teachers
Strategy 5.1.2	Develop an online RTI intervention monitoring solution
Indicator	Implementation according to project plan
Strategy 5.1.3	Establish Professional Learning Communities and Collaborative Learning Teams
Indicator	Implementation according to project plan
Strategy 5.1.4	Establish recurring school data analysis meetings with targeted schools (ELC and Data Quick Checks)
Indicator	Meetings according to schedule
Strategy 5.1.5	Upgrade the APS professional development tracking system to include all employees.
Indicator	All employee professional development is tracked in a system of record
Strategy 5.1.6	Implement new Synergy modules in support of the Digital Learning initiatives for various user groups
Indicator	Count of system enhancements

Objective 5.2	Provide support to help teachers disaggregate, interpret, and use data to plan, improve, and differentiate instruction.
Strategy 5.2.1	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.
Indicator	Technology related professional development opportunities provides to teachers
Strategy 5.2.2	Establish Professional Learning Communities and Collaborative Learning Teams
Indicator	Implementation according to project plan
Strategy 5.2.3	Provide Data Coaches to schools
Indicator	Coaches provided according to plan
Strategy 5.2.4	Establish a longitudinal data system with robust reporting
Indicator	Implementation according to project plan

Objective 5.3	Promote the use of technology to inform the design and implementation of next generation standardized assessments.
Strategy 5.3.1	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.
Indicator	
Strategy 5.3.2	Increase the use of Interactive Achievement to predict outcomes.
Indicator	Assessments made using Interactive Achievement
Strategy 5.3.3	Develop new or substantially revised tools to analyze SOL results by division, school and content area; identify strengths, areas for improvement.
Indicator	Schools and departments report satisfaction in the tools used to make data-based decisions

Goal 6:

Utilize technology to enable and optimize the work of business, support and instructional operations.

Objective 6.1	Develop and support technology solutions that improve the efficiency of Arlington Public Schools operations.
Strategy 6.1.1	Provide a flexible technology environment that may be personalized to the productivity needs and physical location of the user.
Indicator	Personalized Learning Project target students have been issued a device

Objective 6.2	Provide technology services that fit the purposes of Arlington Public Schools.
Strategy 6.2.1	Provide a flexible technology environment that may be personalized to the productivity needs and physical location of the user.
Indicator	Personalized Learning Project target students have been issued a device
Strategy 6.2.2	Continuously Improve technical services and solutions.
Indicator	Improvement cycles of technical services and solutions
Strategy 6.2.3	Revise APS Policies and PIPs to support sound acquisition, management and use of technologies.
Indicator	All technology related policies are revised

Objective 6.3	Ensure all technical services and solutions are reliable and fit for use.
Strategy 6.3.1	Continuously Improve technical services and solutions.
Indicator	Improvement cycles of technical services and solutions

Appendix 1
Timeline and Initiatives

Strategy		Fiscal Year				
		14	15	16	17	18
1.1.1 3.2.1 3.4.1	Develop curriculum projects which: utilize blended and virtual learning environments and develop Information and Communications Technologies (ICT) literacy.	✓	✓	✓	✓	✓
1.2.1 2.2.1 3.4.2 4.1.1 4.2.1 4.4.1 5.3.1 6.1.1 6.2.1	Provide a flexible technology environment that may be personalized to the learning needs and physical location of the user.	✓	✓	✓	✓	✓
1.2.2 4.2.3	Provide a full time ITC at all comprehensive schools and part time ITCs for programs.				✓	✓
1.2.3 4.2.4	Continue to meet the Virginia Standards of Quality for Technology Support Positions	✓	✓	✓	✓	✓
1.2.4	Establish a robust, scalable, sustainable network infrastructure designed to accommodate APS issued devices for all students and staff, personal devices, and the internet of things	✓	✓	✓	✓	✓
1.3.1 2.1.1 3.1.1 3.4.3 4.2.2 4.3.1 5.1.1 5.2.1	Provide differentiated professional development and training for educators and leaders on virtual learning environments, the meaningful uses of technology, and data driven decision making.	✓	✓	✓	✓	✓
2.2.2 4.4.4	Leverage Connect 2 Compete, partnerships, ConnectArlington and other opportunities to ensure every student has broadband internet access at home.			✓	✓	
2.3.1	Provide Internet Safety curriculum and professional development to teachers in all APS schools.	✓	✓	✓	✓	✓
2.3.2	Provide Digital Citizenship learning opportunities for families.			✓	✓	✓
3.1.2	Provide Extended Day staff with STEM professional learning			✓	✓	
3.3.1	Provide technology-based formative assessments that produce further growth in content knowledge and skills development.		✓	✓	✓	✓
4.1.2 4.4.2	Provide Grade 2-12 students with a personalized learning device		✓	✓	✓	✓
4.1.3 4.4.3	Establish a 'Laptop Loaner' program for students without devices at home	✓	✓	✓	✓	
4.1.4	Establish a sustainable technology funding model accommodating Instructional program needs and student enrollment.				✓	
4.2.5	Create a comprehensive suite of online learning and collaboration tools.				✓	
4.2.6	Establish Assistive Technology Resource positions according to the federal Individuals with Disabilities Education Act (IDEA) and the Regulations Governing Special Education Programs for Children with Disabilities in Virginia.				✓	
5.1.2	Develop an online RTI intervention monitoring solution			✓	✓	
5.1.3 5.2.2	Establish Professional Learning Communities and Collaborative Learning Teams		✓	✓	✓	✓

Appendix 1
Timeline and Initiatives

Strategy		Fiscal Year				
		14	15	16	17	18
5.1.4	Establish recurring school data analysis meetings with targeted schools (ELC and Data Quick Checks)			✓	✓	✓
5.1.5	Upgrade the APS professional development tracking system to include all employees.				✓	
5.1.6	Implement new Synergy modules in support of the Digital Learning initiatives for various user groups				✓	✓
5.2.3	Provide Data Coaches to schools			✓	✓	✓
5.2.4	Establish a longitudinal data system with robust reporting			✓	✓	✓
5.3.2	Increase the use of Interactive Achievement to predict outcomes.		✓	✓	✓	✓
5.3.3	Develop new or substantially revised tools to analyze SOL results by division, school and content area; identify strengths, areas for improvement.				✓	✓
6.2.2 6.3.1	Continuously Improve technical services and solutions.	✓	✓	✓	✓	✓
6.2.3	Revise APS Policies and PIPs to support sound acquisition, management and use of technologies.				✓	

Appendix 2
APS Mission, Vision, Core Values and Strategy Map

MISSION

Arlington Public Schools instills a love of learning in its students and prepares them to be responsible and productive global citizens.

VISION

Arlington Public Schools is a diverse and inclusive school community, committed to academic excellence and integrity. We provide instruction in a caring, safe and healthy learning environment, responsive to each student, in collaboration with families and the community.

CORE VALUES

Excellence Arlington Public Schools fosters excellence in our students and staff. Integrity We expect our students and staff to act in an honest, ethical and respectful manner.

Diversity We value all students, staff and families in our diverse, inclusive school community.

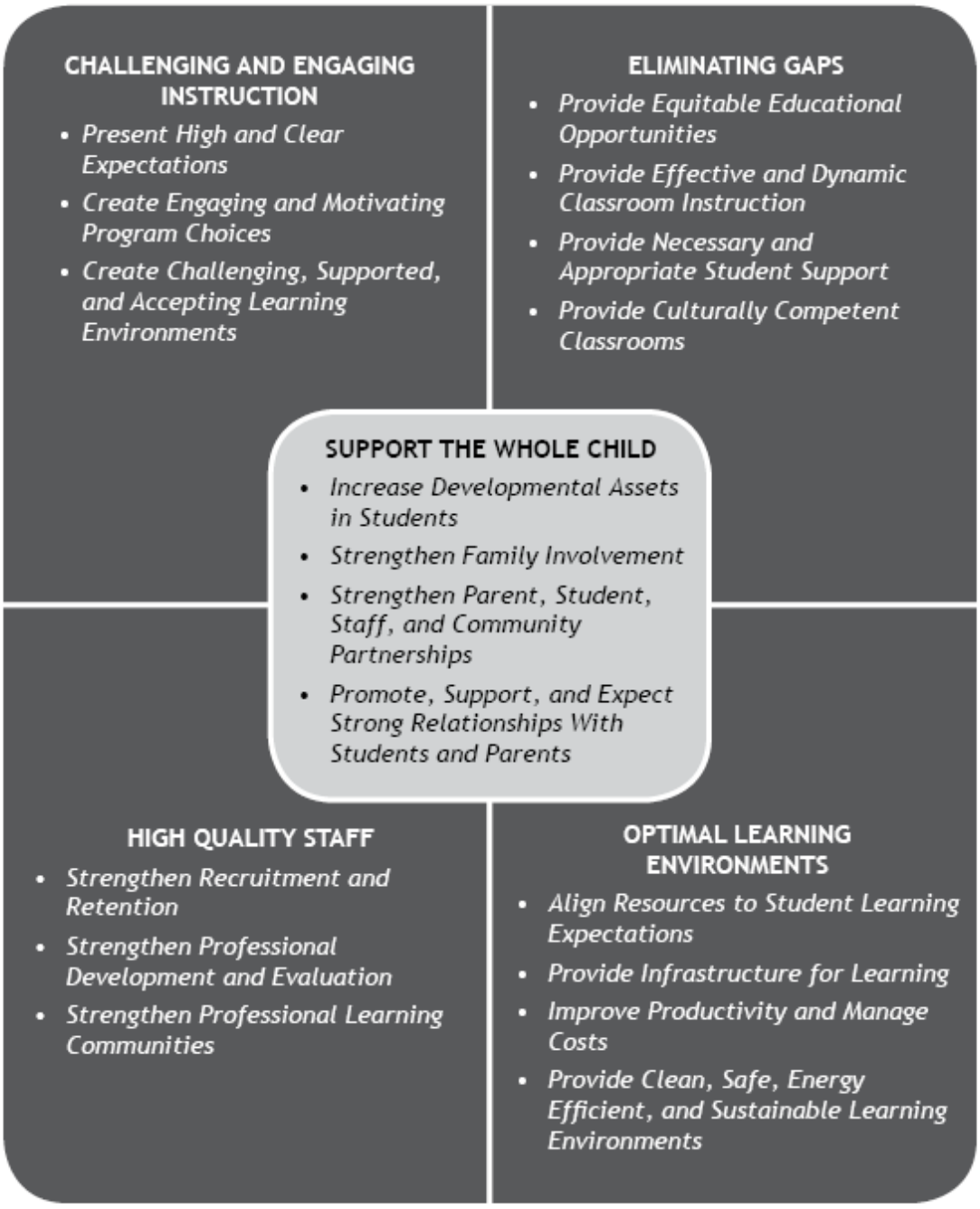
Collaboration We support relationships among students, staff, families and the community that ensure effective communication and promote opportunities to benefit our students.

Accountability We take responsibility for our progress through transparent evaluation of student success, staff quality and management of the community's resources.

Sustainability We practice stewardship of economic and environmental resources, meeting our current needs without compromising the ability of future generations to meet their needs.

Appendix 2
APS Mission, Vision, Core Values and Strategy Map

Arlington Public Schools Strategy Map



Appendix 3
Integration and Alignment of Plans

APS Technology Plan Goals	Alignment with Other Plans	
	Plan	**Alignment**
Goal 1: Provide a safe, flexible, and effective learning environment for all students	Educational Technology Plan for Virginia APS Strategic Plan National Educational Technology Plan	Goal 1 Goal 1,2,3 Goal 3,4
Goal 2: Engage students in meaningful curricular content through the purposeful and effective use of technology.	Educational Technology Plan for Virginia APS Strategic Plan National Educational Technology Plan	Goal 2 Goal 1,2,3 Goal 1,3
Goal 3: Afford students with opportunities to apply technology effectively to gain knowledge, develop skills, and create and distribute artifacts that reflect their understandings.	Educational Technology Plan for Virginia APS Strategic Plan National Educational Technology Plan	Goal 3 Goal 1,2,3 Goal 1,4
Goal 4: Provide students with access to authentic and appropriate tools to gain knowledge, develop skills, extend capabilities, and create and disseminate artifacts that demonstrate their understandings.	Educational Technology Plan for Virginia APS Strategic Plan National Educational Technology Plan	Goal 4 Goal 1,2,3 Goal 3,4
Goal 5: Use technology to support a culture of data-driven decision making that relies upon data to evaluate and improve teaching and learning.	Educational Technology Plan for Virginia APS Strategic Plan National Educational Technology Plan	Goal 5 Goal 1,2,3 Goal 2,3
Goal 6: Utilize technology to enable and optimize the work of business, support and instructional operations.	Educational Technology Plan for Virginia APS Strategic Plan National Educational Technology Plan	Goal 5 Goal 4 Goal 4,5

Appendix 4
Developing the 2016-18 Addendum to the APS Technology Plan for FY2012-16

Authoring the Addendum

The Division has migrated to an integrated planning model. The model starts with the APS Strategic Plan which provides overall direction to Division improvements. Departments and schools turn the Strategic Plan into action plans through the annual Department and School planning processes. Each of these processes result in plans which are fully aligned with the APS Strategic Plan where progress is measured using SMART Goals. The plans are adjusted quarterly.

APS considers technology a critical tool for student success therefore technology planning is incorporated into the comprehensive planning model. The strategies in the Addendum, which describe how APS will actualize the State goals and objectives, represent the key technology focused strategies which are in the APS Strategic Plan for 2011-17 and the 2015-16 Department Plans.

In the spring of 2014 APS formed the Digital Learning Steering Committee (DLSC) to provide ongoing technology planning for the Division. The DLSC oversees the intersection of technology and instruction for APS with an emphasis on the APS 1:1 project.

The committee, consisting of representatives from the Departments of Instruction, Student Services, and Information Services, principals, teachers, students and parents, works to support the mission of the committee. The DLSC performs this work by collaborating to:

- Establish high quality and differentiated professional learning opportunities to meet the needs of staff regardless of where they fall on the continuum of digital literacy.
- Identify of how personalized devices can be integrated into interactive classrooms to support and enhance best teaching practices.
- Provide feedback to departments on work in support of accomplishing the Strategic Plan objective of personalized devices for all students.
- Guide communications in support of the personalized device project.
- Propose needed policies.

The committee meets on the 1st and 3rd Monday of every month from 3:30-5:00.

The 2016-18 Addendum to the Technology Plan for FY2012-16 was compiled by the DLSC from the Department Plans, and feedback was given to departments for suggested additions as part of the quarterly Department Plan adjustments. In a way the 2016-18 Addendum to the Technology Plan for FY2012-16 becomes both a report and a guiding document. The Addendum reports on the Strategies and Indicators from the Department Plans, while providing guidance to the Department Plans through the Goals and Objectives. Progress on the plan will be reported through the Department Plans.

Appendix 4
Developing the 2016-18 Addendum to the APS Technology Plan for FY2012-16

DLSC Membership	
Bridget Loft	Principal, Swanson Middle School
Camilla Gagliolo	ITC, Jamestown Elementary School
Cathy Hix	Supervisor, Social Studies
Charles Randolph	ITC, Arlington Career Center
Dan Carroll	Teacher, Yorktown High School
Darryl Joyner	Instructional Media Integration Analyst
Donna Snyder	Director, Elementary Education
Joanne Uyeda	Principal, Abingdon Elementary School
Josh McLaughlin	Teacher, Barrett Elementary School
Kathleen Meagher	Director, Secondary Education
Kelly Krug	ATSS Supervisor
Kerri Hirsch	Teacher Evaluation Specialist
Lauren Bonnet	Assistive Technology Coordinator
Mark Lincoln	Parent & Liaison to the Superintendent's Advisory Committee on Technology
Matt Hubbart	Teacher Specialist, Science
Matt Smith	Special Projects Coordinator
Mike Goodman	ITC, Kenmore Middle School
Pat Teske	Director, Instructional and Innovative Technologies
Sue Sarber	Supervisor, Professional Development
Terance Proctor	Director, Service Support Center
Theresa Adkins	Interim Supervisor, Minority Achievement

Appendix 5
Developing the APS Technology Plan for FY2012-16

Arlington Public Schools Technology Plan for FY2012-16

- Planning Committee -

The Departments of Instruction and Information Services coordinated in the development of the Arlington Public Schools (APS) Strategic Technology Plan. The full committee was comprised of members from all Departments as well as school based representatives. Two subcommittees were formed from both inside and outside the full committee.

APS Strategic Technology Plan Full Committee

Co-chair: Matt Smith, Special Projects Coordinator, Information Services
Co-chair: Mark Macekura, Supervisor, Research, Program Planning, and Grants

Alison Denton, Facilities Planner, Facilities and Operations
Ashey Deljo, Technology Support Specialist, Student Services
Charlie Makela, Supervisor - Library Media Services, Instruction
Dana Smith, Supervisor - User Support Group, Information Services
Diane Hellmuth, Assistant Director - Technology Services, Information Services
Garish Rajput, Developer - Enterprise Solutions, Information Services
Jeannine Richardson, Instructional Media Integration Coordinator, Instruction
Julie Adlam, Director - Technology Services, Information Services
Kris Martini, Director - Career, Adult and Technical Education, Instruction
Leslie Peterson, Budget Director, Finance
Linda Erdos, Assistant Superintendent - School and Community Relations
Natalie Porter, Technology Support Specialist, Student Services
Pat Teske, Supervisor - Instructional & Innovative Technologies, Instruction
Patrick Tien, Human Resource Information Specialist, Personnel
Phyllis Gandy, Supervisor - Business & Information Technology, Instruction
Raj Adusumilli, Director - Enterprise Solutions, Information Services
Rob Hindman, Principal - Taylor Elementary School
Sue Sarber, Supervisor - Professional Development, Instruction
Suzanne Raber, Director - Planning and Evaluation, Information Services
Singh Ajrawat, Supervisor - Telecommunications, Information Services
Dave McBride, Assistant Principal, Kenmore Middle School

Needs Assessment Subcommittee

Matt Smith, Facilitator
Chris Brown, Network Architect - Information Services
Heather Hurley, Instructional Technology Coordinator - Arlington Traditional School

Appendix 5
Developing the APS Technology Plan for FY2012-16

Dana Smith, Supervisor - User Support Group, Information Services
Tom Windsor, Instructional Technology Coordinator - Wakefield High School

Goals and Objectives Subcommittee

Matt Smith, Facilitator
Chris Brown, Network Architect - Information Services
Alison Denton, Facilities Planner, Facilities and Operations
Heather Hurley, Instructional Technology Coordinator - Arlington Traditional School
Charlie Makela, Supervisor - Library Media Services, Instruction
Garish Rajput, Developer - Enterprise Solutions, Information Services
Jeannine Richardson, Instructional Media Integration Coordinator, Instruction
Dana Smith, Supervisor - User Support Group, Information Services
Tom Windsor, Instructional Technology Coordinator - Wakefield High School
Ena Wood, Instructional Technology Coordinator - Taylor Elementary School

Appendix 5
Developing the APS Technology Plan for FY2012-16

Arlington Public Schools Technology Plan for FY2012-16

- The Planning Process -

The Strategic Technology Plan full committee met regularly from June - October 2010 via Blackboard. By conducting work though a blended environment the committee improved flexibility and modeled the goals put forward in the technology plan. Two subcommittees, one for conducting the Needs Assessment and the other for forming the Goals and Objectives, also met both in person and via Blackboard.

The Needs Assessment Subcommittee, consisting of members from the Departments of Instruction and Information Services, conducted the complete needs analysis for the Technology Plan (see section on the Summary of Needs Assessment). The subcommittee met via Blackboard during July 2010 with an in person meeting on July 8, 2010. Upon completion of the Needs Assessment the committee reported the results to the full committee for review. After a period for discussion and modification from the Full Committee via Blackboard, the Goals and Objectives Subcommittee, consisting of members from the Departments of Instruction, Facilities & Operations, and Information Services, drafted the Goals, Objectives, Strategies, and Indicators. Like the Needs Assessment subcommittee the group met via Blackboard from July - September of 2010 with in person meetings on July 20, 27 and September 16th. Again the committee reported its draft to the full committee for review and comment.

The Co-chairs compiled the a draft of the complete plan and solicited feedback from the full committee, Instructional Technology Coordinators, school administrators, and members of the school system as a whole including students and teachers. The draft plan was placed on the APS web site from November 3-17, 2010 and the public was invited to comment and share their suggestions. The final plan was then presented to the School Board on December 2, 2010 and submitted to the Virginia Department of Education (VDOE). The plan will be reviewed and updated annually through the Annual Technology Plan process (see next section on Evaluation and Updates).

Appendix 6
Summary of Needs Assessment

Arlington Public Schools Technology Plan for FY2012-16

- Summary of Needs Assessment -

APS conducted the Needs Assessment for the Strategic Technology Plan through three mechanisms:

- an online survey focused on the delivery of technology services
- focus groups discussing "Six Essential Questions" about technology priorities and services
- literature reviews conducted by members of the Needs Assessment Committee.

Arlington Public Schools conducted the Needs Assessment by reviewing the technology services available to students and staff. A service is defined as ***"a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific cost and risks."*** [ITIL Glossary, Service Strategy pg. 249]. Services include the tools, training, and systems that facilitate the outcomes of teaching and learning in our schools. All services should be helpful, useful, and as transparent as possible to teachers, students and staff.

Within this context, APS focused the Needs Assessment on the user of those services. How do the services assist them in doing their work, what kinds of services or what changes to services would make it easier for them to do their work or would help them do their work better?

The APS Strategic Technology Plan is intended to be an overarching context for local school and departmental technology plans. The questions posed in the Needs Assessment stimulated reflection and discussion of technology planning at the local level as well as informing planning at the district level. The results were connected and useful to the locations where they were collected as well as aggregated into a larger context for the school district as a whole.

The Needs Assessment survey and focus groups were distributed centrally and implemented locally. Individuals were identified as local representatives to bring the assessment tools back to their schools, departments or groups. How they implemented the tools was at their discretion and appropriate to the nature of the group surveyed. Through this model every member of the APS community had an opportunity to contribute to the Needs Assessment. This model solicited local perspective on needs and provided for local ownership of the results that were returned.

Online Survey

Appendix 6
Summary of Needs Assessment

The online Strategic Technology Plan Questionnaire survey solicited feedback about current technology services focusing on the concepts of usefulness, accessibility, reliability and availability. These are components that provide "value" to the customer. The definition of a service states that it must provide value to the customer.

The survey was available online and all staff members of APS were invited to complete the survey. Over 350 APS staff completed the survey including respondents from all pay scales, schools, and offices.

As a departure from previous work in APS, the survey focused on the types of services provided instead of on who provided the service. For example, there are several groups within APS who provide training and professional development and a teacher or a school secretary might be trained by different groups. Hence, the value of the training is more important for the needs assessment than feedback about the group that conducted the training. However, in keeping with the intention of stimulating both local and district-wide planning, the survey was constructed so that data could be disaggregated out to inform the planning of the individual groups.

The survey asked the following 6 standard questions about each category of services and used a five point Likert scale with a sixth option of Don't Know/NA.

- _____ Services are essential for me to perform my job functions.
- _____ Services are useful and helpful for me in performing my job functions.
- I have access to the _____ Services I need to perform my job functions.
- _____ Services are reliable.
- _____ Services are available when and where I need them.
- Open ended response option

The online survey focused on the delivery of the following categories of services:

- **Business Systems Services** - Business Systems are large software applications which support multiple operations within APS. Examples of Business Systems include eSchoolPlus, STARS, IEPonline, ERO and APSnet. (Does not include Reporting)

- **Desktop Systems Services** - Desktop Systems are computers and laptops. (Does not include software such as Word and Internet Explorer.)

- **Communications Services** - Communications Services provide APS with electronic communications and scheduling services. Examples of Communications Services include Groupwise, APSMail, telephone, cell phone and Blackberry.

Appendix 6
Summary of Needs Assessment

- **Electronics Services** - Electronics are hardware devices and peripherals, many of which connect to computers. Examples of Electronics include cameras, SmartBoards, video cameras, televisions and printers.

- **Instructional Technology Services** - Instructional Technology Services support teaching and learning with technology. Examples of Instructional Technology include Blackboard, remediation and intervention software, Distance Learning and assistive technologies. (Does not include general productivity software such as Word and Internet Explorer.)

- **Network Systems Services** - Network Systems are the core infrastructure which allow technology systems to communicate and function. Examples of Network Systems include wired and wireless connectivity, home directories, shared directories, backup and retrieval services and Internet access.

- **Production Services** - Production Services support the creation of materials and media. Examples of Production Services include video production, materials production and duplication.

- **Reporting Services** - Reporting is retrieving data from various systems and making it available for documentation and decision making. Examples of Reporting includes state reporting, eSchoolPlus reports, STARS reports and GotData (Access).

- **Software Services** - Software Services are the delivery of various productivity software titles to the computers. Examples of productivity software include Microsoft Word, Internet Explorer and Adobe Reader.

- **Support Services** - Support Services are the responses you receive when you ask for assistance. Examples of Support Services include the Service Support Center, informal 'how-to' training, hardware repair and answering technology questions.

- **Training and Professional Development Services** - Training Services and Professional Development Services are formal training sessions which provide information on how to use technology for productivity and instruction. Examples of Training Services and Professional Development Services include eSchoolPlus training, Blackboard training, STARS training, Discovery Streaming training, SMART Notebook training, training on other productivity and instructional applications, and consultation in technology use and integration.

- **Video Services** - Video Services support video applications and infrastructure. Examples of Video Services include APS cable TV, TV channels, mini-production studios, special event setup and School Board setup, engineering, video broadcasts, and streaming video on the Internet.

Appendix 6
Summary of Needs Assessment

Focus Groups

The APS community was asked "Six Essential Questions". The questions were discussed in small, pre-existing groups in schools, and departments. A few teachers and support staff members chose to reply to the questions individually. The focus group questions focused on how technology services can facilitate the outcomes for the customers. The definition of a service states that it must facilitate the outcome that the customers want to achieve.

The questions were:

- What should be our Technology priorities for the next 6 years?
- What do we need to do in order to achieve these priorities?
- What do we want to do that we are not currently doing?
- What are we currently doing that we should stop doing?
- What do we do well?
- What needs improvement?

Twenty-six groups responded to the questions, representing a wide variety of perspectives. Responding groups included: advisory groups (Student Advisory Board, Instructional Lead Teachers), school Technology Committees, school teams, secondary school departments, and departments and offices. Several of the groups used the exercise as a starting point for writing local technology and office plans proving the value of the activity beyond a one time exercise.

Group	Date
Arlington Traditional School	6/29/2010
Career Center	7/1/2010
Drew Elementary School	7/1/2010
Enterprise Solutions (Information Services)	6/30/2010
Facilities and Operations	6/30/2010
Gunston Middle School - Gecko Team	6/14/2010
Instructional Lead Teachers	6/15/2010
Instructional Technology Coordinators	6/30/2010
Jamestown Elementary School	6/28/2010
Key Immersion School	6/7/2010 - 6/23/2010 (online)
Library Media Services	6/25/2010
McKinley Elementary School	6/23/2010
Oakridge Elementary School	6/9/2010
Student Advisory Board	5/6/2010
Taylor Elementary School	6/5/2010
Technology Services (Information Services)	7/1/2010
User Support Group (Information Services)	6/10/2010
Washington-Lee High School	6/17/2010

Appendix 6
Summary of Needs Assessment

Yorktown English Department	6/30/2010
Yorktown Social Studies Department	6/30/2010

* Individuals who responded were included in the analysis but are not listed.

Needs Assessment Committee Literature Review

A committee was formed to oversee the implementation of the Needs Assessment mechanisms and to aggregate and analyze the resulting data. In preparation, committee members reviewed the Virginia and Federal Technology Plans, as well as other local technology plans. Members listened to TED talks and researched ICT Literacy. One committee member is part of VETAC and provided perspectives from that body. Several members of the committee hold ITIL certifications and brought with them insights from those technology management best practices.

Needs Assessment Data Analysis

The Needs Assessment committee reviewed the results from the online survey and the responses to the six essential questions and established a list of recurring elements and themes. The recurring themes were consistent across both the responses from the focus groups and the online survey.

Upon analysis seven primary needs emerged from these themes. The needs reflect the elements of value to the customer as well as components needed to facilitate teaching and learning outcomes for our customers.

- **Agility –** the need for the services to be current, responsive and flexible
- **Decision-making with Use in Mind** – the need for the services to be implemented to support the outcomes of the customer
- **Data** – the need for data to be available and useful for data driven decisions
- **Individualized Experience –** the need for services to be available no matter the location or needs of the customer
- **Training** – the need for training and professional development services to support the outcomes of the customers
- **Reliability** – the need for services be reliable
- **Utility** – the need for services to be fit for purpose

Appendix 6
Summary of Needs Assessment

The seven primary needs with exemplary themes (not listed in this document) were passed to the Goals committee to inform the development of goals, objectives, strategies and indicators in the plan.

Appendix 7
Evaluation and Updates

- Evaluation and Updates -

A multi-year technology plan must be strategic in nature. A directive plan that is focused on specific needs of 2010 cannot predict the kinds of technologies and learning tools that will be available in 2014. One that is extended to 2016 may border on irrelevancy. A technology plan must remain flexible, agile and relevant in the dynamic technology environment and guide technology efforts at the district, school, office, and department levels. In order to ensure ongoing relevancy the 2016-18 Addendum to the APS Technology Plan for FY2012-16 is integrated into the broader Division planning process.

APS Strategic Plan:

- 6 year goals
- Annual reporting
- Annual 'tuning'

APS Department and School Plans

- 1-3 year goals
- Annual reporting
- Quarterly 'tuning'

APS Technology Plan

- 6 year goals (as set by the State of Virginia)
- Annual reporting through the Department Plans
- Annually 'tuning' through the Department Planning process

The 2016-18 Addendum to the APS Technology Plan for FY2012-16 will be updated each fall in alignment with the APS Department Planning process. Departments will review the 2016-18 Addendum to the APS Technology Plan for FY2012-16 when authoring the plans, while the 2016-18 Addendum to the APS Technology Plan for FY2012-16 will be updated based on changing needs reflected in the Department Plans.

Appendix 8
Internet Safety

Arlington Public Schools has developed a multi-faceted approach to address Internet Safety. Librarians, Instructional Technology Coordinators (ITCs), Health and Physical Education teachers, Guidance Counselors and Resource Officers have collaborated to identify specific areas of Internet Safety that they will include in their work with students and teachers. In general the primary responsibility for instruction in grades K-8 remains with the librarian, at grades 9-12 the program is integrated into Family Life, Health Education, and Business Education. In some schools it is included as part of the Freshman orientation. Additionally the librarian and the ITC participate in integrating Internet Safety as appropriate. Posters and reminders are posted in area where students use computers.

Schools provide opportunities and information to parents about Internet Safety via PTA meetings and newsletters. Information is distributed to parents concerning how to use the free tools included by the local Internet Service Providers to install security measures on home computers.

Opportunities for becoming i-SAFE certified have been provided to all staff and additional information regarding other resources for classroom integration has been disseminated. A Blackboard course in integrating Internet Safety was offered. All librarians, ITC, and health and physical education teachers are i-SAFE certified.

APS has deployed an Internet Filter, included it's Acceptable Use Policy in the Student Handbook and in April of 2008 adopted a Policy on Cyber Bulling.

Appendix 9
Division Acceptable Use Policy

PROCEDURES AND GUIDELINES

Acceptable Use of Electronic Networked Resources & Internet Safety

Arlington Public Schools (APS) expects all users to access the Internet and other electronic networked resources in a safe and responsible manner. All users are required to abide by the Acceptable Use of Electronic Networked Resources & Internet Safety (Policy 45-2) and the Policy Implementation Procedure (45-2). All uses of the Internet and networked resources shall be appropriate for a Pre-K-12 education setting.

Acceptable Use Guidelines

Acceptable use includes, but is not limited to the following guidelines:

1. Use school facilities and electronic resources for school-related instructional and APS business activities. This includes but is not limited to the use of the Internet, e-mail, instant messaging, chat rooms, Web pages, local school and county networks, and other electronic and online resources. Occasional negligible personal use of school computers by employees is permissible but may be subject to further restriction by appropriate school personnel.

2. In recognition of the need for efficient use of employee time and division resources, APS permits occasional use of division equipment, including computers, electronic mail, and other electronic services, provided that such use:
    a. incurs only a negligible additional expense to APS;
    b. does not impede that employee's or other employees' ability to do their jobs;
    c. occurs during off-duty hours, whenever possible; and
    d. is not for the purpose of generating income for the employee or another.

    Under no circumstances may an employee use APS equipment to engage in any activity that is illegal or otherwise expressly prohibited, for example, political activity or lobbying activity prohibited by law.

3. APS students and employees are required to use only the network and Internet access provided by, and filtered by, APS when using APS owned equipment while on school property.

4. Do not tamper with, copy, or download files including freeware or adware without authorization.

5. Recognize and respect the intellectual property of others. Adhere to all Federal copyright laws and vendor licensing agreements, and do not use the Internet to send or download copyrighted materials. All users shall provide proper attribution to sources of work obtained, in whole or in part, from the Internet and, where appropriate, obtain permission to use the work of others.

6. Install only software licensed to Arlington Public Schools for use on its computer systems

7. Respect the integrity of the network system. Enter only authorized systems and do not attempt to circumvent or subvert system security measures including circumventing the APS firewall. Do not tamper or alter the system in such a way that would disrupt the network.

8. Do not use the Internet to "hack" or gain unauthorized access to other computers, networks, or information systems.

9. Report all suspected computer viruses and other problems immediately so that action can be taken and damage minimized.

10. Do not create or upload a worm, virus, or other harmful or destructive form of programming or software.

11. Use equipment responsibly. Do not damage hardware, electronic systems, or networks.

12. Conserve resources including but not limited to file/e-mail storage space, bandwidth, online time, toner, and paper.

13. Do not connect any non-school-division-owned device to any part of the APS network without authorization. Storage devices (e.g., memory sticks, digital cameras) used for instructional purposes are an exception.

14. Understand that any messages or files sent, accessed, or received on APS equipment are subject to inspection.

15. Do not view, sell or purchase merchandise for personal financial gain or operate a business utilizing APS electronic resources (exception: APS authorized publications).

16. Comply with the provisions contained elsewhere in Section 45, Technology, including E-mail Etiquette, and contained in Section 35, Personnel.

Internet Safety Guidelines

1. Protect privacy and safety by not disclosing such personal information as telephone numbers, addresses or passwords. Students should be careful not to disclose information that could lead to the inadvertent discovery of their identity, such as their school name or location.

2. Use only assigned usernames and/or passwords. The use of others' usernames and/or passwords is forbidden.

3. Do not disable filtering software or other technologies.

4. Be courteous and use appropriate language. Do not harass or attack others, or use expressions of or engage in discrimination, retaliation, bigotry, racism and/or hate.

5. Do not view, send, display, or use profanity, obscenities, sexually explicit, or offensive materials.

6. Students are advised to never meet anyone who they have met only via the Internet.

7. Report any pornographic or offensive materials on or accessible from school-owned equipment.

8. Immediately report any incidents of cyber bullying such as personal attacks and threats to you, others or to school property. Retain copies of any threatening content or messages to provide to school authorities and/or law enforcement, if appropriate.

9. Do not use APS computer equipment and communication services for sending, receiving, viewing or downloading illegal, inappropriate or obscene material via the Internet.

Filtering Process

Arlington Public Schools recognizes that users may encounter materials that could be viewed as inappropriate and non-educational. Therefore, provisions have been made to direct and monitor student use through the use of filtering software. The Filtering Committee, consisting of APS technical and instructional staff and chaired by the supervisor, Library Media Services, determines which categories of Internet sites as delineated within the software are to be blocked based on input from school, library and central office staff and compliance with the Children's Internet Protection Act (CIPA) and the Code of Virginia. Network and Infrastructure Services manages the filtering software.

- Requests to block or unblock additional categories or specific sites are made by the requesting staff member through the building or program administrator to the supervisor of Library Media Services. All requests to un-block a site must include both an explanation of the instructional need of the material within the site and the grade level access that is requested. Appeals of denied requests are made to the Assistant Superintendent of Instruction.

However, it continues to be the responsibility of the individual user not to initiate access to inappropriate material. If such material is encountered, the user is expected to exit immediately and notify the teacher or the supervisor of Library Media Services of the inappropriate material and how it was accessed.

Consequences for Inappropriate or Illegal Use of Electronic Networked Resources

Anyone found to have engaged in illegal, unauthorized, inappropriate or unethical practices related to Acceptable Use of Electronic Networked Resources & Internet Safety policy will be subject to disciplinary action that could result in denial of system access, suspension, termination of employment and/or criminal prosecution.

Areas of Responsibility

1. The Assistant Superintendent of Information Services is responsible for the system-wide implementation, review, and evaluation of these procedures. Principals and program managers are responsible for their implementation at the school or program level.

Appendix 9
Division Acceptable Use Policy

2. Administrators are responsible for informing staff members of the Acceptable Use of Electronic Networked Resources & Internet Safety policy and providing each staff member with a copy.

3. School staffs are responsible for informing students and their parents of the Acceptable Use of Electronic Networked Resources & Information Services policy and the consequences resulting from not adhering to both.

4. All technology users are responsible for reviewing and abiding by the Acceptable Use of Electronic Networked Resources & Internet Safety policy.

5. Teachers, library media specialists and instructional technology coordinators (ITCs) are responsible for providing Internet safety instruction, guidance, monitoring student use of APS electronic resources, and reporting all violations to school administration.

6. Instructional staff members are responsible for identifying, reviewing, and evaluating the most appropriate resources that comply with School Board policy Internet safety as it applies to the content area.

7. Students are responsible for contacting a teacher, school administrator or parent if they encounter situations that are offensive or threatening while using electronic resources.

8. Teachers are responsible for posting the rules for safe Internet use (i.e., Acceptable Use Guidelines) and reminding students that the rules were created for their protection.

9. APS is responsible for providing teachers with opportunities to learn about Internet-related personal safety, cyber security, cyber bullying, malicious codes and viruses, and copyright ethics.

10. Authorized Arlington Public School personnel may review files and communication to maintain system integrity. All users should assume that electronic communications and storage are not private, permanent, nor necessarily secure.

11. Parents and community stakeholders are responsible for reviewing and recommending ongoing revisions to the APS Internet Safety Program.

12. APS is not responsible for student or staff use of electronic technology resources outside of school. However, staff or students may be disciplined for any technology use that negatively affects the APS or that negatively affects the ability or fitness of any staff person to effectively serve the school division.

13. The use of computer equipment and communication services, technology and the Internet by school personnel shall represent the school/program favorably in the school and in the community and must model appropriate usage for the student population.

14. All stakeholders are responsible for monitoring and/or evaluating emerging technologies and recommending revisions to the APS Internet safety program.

Appendix 9
Division Acceptable Use Policy

Reference:
Code of Virginia 18.2-374.1:1
Code of Virginia 18.2-390 (2)-(5)
Code of Virginia 18.2-372
Code of Virginia 22.1-70.2 Chapter 52
Code of Virginia 22.1-315
APS Policy 35-4.9
APS Policy 45-2
APS Policy Implementation Procedure 45-2.1
APS Policy Implementation Procedure 45-5

Last Amended: 7/6/2007

Appendix 10
Computer and Technology Standards

The following is an excerpt from the 2015-17 Addendum to the Educational Technology Plan for Virginia: 2010-2015 (pp16-17)

Computer and Technology Standards

Technology will play a key role in the teaching and development of 21st century skills and knowledge. The International Society for Technology in Education (ISTE) released the initial National Educational Technology Standards for Students (NETS*S) in 1998. In response, the Commonwealth of Virginia incorporated these standards into the Standards of Learning (SOL) and revised the computer technology SOL in 2005 to reflect 21st century skills.

In 2007, ISTE updated the NETS*S to recognize the importance of the following 21st century factors:

- Creativity and innovation
- Communication and collaboration
- Research and information fluency
- Critical thinking, problem solving, and decision making
- Digital citizenship
- Technology operations and concepts

While some of these skills may be taught without technology, others are dependent on technology. Even the skills not dependent on technology are strengthened and enhanced when appropriate technology is used effectively and modeled on research-based best practices.

Core-content knowledge is necessary, but not solely sufficient, to succeed in a competitive world. Even if all students mastered core academic subjects, they still would be woefully underprepared to succeed in postsecondary institutions and workplaces, which increasingly value people who use knowledge to communicate, collaborate, analyze, create, innovate, and problem-solve. Used comprehensively, technology helps students develop 21st century skills (Partnership for 21st Century Skills, 2007). Research (Dede, 2007) and practical experience show that students develop 21st century skills most effectively when teachers combine situated learning and effective ICT literacy.

In 2008, ISTE updated the National Educational Technology Standards and Performance Indicators for Teachers (NETS*T) based on the philosophy that teachers should model effective technology use. The NETS*T require teachers to meet specific standards and performance indicators:

- Facilitate and inspire student learning and creativity
- Design and develop digital-age learning experiences and assessments
- Model digital-age work and learning
- Promote and model digital citizenship and responsibility
- Engage in professional growth and leadership

The ISTE National Educational Technology Standards for Administrators (NETS*A) were updated and released in June 2009. These new standards also incorporate more aspects of 21st century learning and teaching, just as the refreshed NETS*S and NETS*T have done. They still focus, however, on the leadership and oversight roles of administrators, though an emphasis on systemic transformation through technology expands the administrative vision. Specifically, the NETS*A articulate standards and performance indicators around the following:

Appendix 10
Computer and Technology Standards

- Visionary leadership
- Digital-age learning culture
- Excellence in professional practice
- Systemic improvement
- Digital citizenship

Appendix 11
Essential Elements of ICT Literacy

The following is an excerpt from the 2015-17 Addendum to the Educational Technology Plan for Virginia: 2010-2015 (Appendix A)

Essential Elements of ICT Literacy

What Students need to Know about ICT Literacy

Choose appropriate technologies to complete particular tasks and learn new technologies when needed:

- Become familiar with the strengths and weaknesses of various technologies for supporting different tasks (e.g., writing, research, presentations, creating artwork).
- Have a working knowledge of locally available technologies.
- When completing educational tasks, consider which technologies may help and use those that are available.
- Incorporate appropriate new technologies as they become available.

Use technologies to develop strong thinking skills and extend capabilities:

- Use built-in assessments, or self-assessment tools, to increase skills and understanding of their learning processes (metacognition).
- Effectively and rapidly evaluate information to make decisions.
- Approach authentic tasks with flexibility and persistence; adapt technologies to make them useful.
- Use technology to seek out diverse perspectives and develop multiple solutions.

Use technologies ethically and safely:

- Comply with current copyright laws.
- Use borrowed technology with respect and care.
- Never use technology to bully, coerce, or harass any other person; be accountable for conduct when using technology.
- Be aware of safety issues related to all technologies, but specifically communication technologies.
- Follow the division's current guidelines for ethics and safety (identified in each division's acceptable use policy).

Understand the nature of information in a global world and the characteristics of various media:

- Become informed about other cultures so all global communication can be made respectfully.
- Recognize when information is needed and determine where to locate the appropriate information.
- Evaluate information based on accuracy, relevance to a task or question, and appropriateness.
- Be aware of the strengths and weaknesses of various types of media and how media (including one's own creations) can influence people.
- Be able to deconstruct and construct media messages.

Use technologies to facilitate collaboration and teamwork:

- Show respect and care for others at all times, even when technology makes them seem not real.
- Actively pursue collaborations with both local community members and people in other communities.
- Be flexible in taking different roles (e.g., leader/follower, orator/listener) on teams as the situations require.

Appendix 11
Essential Elements of ICT Literacy

What Parents, Grandparents, and Caregivers need to Know about ICT Literacy

Technology is just one tool for learning:

- Children should not learn everything through technology; there must be time for real-life play, activity, and interaction.
- Time spent with technology should be limited in a child's earliest years, with increasing use allowed as the child matures.
- Participate in technology interactions with young children, allowing more and more autonomy as the child matures and learns norms of behavior.

Technology, by itself, is neutral but can be used for both good and bad things:

- Provide good role models for acceptable behavior and respect for others.
- Learn how to identify safety or ethical problems encountered by children and have a plan for handling these issues before they arise.
- The content of some media is objectionable. Establish rules about what is acceptable. Ratings systems are not reliable indicators.
- Be aware of state and federal laws governing technology and its misuse and communicate problems with school personnel.

Children may be more conversant with technology than their parents, but parents have more practical experience in real-life situations:

- Help children understand that all media messages are constructed and promote deconstruction and construction of media messages.
- Help children learn how to evaluate the motives of various media messages.
- Be aware of the strengths and weaknesses of various media and point these out to children as situations arise.

Good thinking skills enable students to use technology as a powerful learning tool:

- Help students learn how to think critically and creatively.
- Support student collaboration and teamwork.
- Encourage persistence and flexibility in problem-solving tasks.

Appendix 11
Essential Elements of ICT Literacy

What Teachers, Instructional Technology Resource Teachers, and Library Media Specialists need to Know about ICT Literacy

Technology is best used to support curricular goals:

- Make students aware about which types of technologies are available for their use in school and which of their own technologies may be used for schoolwork.
- Engage in professional development to learn how to use available technologies in their own instructional and day-to-day activities.
- Assign authentic tasks that use authentic technology to prepare students for working effectively and living responsibly in the 21st century.

Responsible use of technology must be taught and emphasized during regular school work:

- Be thoroughly familiar with the division's acceptable use policy and ensure students are also.
- Teach technology ethics and safety continuously, both in school and in other areas of students' lives.
- Be good role models for acceptable behavior.
- Learn how to identify ethical or safety errors and know the procedures for addressing these situations before they arise.

Use technologies to develop strong thinking skills and extend capabilities:

- Model critical-thinking and evaluation skills for students.
- Use built-in assessments, or self-assessment tools, to monitor one's own thinking strategies and to increase skills.
- Provide opportunities for students to evaluate information effectively and rapidly in order to make decisions.
- Encourage students to approach authentic tasks with flexibility and persistence
- Provide a balance between direct instruction and authentic learning experiences.

Provide opportunities for students to experience both the nature of information in a global world and the characteristics of various media:

- Seek opportunities for students to work as teams and collaborate with others from their community and around the world.
- Ensure students are informed about other cultures so communication technology exchanges can be made respectfully with people around the globe.
- Help students discern when information is needed for a task and how to locate the appropriate information that can be evaluated based on accuracy, relevance to a task or question, and appropriateness.
- Be aware of the strengths and weaknesses of various media and make these transparent when involving media resources in instruction.
- Help students understand that all media messages are constructed and teach them to deconstruct and construct media messages effectively.

Technology enables a variety of measures that can be used to support both formative and summative ends:

- Ongoing formative assessments both support and are supported by the use of educational technology.
- Technology can help provide students with useful and immediate feedback to improve their performance.
- Remain up-to-date on new methods of assessment that support the evaluation of complex learning made possible through technology.

Appendix 11
Essential Elements of ICT Literacy

What School Administrators need to Know about ICT Literacy

Technology, as an educational tool, provides opportunities for learning beyond current capabilities:

- Learning skills that use authentic work technologies help keep students motivated and prepare them for lives after school.
- Technology provides an opportunity for students to learn and practice strong thinking and teamwork skills.
- Using technology, students can learn individualized topics in new ways and in unique settings.
- Because technology can provide opportunities for real change in the way students learn, school leaders should allow teachers the flexibility to try new tools and methods.
- When new technologies are deemed useful, barriers to adoption need to be addressed.

Technology enables a variety of measures that can support both formative and summative ends:

- Ongoing, formative assessments both support and are supported by educational technology.
- Technology can help provide students with useful and immediate feedback to improve their performance.
- Stay up-to-date on new methods of assessment that support the evaluation of complex learning made possible through technology.
- Learn how to evaluate and support teachers' uses of technology as effective learning tools.

Leaders provide inspiration and support for teachers and students who use technology for learning:

- School leaders should be good role models for acceptable and safe behavior.
- Reaching out with information and guidance can help parents and other community members understand and support educational uses of technology.
- Administrators must engage in professional development to enable them to be effective users of technology.
- Be aware of current legal and ethical implications of technologies in education and determine procedures to deal with situations before they arise.
- Develop technology plans by encouraging a strong vision among all stakeholders and practical, innovative methods for implementing the vision.

Budgets that provide ongoing support for technology (e.g., infrastructure, personnel, training) are imperative:

- Be aware of the practical implications of existing and new technologies and hire people who can provide good guidance.
- Develop professional development plans that focus on the ICT skills that students need.
- Provide support and incentives to teachers who take risks with new approaches.

Appendix 12
Technology Support Positions

The following is an excerpt from the 2015-17 Addendum to the Educational Technology Plan for Virginia: 2010-2015 (p16)

Instructional Technology Resource Teachers (ITRT)

In 2005, the Virginia General Assembly began requiring divisions to employ one ITRT per 1,000 students to help integrate technology into classrooms. A study by Virginia Tech's Center for Assessment, Evaluation, and Educational Programming determined that ITRT have become an essential part of educational technology in the Commonwealth (Virginia Department of Education, 2007).

The research found that ITRT are overwhelmingly qualified for their positions, work consistently on appropriate tasks, and train teachers regularly in the latest technologies. While some teachers still resist incorporating technology, the program has helped many overcome their fears; an increasing number have taken advantage of the ITRT program, particularly through technology integration, software training, and the development of curriculum resources (p. 2).

The study added that ITRT have contributed to major improvements in 32 percent of the SOL test areas, with the most significant impact occurring in English reading; however, improvements also were observed in eighth-grade English writing and fifth-grade mathematics. The study recommended that the program would achieve even greater success by hiring at least one ITRT per school, clarifying their duties more precisely, and encouraging administrators to work more closely with them (Virginia Department of Education, 2007).

Technology Support Positions

In 2005, the Virginia General Assembly also began requiring divisions to employ a second technology position aimed at providing technology support for schools. School divisions must employ one technology support position per 1,000 students. This position provides support for information networks; software and hardware installation, maintenance, and repair; security management; and other related responsibilities. In the most recent educational technology survey, 93 percent of respondents believe their school's technology is reliable, and 92 percent believe technical support for teachers is adequate (Virginia Department of Education, 2009).

Appendix 13
Resources

Educational Technology Plan for Virginia - "Educational Technology Plan for Virginia" - http://www.doe.virginia.gov/support/technology/edtech_plan/index.shtml

APS Strategic Plan - "Arlington Public Schools 2005-2010 Strategic Plan" - http://www.apsva.us/1540108115142039 3/site/default.asp

National Educational Technology Plan - "National Educational Technology Plan 2010" http://www.ed.gov/technology/netp-2010

Appendix 14
Alignment Checklist

Alignment Checklist		
	Requirement	**Page Number**
Planning Process		
1	Planning committee group includes all stakeholders (including parents and other elements of community).	18
2	Planning committee collaborates regularly.	17
3	Division's mission and vision—and its comprehensive plan's goals and objectives—have been reviewed to inform priorities in relation to its technology plan's goals, objectives, and strategies.	14-16
4	Needs assessment has been conducted.	22-27
5	Evaluation is planned as a yearly process.	17
Actions		
1	State goals and objectives are included as part of the division plan; planning committee develops local strategies.	4-11
2	Division may include other goals and objectives as determined by planning committee, but these must be tied to division-wide priorities.	4-11
3	Plan includes a reasonable timetable for implementation as well as a reasonable budget.	12-13
4	Plan is available on the division's Web site.	Cover page
5	The evaluation of the plan looks at both the "big picture" and at the specifics. The end goal is not to use more technology but to use technology more effectively to meet educational goals.	4-11

Appendix 15
Document Revisions

Date	Version	Revision	Author
12/20/2011	1.0	Original Document	Matt Smith
5/19/2011	1.1	Added Budget, Timeline and Document Revisions Appendixes	Matt Smith
5/31/2011	1.2	Updated Budget Figures	Matt Smith
11/30/15	1.3	Draft Addendum • Additional Strategies and Indicators added (Goals, Strategies and Tasks from original plan retained) • APS Mission, Vision, Core Values and Strategy Map added • Integration and Alignment moved to Appendixes • Budget Appendix removed • Appendix 4: Developing the 2016-18 Addendum added • Developing the APS Technology Plan for FY2012-16 moved to Appendixes • Summary of Needs Assessment moved to Appendixes • Evaluation and Update revised to reflect updated process • Appendix 10: Computer and Technology Standards added for ease of reference • Appendix 11: Essential Elements of ICT Literacy added for ease of reference • Appendix 12: Technology Support Positions added for ease of reference	Matt Smith
12/15/15	1.3.1	Final Addendum	Matt Smith