David Ash – Chip Schutte – Michael Hobert - Sharon Keeler – Dr. Michael Murphy

AGENDA
Joint Administrative Services Board
April 23, 2012 12:00 p.m.
Joint Government Center

1. **Call to Order.**

2. **Approval of Minutes. (March 26 Minutes Attached) (pg. 2).**

3. **Health Insurance: Dependent Eligibility Communication (pg. 3).** A proposed communication to employees regarding the Eligibility of Dependents is found on page 3. This would be distributed to all employees currently claiming dependents, and to all who wish to add dependents in the future. Note this this communication warns employees that documentation may be requested at any time, but does not require documentation at this time.

4. **Health Insurance: Retiree Group membership.**

   a. *Government Personnel Policy Definition of Eligibility:* "A regular full-time employee that has served Clarke County for a minimum of 10 years, and who is eligible to draw retirement payments from the Virginia Retirement System, may be a part of the health insurance retiree group, if the employee elects to join this group within thirty-one days subsequent to the termination date. The premium for the retiree group membership shall be borne by the member and, if membership is discontinued, there is no eligibility for reinstatement. Dependents covered on the termination date can continue to be covered, but dependents cannot be added subsequent to the termination date."

   b. *School Personnel Policy Definition of Eligibility:* "A regular full-time employee, or Food Service worker eligible for health group membership, that has served Clarke County Public Schools for a minimum of 10 years, and who is eligible to draw retirement payments from the Virginia Retirement System, may be a part of the health insurance retiree group, if the employee elects to join this group within thirty-one days subsequent to the termination date. The premium for the retiree group membership shall be borne by the member and, if membership is discontinued, there is no eligibility for reinstatement Dependents covered on the termination date can continue to be covered, but dependents cannot be added subsequent to the termination date."

5. **Director Performance Evaluation.** This evaluation is planned for April 25.

6. **FY 13 Audit.** Proposals from audit firms for performance of the FY 13 audit are expected on May 1, and the contract should be awarded by May 15. Although the JAS Board could schedule a special meeting to decide this matter, it is recommended that

Dave Ash and Dr. Murphy rank the proposals and follow through with the contract, for the sake of expediency.

7. **Technology Governance.** Please find the following documents attached:

   a. Approved Memorandum of Agreement establishing Technology Governance responsibilities.
   b. Thoughts of Gordon Russell on considerations for development of a Joint Technology Plan.
   c. Clarke County Public Schools Technology Plan.
   d. Concerns of John Staelin regarding an ERP system.

   The Board should begin the development of a ten-year plan that lays out actions related, at a minimum, to the following:

   a. Extension of phone system, and upgrades.
   b. Extension of Building Automation system, and upgrades.
   c. Extension of Building Security system, and upgrades.
   d. Network switching upgrade schedule, and location of central switching rooms.
   e. Training schedule and training budget for common software applications.
   f. ERP system implementation.

8. **Next Meeting will be May 21 (Technology Governance).**

Joint Administrative Services Board

March 26, 2012 Regular Meeting 12:00 pm

At a regular meeting of the Joint Administrative Services Board held on Monday, March 26, 2012 at 12:00 pm in Meeting Room C, Berryville Clarke County Joint Government Center, 101 Chalmers Court, 2nd Floor, Berryville, Virginia.

Members Present

Sharon Keeler; Chip Schutte; Michael Murphy; David Ash [in 12:08]; J. Michael Hobert

Members Absent

None

Staff Present

Tom Judge, Lora B. Walburn

Others Present

George Archibald; Ed Leonard

1. Call To Order - Determination of Quorum

At 12:01 pm Michael Hobert called the meeting to order after determination that a quorum was present.

Chip Schutte, seconded by Mike Murphy, moved to adopt the agenda as presented. The motion carried as follows:

David Ash	-	Absent
J. Michael Hobert	-	Aye
Sharon Keeler	-	Aye
Michael Murphy	-	Aye
Charles "Chip" Schutte	-	Aye

2. Approval of Minutes

Mike Murphy, seconded by Sharon Keeler, moved to approve the February 27, 2012 meeting minutes as prepared. The motion carried as follows:

David Ash	-	Absent
J. Michael Hobert	-	Aye
Sharon Keeler	-	Aye
Michael Murphy	-	Aye
Charles "Chip" Schutte	-	Aye

David Ash joined the meeting at 12:08 pm.

3. Health Insurance: Dependent Eligibility Verification.

Two ways to go:

a. *Hire an audit firm.* This would cost $1,200 to $2,000. Vendor would inform all holders of policies that include dependents of who and who is not eligible. They would require documentation for all dependents (tax returns, marriage licenses, birth certificates), would work to remove ineligible dependents, and would provide training of staff in verification for future hires.

b. *Warn of Penalties.* Joint Administrative Services will provide all employees with dependent coverage a definition of eligible dependents, and inform them of the penalties for fraudulent claiming of dependents. The penalty: *An employee's failure to remove ineligible persons from his or her health benefits membership may result in the retraction of claims and removal from the Plan for up to three years according to the regulations governing The Local Choice Health Benefits Program. The employee may not be allowed to reduce health benefits membership except within 31 days of the dependent's loss of eligibility, during Open Enrollment, or with another consistent Qualifying Mid-Year Event.*

Tom Judge provided the following update:

— The cost estimate for external audit, based on Loudoun County's experience, would be between $1,200 and $2,000.

— Prince William, Fauquier, Loudoun all substantiated that an audit resulted in cost reduction and identification of potential fraud.

— Currently, there is no existing budget.

— Local Choice shared statewide experience indicating that such an audit causes those with eligible dependents a great deal of aggravation.

— Joint Administrative Services could:
  - Train staff on future enrollment.
  - Review and match with policies.

- Provide a clear definition of who is eligible and ineligible. Eligibility requirements changed due to insurance portability act.
- Work with employees to remove ineligible dependents.
- Warn employees of the penalties.

Highlights of the discussion include:

— Prepare a simple questionnaire for employees with dependent coverage at time of insurance renewal.

— Provide an explanation of qualifying events.

— Provide employees with dependent coverage an annual statement regarding dependent eligibility.

— Conduct an annual audit on a rotating basis.

— Notify employees that staff will be trained and annual random sample audits taken.

— Provide employees with rules and provide examples of problem areas.

— Include acknowledgement of receipt.

By consensus, the Joint Administrative Services Board agreed to provide employees covering dependents a letter with definitions, explanation and notice of random annual audit.

4. Health Insurance: Eligibility of Terminated Employees beyond COBRA.

It is recommended that Government and School personnel policies be modified to conform to the requirements of the Local Choice plan with respect to terminated employees. The newly revised language in the Local Choice policy is: *A retiring employee must meet the employer's criteria for retirement to be eligible for health benefits coverage through the employer "Retiree Group". In addition to meeting the Local Employer criteria, the retiree must be: at least 55 years of age, have at least five (5) years of service with the participating employer or at least 50 years of age and have at least ten (10) years of service with the participating employer.*

In addition, *"Elected officials that make up the governing body of a Local Employer may be eligible as either a special class of full-time employee or as part-time employees. They may not, however, participate in the retiree classification.*

Temporary employees, appointed board members or appointed commissions are not eligible for coverage under The Local Choice."

Tom Judge briefly summarized the eligibility requirements noting that VRS had recently changed these requirements. He advised that only one person did not fit the revised definition that person being retired but not drawing from VRS. He recommended that School and County personnel policies be modified to reflect the new requirements for persons eligible for health insurance after retirement.

Dr. Murphy requested a more specific definition of a "retiree". Tom Judge suggested adding "someone eligible to draw from VRS."

David Ash reminded of the LEOS program for law enforcement.

Lora Walburn asked about updating the document to reference health insurance carriers' policy.

Chairman Hobert asked Tom Judge to provide the VRS policy reference and to prepare the policy statements for the Schools and County.

By consensus, the drafted policy shall be reviewed by the Joint Administrative Services Board prior to review and approval by the respective boards.

Miscellaneous

Tom Judge distributed the following memorandum from Supervisor John Staelin.

To: Clarke County Joint Administrative Services Board

Copies: Tom Judge

From: John Staelin

Subject: ERP Systems

Date: March 25, 2012

I am writing to explain my position regarding JAS's proposal to have the County purchase an ERP system. As you all know, I have voiced a variety of concerns in previous meetings about this issue. I felt it only fair that I summarize my views on paper.

My Concerns:

1. **We do not know what an ERP system would ultimately cost.** The estimates in The Governors Finance Officers Association Report ranged from $400,000 to $1,100,000 in "cash costs" plus $125,000 to $350,000 in "non-cash" costs. That is a huge range. I think it is important that the County get a better understanding of what the total cost is likely to be before it commits to implementing anything of this size.

2. **The payback is unclear.** The Governors Finance Officers Association Report said Clarke should experience productivity improvements from a reduction in non-productive time if an ERP system is implemented. However, the report also states that Clarke should not expect to see any staff savings (no reductions in positions). Further the report warned that unless staff is properly managed the predicted productivity savings will not be attained as employees tend to be slow to give up the systems they personally designed and use. Finally, the report

predicts that the County would likely have to add two to four employees in its IT department unless a "hosted" ERP system is selected. Tom Judges' analysis predicts that the County may avoid hiring two people in the future if business activity increases. He may be right but we really should know more about what an ERP system could do for Clarke before we make any commitment.

3. **We do not know who the winners and losers will be in the ERP industry.** We will save a lot of money and hassles over time if we select a vendor that has lots of clients our size right here in Virginia. We will be able to share the cost of system updates as laws change and we will be able to adopt "best practices" from other jurisdictions of our size.

4. Related to all the above, **technology is changing rapidly**. Cloud computing is becoming much more popular. Handheld devices are being used in new ways. When we do go ahead with this, we need to make sure we adopt a flexible ERP system that will keep our options open as technology changes.

5. **Clarke is too small to be a leader in the ERP area.** We cannot afford to be on the bleeding edge of technology. We should be adopters of proven systems; systems used by more than a handful of counties/cities our size.

Having said the above I want to make it clear that I believe Clarke County will ultimately implement an ERP system and that JAS should continue to investigate this issue. Some possible next steps include:

1. Work with Treasurer's Association, VACo, VML or similar organizations to find out which jurisdictions in Virginia have implemented an ERP system and document the vendors and uses they selected. This would allow us to see which vendors are gaining a critical mass with jurisdictions of our size.

2. Create a list of all the different IT systems used here in the County, documenting in an abbreviated form what each system does.

3. Create a list of activities that are not automated today but which ideally should be automated in an ERP system.

   The lists created in numbers 2 and 3 above will be crucial in evaluating and selecting ERP providers. Ultimately we will need to compare the functionality of any proposed system to the processes we complete today. That is the only way you will be able to know which current systems can be replaced by any proposed ERP system and which will have to stay. Without such data it will be virtually impossible to compute an ROI.

4. Decide if you have any technological demands at this time (e.g. Cloud computing vs. local or hosted computing).

5. Once you have the data above you can ask the vendors who seem to have "critical mass" here in Virginia to come in and give you a presentation. In that meeting each vendor should be able to give you a ballpark description of the cost of implementation as long as you have all the information described above.

I am sure you can think of other important tasks that need to be accomplished but I hope this gives you food for thought.

Dr. Murphy stated that the School Board needs to review the technology.

Chairman Hobert asked that issues raised in Supervisor Staelin's memorandum be addressed at the next Joint Administrative Services Board meeting.

5. Next Meeting

The next regularly scheduled meeting is set for Monday, April 23, 2012 at noon in Meeting Room AB at the Berryville Clarke County Government Center.

6. Adjournment

At 1:10 pm, Chairman Hobert adjourned the meeting.

Minutes Recorded and Prepared by: Lora B. Walburn

SPECIAL NOTICE

TO EMPLOYEES CLAIMING DEPENDENTS

WHO: All employees that are members of the Clarke County Health insurance group that intend to claim dependents for the upcoming renewal term (July 2012 through June 2013).

WHAT: Employees claiming dependents are required to complete a new enrollment form.

WHEN: Turn in the form by May 15.

WHERE: Joint Administrative Services c/o Sally Sheckels, 524 Westwood Road, Berryville VA, 22611.

WHY: The definition of a dependent has changed as a consequence of changes in Federal law. In addition, many employers have instituted audits that have revealed employees making false claims of dependents, whether knowingly or unknowingly. All dependents claimed must meet the appropriate definitions below.

HOW: Complete the enrollment form attached. Current group members do not need to provide documentation proving dependent eligibility at this time. However, current members should ensure that this documentation can be readily produced in the event of a dependent eligibility audit. Documentation will be required for new group members as of July 1, 2012.

PENALTY: *"An employee's failure to remove ineligible persons from his or her health benefits membership may result in the retraction of claims and removal from the Plan for up to three years according to the regulations governing The Local Choice Health Benefits Program. The employee may not be allowed to reduce health benefits membership except within 31 days of the dependent's loss of eligibility, during Open Enrollment, or with another consistent Qualifying Mid-Year Event".*

Dependents	Eligibility Definition	Documentation Required
Spouse	The marriage must be recognized as legal in the Commonwealth of Virginia. **Note: Ex-spouses will not be eligible, even with a court order.**	➢ Photocopy of marriage certificate, **and** ➢ Photocopy of the top portion of the first page of the employee's most recent Federal Tax Return that shows the dependent listed as "Spouse". NOTE: All financial information and Social Security Numbers can be redacted.
Natural or Adopted Son/Daughter	A son or daughter may be covered to the end of the year in which he or she turns age 26.	➢ Photocopy of birth certificate or legal adoptive agreement showing employee's name (Note: If this is a legal pre-adoptive agreement, it must be reviewed and approved by the Office of Health Benefits.)
Stepson or Stepdaughter	A stepson or stepdaughter may be covered to the end of the calendar year in which he or she turns age 26.	➢ Photocopy of birth certificate (or adoption agreement) showing the name of the employee's spouse; **and** ➢ Photocopy of marriage certificate showing the employee and dependent parent's name **and** Photocopy of the most recent Federal Tax Return that shows the dependent's parent listed as "Spouse". NOTE: All financial information and Social Security Numbers can be redacted.

Dependents	Eligibility Definition	Documentation Required
Other Female or Male Child	An unmarried child in which a court has ordered the employee (and/or the employee's legal spouse) to assume sole permanent custody may be covered until the end of the year in which he or she turns age 26 if: ✓ The principal place of residence is with the employee; ✓ they are a member of the employee's household; ✓ they receive over one-half of their support from the employee and ✓ the custody was award prior to the child's 18th birthday.	➢ Photocopy of birth certificate **and** ➢ Photocopy of the Final Court Order granting permanent custody with presiding judge's signature.
Other Female or Male Child - Exception	If the employee (or employee's spouse) shares custody with their minor child who is the parent of an "other female or male child", then that "other child" may also be covered if the other child, the minor child (who is the parent), **and** the employee's spouse (if applicable) ✓ all live in the same household as the employee; ✓ both children are unmarried; **and** ✓ both children received over one-half of their support from the employee. The minor child must meet all of the eligibility requirements for a dependent child. Once the minor child turns 18, the employee or spouse if applicable, must receive sole custody of the other child to continue coverage.	➢ Photocopy of the other child's birth certificate showing the name of the minor child as the parent of the other child; ➢ Photocopy of the birth certificate (or adoptive agreement) for the minor child showing the name of the employee; **and** ➢ Photocopy of the Final Court Order with presiding judge's signature.
Incapacitated Adult Dependents	The employee's adult children who are incapacitated due to a physical or mental health condition may be covered beyond the end of the year in which he or she turns age 26 if: ✓ they are unmarried; ✓ reside full-time with the employee (or the other natural/adoptive parent); ✓ the employee provides more than half of the dependent's support; ✓ they are deemed incapacitated prior to the end of the year in which they reach age 26; **and** ✓ they have maintained continuous coverage under an employer-sponsored plan of the employee (or the other natural/adoptive parent). Coverage through Medicare or Medicaid will be deemed coverage through the employee.	➢ Photocopy of birth certificate or legal adoptive agreement showing employee's name. ➢ In the case of a new employee, copy of the HIPAA Certificate showing prior employer-sponsored coverage. ➢ Other medical certification and eligibility documentation as needed.

When a child loses eligibility, coverage terminates at the end of the month in which the event that causes the loss of eligibility occurs.

Clarke County Information Technology Goals and Direction.

The County IT Department primarily provides computer technology related systems to General Government departments and employees. We strive to do this in the most cost-effective manner, balancing end user convenience, time efficiency, complexity, systems reliability, data security and continuity of service.

What follows is an itemized list of the most significant tangible projects and expenditures that we foresee as necessary to continue to meet the aforementioned goals. ERP implementation is not addressed here.

1) ***Additional SAN storage array***. The SAN is the heart of our data infrastructure. It is a single array of hard drives that hold most server operating systems and end user data. It is currently located in the Government Center, and holds systems and data for General government, Sheriff's Office, Commonwealth's Attorney, JAS, Park, and Fire & Rescue. The only core server department not in the SAN is Commissioner of Revenue & Treasurer, which have their own dedicated server data storage environment. Modern SAN's are capable of efficient data replication between sites, and we envision adding a second SAN array in the Courthouse, to provide offsite replication and expansion of total storage, in the next fiscal year. Currently our offsite replication occurs to the schools SAN at JWMS, and theirs to ours, but we are running out of space to do all of that on two arrays. Cost $28k
2) ***Add a third virtualization host***. Server virtualization is the capability of a single physical computer to provide multiple discreet and self-contained instances of a server. Virtualization technology coupled with SAN storage allows for flexible management and provisioning of IT services, far beyond what is possible with unique dedicated physical servers for every departmental need. Having multiple virtualization hosts allows for the real-time migration of departmental servers off of one host and onto another. Cost $4k
3) ***Upgrade telephones in Courthouse***. Currently the telephones in the courthouse are of an older technology and are due to be upgraded to our current scheme of VoIP. Additional telephone system upgrades bring the total cost to $19k.
4) ***Core network infrastructure replacements***. Core switches are now 4 years old and will start needing replacement in the next few years. 3 switches, $35k each switch. Ancillary switches(6) at $6k. Total cost $140k.
5) ***Desktop replacements***. Desktops are replaced cyclically every 4-5 years, usually about 20 per year. Cost $25k per year.
6) ***Sheriffs mobile data terminal replacement.*** Sheriff's cruisers are all equipped with semi-ruggedized notebooks for dispatch support. They were originally procured under a grant, and are now in their 3rd year of service. Replacement is imminent. 19 @ $2k each. Total cost $38k.
7) ***Out of region DR/failover for i-series***. The i-series (AS400) is currently manually backed up to magnetic tape daily and tapes stored in the Bank Of Clarke vault. The data is adequately protected, although a hardware disaster (flood/fire/etc.) could render the i-series unusable for an extended period of several days while a replacement is procured and configured. If we are interested in shortening this time frame, a Disaster Recovery plan needs to be implemented. Cost $5k-15k.

2010-2015
Technology Plan

Clarke County Public Schools

309 West Main Street --- Berryville, VA 22611

Primary Author
David Baggett, Technology Services Administrator

Secondary Authors
Administrative Team – Clarke County Public Schools

www.clarke.k12.va.us/techplan

December 6, 2010

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Appendix 2: Acceptable Use Policy

Appendix 3: Internet Safety Program

I. Executive Summary

We have achieved much over the past two and a half years and continue to examine and expand our technology network to ensure the availability of expanded learning opportunities for staff and students. Along with a more robust infrastructure, we are now having significant conversations about the use of wireless laptops and handhelds and the concept of moving toward integrated classrooms with data projectors, interactive whiteboards, document cameras and similar tools of technology. Given that staff training and education are critical to the overall successful implementation of technology, we have much to do. We need consistent, focused training and staff development infused with national and district technology standards to more positively impact student achievement. The truth, however, is that we are very much behind in our efforts. To be successful, and consistently successful, we must "leapfrog" forward with technology usage and skills for both staff and students if we are to do more than just remediation with technology. We must begin the process of using technology to promote creativity, collaboration and problem solving and truly transform our schools and classrooms

When we reflect upon our mission "to be the best at ensuring lifelong learning for students, staff and community" it is evident that we must first believe that all students can learn and that all students can graduate from high school prepared for the rigors of 21st century both career and college ready. As a division and as a community, supporting their growth into knowledgeable, skilled and confident citizens capable of succeeding in their work, personal and family lives is critical to their success.

To this end, our "technology vision" would challenge us to leverage technology to promote and advance a dynamic, student-centered, learning environment that maximizes student potential, empowers teachers, embraces parents, engages community, and promotes global citizenship and awareness.

To achieve success in the future, students will continue to need the basic skills of reading, writing and calculating to be considered literate. In addition, students also need to attain proficiency in science and technology as well as gain a thorough understanding of information in all its many forms. Today students live in a digital world and must master a number of digital technologies. Students must be digitally literate, information literate, media literate, and visually literate. They must know how to work collaboratively and find relevant information independently. They must be effective communicators and socially responsible. They must "learn how to learn" which will be a lifelong process. Relevant and appropriate technologies must be available to make learning exciting and interesting, to enhance interaction between students and others, and to tie learning to the greater community outside of the school walls. Greater access and skills with information technologies will allow students greater opportunities to prepare for all career paths in the future.

We believe that the Clarke County Public Schools must strive for digital equity. All of our students must be prepared to live, work, and thrive in this next century. Our implementation plans must include greater understanding on the part of our teachers and administrators that a technology enhanced school environment is not a choice, but rather a necessity.

We also believe that technology is equitably implemented when it is:

1. Available
2. Used routinely
3. Used in ways that reflect real-world applications of interest, complexity and power
4. Used to enhance learning opportunities for all students
5. Used to monitor teacher/student progress over time.

To meet these challenges and deliver students to higher education and the workplace, ready to live, learn, and make a meaningful contribution using the most current technologies, knowledgeable of a global connection, and mastery of a variety of digital tools, requires commitment, dedication, and attention to detail on the part of the leaders of the County of Clarke, the Clarke County Public Schools, and those who live, work, and teach the next generation.

II. Process

A. Summary of connections to the division's mission, vision, etc.

The goals and objectives reflected in this Technology Plan support the division's mission "to be the best at ensuring lifelong learning for students, staff and community". Supporting student growth so that they might become knowledgeable, skilled and confident citizens capable of succeeding in their work, personal and family lives can and should be enhanced through technologically rich and developmentally appropriate learning environments.

Our "technology vision" challenges us to leverage day to day technology to promote and advance dynamic, student-centered, learning environments in our schools. It is critical that we continue to maximize student potential, empower teachers, embrace parents, engage our community, and promote global citizenship and awareness in an effort to help prepare our students for that 13th year, that first year after high school graduation.

The reality for schools is simple. We must ensure that every student masters the core subjects and is conversant in global awareness; financial, business and entrepreneurial literacy; civic literacy; and health literacy. Our students need to apply creativity, critical thinking, problem solving, communication and collaboration skills to the learning process on a day to day basis, too. In addition, they need to demonstrate flexibility, initiative, social and cross-cultural skills, productivity, accountability, leadership and responsibility. Technology can and should be a driving force in the education of our youth. The reality is simple... the hard work lies ahead.

B. Summary of work of the planning committee and its benchmarks

The planning committee, composed of school board office staff and administrators, met individually and in small groups to develop this technology plan. Its primary focus was to listen to the needs of school staff in order to create a plan that would serve as a springboard for future discussion. In years past, the division's technology plan was typically a "clone" of someone else's technology plan. Significant thought and discussion have gone into the creation of this technology plan. It should be noted that, as a plan receiving on-going and annual review, there will be on-going opportunities to edit, add to, and subtract from this plan. This is a living document.

C. Summary of the evaluation process and planned update cycle

The evaluation process will consist of an administrative review in the spring of 2011, but prior to June, 2011, with a more formal review in August of 2011 by the Technology Services Administrator and the division's ITRT staff. It is anticipated that this document will be revised annually prior to December of each year. Additional documentation is needed to support this plan, including well defined student, staff and administrative standards (e.g., International Society for Technology in Education, or ISTE - http://www.iste.org/standards.aspx).

D. Conclusions from Needs Assessment

Our internal needs assessment uncovered a large number of systemic deficiencies. Many of these deficiencies can be attributed to inadequate and/or inconsistent levels of funding and the Division's inability to align its technology vision with appropriate resources over time. In addition to funding and the challenge of leadership, the absence of a future-focused vision and a sense of urgency for a robust technology system have diminished our ability to meet the needs of our students and staff. The bottom line is that our infrastructure and end-user technology has suffered and we are now paying the price. Most of our computers are seven (7) years old or older and the division lacks basic software and classroom technologies that are considered to be standard in a modern school. In the past, the division relied too heavily on donated equipment to equip its classrooms, computer labs, and infrastructure. Most donations are accepted from government agencies and businesses at the end of their useful life, which is usually about 3-5 years. In addition, the division has not provided adequate staff development opportunities at any level. Further, the lack of building-level IT support has seriously jeopardized the division's ability to provide usable classroom technology and the lack of teacher based instructional technology coaches (ITRT) positions have left teachers not knowing how to implement what little technology they have. The results of our needs assessment can be summarized in four primary categories: 1) staffing, 2) staff development, 3) infrastructure, and 4) end-user technology; each of which has a fiscal cost.

Staffing

By way of introduction, it should be stated that one can always debate the logic and rationale of voluntary or mandated standards. Discussions about the level or levels of staffing needed to ensure a technologically competent workforce and student population, however, should always be held in conjunction with what we know about best practices. It is clear from our review of the literature that when it comes to teaching, learning and supporting technology, competent staff are required to work with other teachers, staff, and students to ensure the appropriate and effective use of technology. In reality, best practices should guide our work, not voluntary or imposed standards. As a result, we believe that additional human resources (i.e., personnel) are needed to help us achieve the effective results we desire; discussion follows.

Instructional Technology Support for Teaching and Learning (School Based) - The division has a portion of one licensed teacher at each school designated as an ITRT (Instructional Technology Resource Teacher). These teachers receive a small stipend each year for their efforts to assist their colleagues in the appropriate use of technology for instructional purposes. During the most recent needs assessment it was determined that none of these teachers are given time in their daily schedules to accomplish their primary mission of helping other teachers integrate technology into their curriculum. Our current ITRT staff is expected to use planning periods and any time they have outside of teaching classes to perform these duties. Further, there is no

time allotted for staff development or coordinating activities with the central IT department. The VDOE requirement for ITRTs is 1.0 full time equivalent (FTE) per 1,000 students. Clarke County Public Schools has a current enrollment of approximately 2,100 students; therefore, the division is required to have 2.0 FTE devoted to instructional technology support.

Technology Support for Efficiency of Operations (School Based) - The division has a portion of one licensed teacher or instructional assistant designated to each school as a building-level Technology Specialist or T-SPEC. Like the ITRT, however, it was determined that building-level Technology Specialists are not allocated any time in their daily schedules to complete their duties. The VDOE requirements for these positions are the same (1.0 FTE per 1,000) as the ITRT positions noted above except that Technology Specialists are not required to be licensed teachers. These support staff are primarily responsible for daily maintenance and troubleshooting of classroom equipment. The technology specialists also maintain an inventory of equipment and software that is installed in their assigned buildings and work with the central IT department to replace and/or upgrade same on a regular schedule. Additional duties include working with the building principals to prioritize support requests, new equipment/software requests, and escalate problems to the central IT department.

Technology Support for Critical Functions (Division Level) – In general, the central IT department is responsible for the core technology infrastructure including network cabling, switches, routers, servers, enterprise software, system maintenance and support. The IT department is also responsible for technology replacements and software upgrades. The division employs a total of 3.0 FTE in the central IT department: 1) the Technology Services Administrator, 2) a Network Specialist, and 3) a Systems Specialist. In addition, the division also employs a Database Specialist, who works in conjunction with Division staff and central IT staff in a variety of support and leadership roles.

The Database Specialists is primarily responsible for ensuring that student record data is accurate and accessible when it is needed. Due to the ever-expanding requirements of State and Federal reporting and the number of systems that share data with the student information system, there is little, if any, time for this position to assist with general technology support. The Network Specialist is responsible for maintaining servers and network systems including the firewall, Web filter, spam filter, network switches, domain controllers, update servers, and desktop images for new computer deployments. The System Specialist is responsible for maintaining core systems including email, virus protection, system backups, file servers, print servers, helpdesk system, and other applications that are installed on the network. The Technology Services Administrator is responsible for providing leadership and direction for the division in all areas related to our technology system. The Technology Services Administrator works with the Superintendent, building principals, curriculum coordinators, ITRTs and TRTs, and other stakeholders to develop an overall technology vision for the school division. In addition, the Technology Services Administrator ensures that building-level and central IT staff receive

adequate training and resources needed to execute the actions included in the Technology Plan for the division. Other duties include systems analysis and process redesign to improve system reliability and efficiency and reduce operating costs. The Technology Services Administrator is also responsible for managing the capital and operating budgets for the division.

Analysis and brutally honest discussions regarding our technology system clearly support the fact that the persistent lack of building-level IT support has crippled the central IT department. Although much progress has been made to stabilize core services such as our Internet connection, email, and student records system, the IT department has not been able to improve or even marginally enhance the general state technology in school classrooms. Due to the fact that the System Specialist and Network Specialist are spending so much time resolving desktop support problems at the individual schools, forward progress is relatively slow. Many of the service requests that are received centrally could be easily resolved by entry-level IT support personnel at the buildings.

In addition, teachers and support staff are not adequately trained and in some cases lack basic computer skills and operating knowledge of over-the-counter and basic instructional software. Instead of resolving complex system problems and working to improve the overall infrastructure of the division, central IT staff is spending much of their time on desktop support. In addition, the Technology Services Administrator has assumed much of the system administration and network duties in order to keep things running. With no clerical support and staff that are not able to perform their primary functions due to their need to support problems at the desktop level, the Technology Services Administrator is unable to manage large projects effectively, research and evaluate new technologies to support best business practicesand instruction and develop plans to implement them at the division. Projects that should take weeks end up taking months to complete resulting in very slow levels of implementation.

We have concluded that the division needs to hire 2 licensed teachers as full-time ITRTs, one for the elementary schools and one for the secondary schools. In addition, 2 instructional assistants are needed as full-time Technology Specialists, one for elementary schools and one for the secondary schools. These positions would rotate between their assigned buildings and other buildings such as the Annex, F&M, and the School Board Office. Additional ITRT support is critical if we are to provide exemplary instructional support to teachers, utilizing our T-SPECs to provide building-level desktop support. In order to be most efficient, both the ITRT and the T-SPEC positions will have regular meetings and training with the central IT staff.

Staff Development

In general, administrators, teachers, and support staff are not provided adequate staff development opportunities related to end-user technology and software applications. As a result, many employees lack essential computer skills and are not able to fully utilize the classroom or office technology that they have. In addition, the Technology Department has not

effectively disseminated information about available software, systems, and other resources, primarily due to spending so much time in "catch-up" mode and a lack of dedicated staffing to achieve these tasks. Systemic attempts to inform the user population about changes in technology and new resources often fail because these notices are distributed in email; not all staff has access to our use email. In addition, many division-level services such as file storage and network printing are not utilized, resulting in lost productivity, increased costs, and wasted resources.

The Technology Services Administrator is responsible for providing information about, and in some cases, professional development opportunities for staff. He or she is also responsible for the coordination of hardware and software deployments. The Technology Services Administrator must work with ITRTs to develop training materials and, when necessary, bring in outside resources in support of the division. As mentioned in the previous section, the division's ITRT model does not allow for any ITRTs to work directly with the IT department and provide staff development and training on a regular basis. In addition to providing basic technology training to teachers, the ITRTs must work with the Technology Services Administrator and the Director of Curriculum and Instruction to evaluate and promote the use of new software and technologies in the classroom. As the division continues to deploy technologies like interactive whiteboards, student response systems, and online teaching and assessment tools, our experience (and plans) will continue to evolve. It is absolutely essential that teachers are adequately trained to use these technologies in the classroom. Otherwise, thousands of dollars could be spent without any improvement in classroom instruction.

Infrastructure

Network - As with many school systems in the Commonwealth, many of our buildings were constructed before networked computers were considered to be a standard addition to the classroom. Although all of our classrooms have network connectivity, most only have one connection per room. In this scenario, computers are connected to a desktop switch instead of being connected to a dedicated data port on the wall. Typically, these switches have 100 Mbps of bandwidth (i.e., megabit per second) that is shared by 3 to 5 computers. The current standard to the desktop is 1 Gbps of bandwidth (i.e., gigabit per second). Although most of our schools have switches that are capable of delivering a gigabit of bandwidth to the desktop, the internal wiring is not in place to support it. Each classroom should have a minimum of 4 data connections and/or wireless connectivity; wireless connectivity being more and more critical as technology evolves and progresses.

In addition, much of the existing data wiring was installed by improperly trained students and staff. The division is now using professional contractors for this work and several projects have been completed at the Clarke County High School and Cooley Elementary School. Most of our schools are still in need of wiring upgrades and several projects have been planned, including a

major rewiring project at Boyce Elementary School. Also, wireless networking is becoming an absolute necessity given need laptops and other portable devices in the classroom. The division should continue to upgrade network cabling and install both wired and wireless systems.

System Virtualization - The use of technology to automate systems and streamline processes can help IT staff manage resources more effectively. Such technologies as virtual desktops, virtual servers, and virtualized storage offer substantial reductions in maintenance overhead. In particular virtual desktops can enable the IT department to deploy software and other resources on many classroom computers by updating just one desktop image.

Over the past two years the Technology Department has been consolidating systems and taking advantage of virtualization technologies like VMware and Citrix. Newly centralized systems like PowerSchool and Follett Destiny have proven to be much more efficient and easier to maintain than systems installed at individual schools. This past year, links from the student information system (SIS; otherwise known as PowerSchool) were established to the cafeteria system, library system, and parent notification system. The IT department should continue to centralize division-wide applications and look for new opportunities to eliminate redundancy and improve efficiency.

End User Technology

Classroom Technology – The use and application of classroom technology is probably the greatest infrastructure challenge for the division. As a general rule, the division has not provided reliable and appropriate classroom technology. Our reliance on end-of-life equipment has produced a general and pervasive level of frustration among students, teachers, and IT staff. None of the hardware in our classrooms is standardized and most of it was not selected based on the needs of our teachers or students. For far too long the division has been forced to make do with whatever can be salvaged or found on the cheap, instead of evaluating the hardware and software that is available and selecting the best products for our students, as based on the needs of the instructional program. The effective use of technology can enhance the learning experience for our students in ways that traditional learning methods can't. The division must develop classroom standards that meet the needs of students and teachers at every grade-level. For instance, elementary classrooms may have very different technology needs than a typical high school classroom; therefore, it is important to select technologies that are appropriate and sustainable. Computers that are over five (5) years old are often not able to run current software and become very difficult to maintain. Hard drives are typically too small, memory is often too little, and hardware components begin to fail at an ever alarming rate. Too much time is spent by too few trying to get virus protection software and other standard applications to run on archaic systems that were not designed to handle them.

The IT Department has made very little progress in improving the quality of technology in the classrooms. Essentially, the division has been replacing totally unusable computers with end-of-

life systems. This is, essentially and honestly, a tremendous waste of staff time. Capital funds must be allocated for the replacement of classroom computers. Additionally, computer labs, mobile laptop labs, classroom projectors, core printers, and other end-user and infrastructure equipment must be refreshed regularly. The division needs to abandon its current practice of accepting end-of-life equipment and provide dedicated funding to replace 20% of all of its computers each year. Obviously, it will take some time to get the division on such a replacement cycle; it should also be known that a five (5) year replacement cycle (i.e., 20% replacement per year) is considered archaic by business and industry standards. The division must set priorities and make tough choices in order to ensure all classrooms and core areas are equipped with sufficient, appropriate, and sustainable technology.

Online SOL Testing - Another daunting challenge that must be faced is online SOL testing. The VDOE has mandated that all schools will be testing online by 2013. Last year, most of the SOL testing at the high school was done online and all SOL testing at the middle school was done online. However, the elementary schools have yet to begin online SOL testing. They simply do not have the infrastructure to test online at this time, as each elementary school has only one computer lab. The elementary schools do not have the space for multiple dedicated computer labs. The only viable option is to use mobile computer labs. The elementary schools will need six (6) carts each in order to complete SOL testing during the allotted time. The carts can be used for regular instruction when not being used for SOL purposes.

New High School – The new Clarke County High School is scheduled to open in the fall of 2012. It is anticipated that the school will be a state-of-the-art facility with a building-wide wireless network and data ports for 8 computers in each classroom. There will be multiple computer classrooms, interactive whiteboards, voice-over-ip (VOIP) phones, Internet protocol (IP) security cameras, and an Internet protocol television (IPTV) distribution system. All of these systems require reliable network connectivity. Planning for the network installation and other systems is in process. However, certain decisions about the number and type of end-user computer systems need to be revisited. It is understood that high school students need much more access to technology than they currently have. Data ports in the classroom are helpful for high-speed applications like video streaming and downloading large files; students can plug-in when they need that level of bandwidth. However, the reality is that today's students are mobile and most of the time every student in the class will need a computer. Mobile labs are becoming the standard in many schools and some are even adopting one-to-one computer programs. The high school is expected to open with 720 students. In order for every student to have a laptop, the school would need 30 mobile computer labs, containing 24 laptops each. The budget for the new high school has been approved and construction has started. Over the next year, decisions about the equipment and software for the new school will need to be finalized. It should be noted that there are over 300 desktop computers planned for the new high school at the present

time; finding balance between new and mobile technologies and the more traditional technologies will take additional conversation.

III. Summary of Accomplishments (2008 to present)

Network Infrastructure

- Installed battery backup systems in all server rooms and data closets
- Installed generator circuits in the main server room at JWMS
- Installed HVAC in the main data closets at the high school, middle school, and Cooley Elementary School
- Created new server room at CCHS and installed fiber optic connectivity to all data closets
- Rewired all trailers at CCHS and Cooley, including fiber-optic connectivity to the buildings
- Rewired room #9 and room #1 at CCHS
- Connected the Agricultural Building to the high school LAN via fiber-optic cabling
- Installed new network switches at CCHS, JWMS and Cooley
- Installed VOIP telephone system at Cooley
- Installed centrally managed wireless network system with access points at JWMS, CCHS, and Cooley (Pre-K)
- Increased LAN bandwidth at most schools from 100 Mbps to 1 Gbps.
- Increased WAN bandwidth between most schools from 1.5 Mbps to 10 Gbps.
- Increased Internet bandwidth from 1.5 Mbps to 4.5 Mbps to a fiber optic connection of 15 Mbps.

Data and Network Security

- Collaborated with the County of Clarke to install a shared iSCSI Storage Area Network (SAN) at JWMS – data is replicated to an identical SAN at the Clarke County Government Center
- Installed an automated tape backup system
- Installed enterprise virus protection with update servers located at JWMS and Boyce
- Installed Windows Server Update Services to distribute automatic software and security updates
- Setup SonicWall Firewall/VPN for increased network security and remote access
- Installed Barracuda SPAM filter which is currently blocking 30 -50 thousand unwanted emails each day
- Setup the latest WebSense filter with real-time protection
- Provided secure access to PowerSchool, Destiny, and Email via SSL encrypted connection

Technology Classrooms and Computer Labs

- Installed 31 new computers in room #1 at CCHS
- Replaced 27 computers in the Engineering classroom at CCHS
- Replaced 27 computers in room #36 at CCHS
- Replaced library computers at CCHS

- Installed virtual desktop solution with 27 thin clients in Career and Technical Education room at JWMS

Applications/Software

- Migrated Student Information System from SASI to Pearson PowerSchool
- Implemented the PowerSchool Parent Portal
- Implemented the e-transcript system (i.e., student transcripts sent electronically)
- Setup Interactive Achievement online assessment software to help prepare for SOLs
- Purchased and installed Study Island for elementary and middle schools
- Received grant from the Clarke County Education Foundation for Adobe Creative Suites at CCHS
- Received grant funding for 2 MacBooks, 2 IPADs, and 2 SmartBoard for the Pre-K classrooms
- Setup AlertNow telephone and email notice system to parents
- Implemented Aesop system and AlertNow parent portal to manage employee absences and substitutes
- Implemented Café Enterprise point-of-sale system and secure access to student lunch accounts
- Installed Follett Destiny and centralized the library catalog system
- Upgraded the email system to Exchange 2010
- Installed and implemented Track-IT help desk system

IV. Future of Technology in Clarke County Public Schools

It's difficult to say what the future will look like. There are some trends in education, however, and technology in general, that give us some insight into the near future. For example, wireless networks are certainly not a fad. We know that every conceivable mobile device will require some form of wireless access to a network. Digital and IP-based technologies will continue to replace analog technologies, IP phones will replace PBX systems, and everything from coffee pots to automobiles will be connected to the Internet in some way. Social networking sites like uTube and Facebook have made it possible for people to share pictures, home movies and their thoughts without having to know HTML or any kind of Web programming. Children now seem to be born with a cell phone in their hands.

Many K-12 students are immersed in technology and connected to the world around them all of the time *except* when they are in school. When they walk in the front door of most schools, and certainly the school of the Clarke County Public Schools, they step back in time to the latter decades of the 20th century. Today, nearly every classroom in the U.S. has at least one (1) Internet connected computer. In Virginia, one of the objectives of the SOL Technology Initiative is to provide a ratio of one (1) computer for every five (5) students. Our current ratio is about three (3) students to one (1) computer, which is well above the state requirement. The computers we have, however, are mostly outdated and in need of constant repair and maintenance. To further complicate the issue, we do not have enough technology support staff to keep them running.

In the private sector there are typically about 150 computers to every computer service technician. In the public school system, there are typically 614 computers to every technician. Since we currently have no building-level IT support and division-level support is stretched thin, none of the computers in the division are properly maintained. To complicate matters even further, the personal computer has been the standard platform for interacting with the digital world for many years, but that is no longer the case. Traditionally, all applications were stored on the computer or on a server that could only be accessed by certain computers. Today, most applications are Web-based (SaaS, otherwise known as Software as a Service) and are accessible from almost anywhere there is a decent Internet connection. Most students have access to handheld devices that are capable of accessing these applications more efficiently and with less cost. In fact, many handheld devices are more powerful than some of the computers in our current day classrooms. Clearly, just providing traditional desktop or laptop computers for classroom use is not the most effective way to integrate technology into the curriculum. Personal computers (i.e., desktop computers) will have a place in schools at least in the near term; however, we must begin to think of them as just another access point to the digital world and not as a primary means of exposing students to technology.

Technology for Every Student – The U.S. Department of Education has published an aggressive National Education Technology Plan (NETP) which includes a number of ambitious goals. For example, Goal #4 of the NETP states, "All students and educators will have access to a comprehensive infrastructure for learning when and where they need it." One of the action items in the report is to "ensure that every student and educator has at least one Internet access device and appropriate software and resources for research, communication, multimedia content creation, and collaboration for use in and out of school." Since most public schools cannot afford to buy a mobile device for every student, the Department of Education recommends buying equipment for students that have a demonstrated financial need. The free and reduced lunch program is used as an example of how schools might determine financial need. Other students could be allowed to use their own electronic or multimedia devices in the classroom. The U.S. Department of Education points to several schools that are already trying this. For example, the principal at Passage Middle School of Newport News has initiated a program called "Cell Phone Fridays" and Middletown Public Schools in New Jersey has updated their acceptable use policy to allow student owned devices in classrooms division-wide. The devices are being used to access the Internet and school resources, communicate with peers, update classroom discussion groups, record assignments on personal calendars, and send questions to the teacher that they may not want to ask in front of classmates. Not all of these tasks will be appropriate for every class; there is much work to be done in order to make effective use of these mobile devices in today's classrooms.

The Department of Education acknowledges that there are a number of social and technical problems that will need to be addressed as personal computing evolves. A typical high school or middle school student may use applications like Twitter, Facebook, text messaging, and many other social networking tools on their mobile phones. In the past, this has been considered a disruption and has led schools to ban the use of cell phones and other portable electronic devices in classrooms. In addition, it would be difficult to ensure that Children's Internet Protection Act (CCIPA) regulations on Web content filtering are properly enforced on student owned devices. School systems, however, are encouraged to try and make use of devices that are readily accessible to students. They are comfortable with these tools and rarely need training or support. We must explore ways to incorporate such devices into instruction. The classroom can no longer remain isolated from the world in which students live when they exit the building.

As we move forward, Clarke County Public Schools will need to demonstrate some initiative in this area. The school division has a relatively small student population and could be very innovative when it comes to providing students with the technologies they need. By June 2015, every student in Clarke County should have access to an Internet connected device both in school and out. The division will need to work with broadband providers, technology vendors, and government agencies to make this happen. Grant funding is often available through various rural broadband initiatives and private foundations. Clarke County Public Schools will need to identify families that don't already have access to the Internet at home and develop a plan to

address possible inequities to the instructional process, where technology is a primary driver of instruction.

The Infrastructure for Learning and Cloud Computing – In a cloud computing environment, applications such as word processors, database software, and email do not exist on the client computer or access device. Instead, they are available via a service provider, typically over the Internet. Servers and storage are maintained by the service provider and located in a professionally managed datacenter. Normally, local technology support is only responsible for ensuring that client devices can connect to the cloud. One example of a cloud computing environment is the partnership between North Carolina State University and IBM to provide services to other North Carolina universities, community colleges, and schools. Another example is Microsoft's Live@edu initiative to provide cloud computing services to K-12 schools around the world. The Microsoft service is available at no charge and the Clarke County Public Schools Technology Department is currently evaluating the system. Live@edu provides every student and educator with email, calendar, and instant messaging via Outlook Live with a 10 GB inbox. The service also includes the ability to edit and share MS Office documents and 25 GB of file storage per user. In addition, collaborative work spaces can be setup for individual classes, student organizations, or faculty working groups. All communications can be monitored to help prevent cyber bullying or other inappropriate behavior. There is also an option to run such a system as a "closed system" and not allow students to communicate with external email systems. A more complete evaluation is needed, including training and a pilot rollout to determine if the system will work for our division or has instructional merit and value. Division ITRTs will need to work with the Technology Services Administrator to evaluate Live@edu and other appropriate learning spaces.

Wireless and Wired Networks – Determining the proper balance between wired and wireless networks is not an easy task given the constraints of these systems. Wired systems require computers to be stationary, but they generally provide more bandwidth than wireless access points and devices. However, since the IEEE 802.11n standard was ratified last year, wireless systems have narrowed the gap considerably in regard to data transmission. A typical wireless access point can now provide up to 300 Mbps of bandwidth. The typical wired network connection can carry either 100 Mbps or 1 Gbps. The greatest disadvantage to wireless is that the bandwidth is shared by the number of computers that are connected to each access point; this is not true of a properly installed wired network. The full gigabit of bandwidth is available to the computer.

For most applications, like general Web browsing or small file sharing, this is not a problem. However, applications like streaming video and large file sharing can overload a wireless network, especially if 30 or so computers are connected at once. Typically, wireless access points are installed in such a way as to cover a small section of the building. Normally, this configuration works fine; problems can occur, however, if multiple laptop carts (24 – 30 laptops each) are in the same area and connected to the same access point. Without a doubt, it will be necessary to install complete wireless coverage in all of our buildings as quickly as funding will allow. However, the first phase of any wireless implementation will need to be focused on coverage, not capacity. Once we have covered the buildings and surrounding areas, we can monitor usage and supplement the network with additional access points where necessary.

So… what does this all mean for the Clarke County Public Schools?

- We believe we must focus on **ACCESS**, including ongoing **technology refresh**, the improvement of our **network & telephony** services, and the development of **security** systems to keep data and people safe, and provide a **sustainable support infrastructure** to ensure our success.
- We believe we must focus on **INFORMATION**, using **data-driven decision making**, more effective **online communication & engagement** strategies, with a renewed emphasis on **curriculum development & integration**
- We believe that **INNOVATION** should be the cornerstone of our work, with **student-centered technology** at the heart of our instructional program, supported by robust and ongoing **professional development** as well as in-house **research & development**.

To meet these and other goals, we will, over the next 12 to 24 months:

- Develop a more robust infrastructure at Boyce and Cooley, with the addition of wireless technology.
- Add a variety of end-user technologies to our elementary, middle and high schools, including instructional devices, projectors, and computers.
- Enhance our ability to communicate with members of our community through new web based portals and through the use of Software as a Service (SaaS) applications.
- Help our students, staff, and School Board become more technologically competent through the efforts of increased staffing in instructional technology who will focus both on the end user and the systems that they use.
- Continue to develop and refine our technology plan, its goals and objectives, so that we can document our progress.

As this technology plan is designed to be a work in progress, additional time and effort will need to be spend to provide additional details as to the "what". Section V of this plan offers a first glimpse of the incredible amount of work that needs to be done.

V. Actions (Goals, Objectives, Strategies, and Evaluation Strategies)

A. State goals and objectives with local strategies and measures

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.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Research appropriate materials and software for improved student performance	Semester	Technology Services Administrator, Director of Curriculum & Instruction, Director of Pupil Personnel Services, ITRT, Alternative Education program administrator and staff	Federal funds, staff development	Sharing at Central Office administrative meetings, sharing at Principal meetings
Regularly inform school division staff about emerging technologies for instruction, business practice, and administration	Annually	Technology Services Administrator, Director of Curriculum & Instruction, ITRT	State funds, Federal funds	Vendor demonstrations, technology conferences, webinars, visits to neighboring divisions
Ensure that computing policies, procedures, and technologies are in place and that resources are secure and recoverable	Annually	Technology Services Administrator, Director of Operations	None	School Board minutes, approved policies, internal verification
Maintain an up-to-date Acceptable Use Policy (AUP) and effectively use network filtering solutions	Annually	Technology Services Administrator, Director of Operations	None	School Board minutes, approved policies, internal verification

Objective 1.2: Provide the technical and human infrastructure necessary to support real, blended, and virtual learning environments.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Research additional technical and hardware needs for equipping new high school	June 2011	Technology Services Administrator, Superintendent	State and Federal funds, Capital Improvement funds	Sharing at Central Office Administrative meetings, sharing at

				Principal Meetings
Research additional technical and infrastructure needs for equipping new high school	June 2011	Technology Services Administrator, Superintendent	State and Federal funds, Capital Improvement funds	Sharing at Central Office Administrative meetings, Sharing at Principal meetings
Research additional technical hardware needs of high school when converted to elementary school campus	June 2012	Technology Services Administrator, Superintendent	State and Federal funds, Capital Improvement funds	Sharing at Central Office Administrative meetings, Sharing at Principal meetings
Research additional technical infrastructure needs of high school when converted to school elementary campus	June 2012	Technology Services Administrator, Superintendent	State and Federal funds, Capital Improvement funds	Sharing at Central Office Administrative meetings, Sharing at Principal Meetings
Ensure all schools have a sufficient number of network connections to support the high bandwidth requirements of instructional and administrative applications	Semester	Technology Services Administrator, Superintendent	Capital Improvement funds	Administrative updates, School Board meetings and meeting minutes
Ensure that each school or sites local area network has reliable high-speed access to the Internet capable of supporting instructional and administrative applications and initiatives, as appropriate	Short term goal; semester. Long term goal; annually.	Technology Services Administrator, Superintendent	Capital Improvement funds	Administrative updates, School Board meetings and meeting minutes
Implement an integrated suite of instructional and administrative applications supported by a standards-based enterprise architecture for K-12 schools	Annually	Technology Services Administrator, ITRT, Superintendent, Building Administration, Central Office Administrators	Technology funding	Technology updates, purchase orders
Ensure that adequate support personnel are in place to operate and support the K-12 school technology infrastructure	Annually	Technology Services Administrator, Assistant Superintendent, Superintendent, School Board	Local Funding	IPALS report
Ensure that support personnel for K-12 school technology infrastructure have appropriate technical skills	Annually	Technology Services Administrator, Assistant Superintendent, Director of Curriculum & Instruction	Quality staff development opportunities	Course grades, completion certificates

Objective 1.3: Provide high-quality professional development to help educators create, maintain, and work in a variety of learner-centered environments.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Provide technology leadership activities are to K-12 educational technology stakeholders	On-going	Assistant Superintendent, Superintendent, Director of Curriculum & Instruction, Director of Pupil Personnel Services, Director of Alternative Education program administrator, ITRT	State and Federal Funds	Certificates of completion from Power School training, Certificates from educational technology conferences, documented training held by ITRT
Administer grant programs and seek alternative sources of funding that support educational programming	On-going	Technology Services Administrator, Director of Joint Administrative Services, Superintendent	Grant opportunities	Documentation required for audit of grant programs
Partner with teacher education institutions, businesses, organizations, and private entities in the implementation of technology-related grants focusing on technology integration	On-going	Technology Services Administrator, Director of Curriculum & Instruction, Assistant Superintendent, Superintendent	Grant opportunities	Documentation required for audit of grant programs

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.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Ensure teacher and technology leader participation in State Institutes as VDOE reviews curriculum	Monthly	Director of Curriculum & Instruction, Building Principals	State Funding	Certificates of Attendance
Ensure staff participation in review of pacing guides	Annually	Building Principals	None	Documentation of time spent with teams, grade levels,

				partners to review and revise pacing guides
Ensure staff review of benchmark tests	Quarterly	Building Principals	None	Changes made to Interactive Achievement
Ensure participation with other divisions in The American History Grant	On-Going	Building Principals, Director of Curriculum & Instruction, select instructional personnel	None	Documentation of attendance by history teachers, course grades, certificates of completion for workshops & seminars, lesson plans indicating integration of material used
Ensure participation with other divisions in Science Grant activities	On-Going	Building Principals, Director of Curriculum & Instruction, select instructional personnel	None	Documentation of attendance by science teachers, course grades, certificates of completion for workshops & seminars, lesson plans indicating integration of material used

Objective 2.2: Actualize the ability of technology to individualize learning and provide equitable opportunities for all learners.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Implement Individualized Learning Plans as mandated by VDOE	Annually	Guidance Counselors, Building Principals	None	Student Learning Plans
Implement on-line resources to include pacing guides, curriculum, and lesson planning	Annually	School Board Office Administrators, Building Administrators	State and Federal funds	Software applications that allow for the stated activities

Research appropriate software applications for K-12 instruction	Semester	School Board Office Administrators, Technology Services Administrator, Building Administrators, ITRT	State and Federal Funds	Software applications that allow for the stated activities
Successfully participate in the Virginia web-based SOL Technology Initiative	Annually	School Board Office Administrators, Building Administrators	State and Federal Funds	Addition of elementary grade levels to on-line testing one or more grades per year via wireless technology
Ensure division staff use student data base to review data for instructional decision making; training should be provided to target specific groups and should be on-going.	Monthly	Technology Services Administrator and technology staff, Testing Coordinator, Data Base administrator, Director of Curriculum and Instruction	State and Local Funds	Documentation of attendance for training, agenda of materials covered, component of division staff development plan

Objective 2.3: Facilitate the implementation of high-quality Internet and social media safety programs in schools.

Action Step(s)	Projected Time Frame	Completion Date	Person(s) Responsible	Evidence of Implementation
Implement K-12 internet safety program	On-going	On-going	ITRT	Evidence of curriculum, class schedule documentation, and work plan

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.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation

Ensure staff attendance at conferences, workshops and seminars based on needs as identified by the school division and ITRT staff	Monthly	Building Principals, Director of Curriculum & Instruction, Assistant Superintendent	State and Federal funds	Certificates of completion, dates logged in AESOP, spreadsheet of staff development offerings in C& I Office, minutes of faculty meeting staff sharing
Facilitate high quality IB training and staff development	Annually	Coordinator of IB program, High School Principal, Director of Curriculum and Instruction	State and local funds, CCCC/CCCF	Certificates of Attendance, lesson plans to reflect implementation
Ensure quality division staff development targeting integration of technology into the classroom	On-Going	ITRT, Building Administrators, Director of Curriculum & Instruction	Local funds	Documentation of attendance, recertification points, improvement of instruction
Research on-line teacher evaluation and walk through forms for more timely communication regarding teaching and learning in the classroom	Annually	Central Office Administration, Building Administration	State and Federal funds	Updates at administrative meetings, vendor demonstrations, evaluation of BETA programs

Objective 3.2: Ensure that students, teachers, and administrators are information and communication technologies (ICT) literate.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Establish partnerships for identifying and delivering effective technology training to assist educators as they help students achieve at high standards	Annually	Superintendent, Assistant Superintendent, Building Administrators, Technology Services Administrator, ITRT	None	Report of teachers who have met technology standards, documented remediation time for teachers not currently technology certified, course grades
Provide access to classes, training, and resources	Annually	Assistant Superintendent, Director of Curriculum &	Course reimbursement,	Course grades, certificates of

pertaining to integrating technology effectively and appropriately		Instruction	appropriate workshops & seminars	completion from workshops & seminars, documentation of staff development provided by CCPS
Ensure that the high school schedule reflects courses for 21st century learners	Annually	Guidance Counselors, High School Principal, Teachers, School Board Office staff	None	Master Schedule
Ensure that teachers provide opportunities for students to demonstrate 21st century learning skills	Weekly	Building principals, instructional leaders, teachers	Conferences and internal staff development conducted by ITRT	Lesson Plans and performance based assessment tools

Objective 3.3: Implement technology-based formative assessments that produce further growth in content knowledge and skills development.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Establish dates for staff to review question bank in Interactive Achievement and review same	Summer 2010, 2011, 2012, 2013, 2014, 2015	Building Administrators, Central Office Administrators	State Funding	Time sheets of staff who participate
Research online assessment programs	Annually	Director of Curriculum & Instruction, Testing Coordinator, select staff	None	Updates to Administrative Team
Establish dates for teachers to discuss, plan, and adjust formative assessments	Weekly	Building Principals	None	Team minutes, grade level minutes, department minutes

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.

Action Step(s)	Time	Person(s) Responsible	Other Resources	Evidence of

	Frame		Needed	Implementation
Ensure that computer laptop carts are available to staff and students; ensure compliance with developed standard	Annually	Technology Services Administrator, ITRT, TRT	State and local funds	Addition of lap top carts to grade levels to coincide with testing mandates
Computers in labs of each building to be reviewed; ensure compliance with developed standard	Semester	Technology Services Administrator, ITRT, TRT	State and local funds	Addition of computers in computer labs

Objective 4.2: Provide technical and pedagogical support to ensure that students, teachers, and administrators can effectively access and use technology tools.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Demonstrated evidence that teachers routinely access online testing for students to practice using online testing tools	Quarterly	Building Principals	None	Lesson plans, sign-in sheets from computer labs, improvement of instruction
Demonstrated evidence that teachers provide appropriate lessons and tasks to stretch student understanding and demonstration of mastery of technology skills	Quarterly	Building Principals	None	Lesson plans, student projects, performance based assessment, grade books, improvement of instruction
Provide staff development to assist teachers and administrators as they use and promote the technology tools that are available in the division	Monthly	ITRT	None	Documentation of training provided

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.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Disaggregate test data every 9-weeks and report out as to use of data and methodology to improve instruction for AYP subgroups; PALS, benchmarks, SOL, teacher made tests	End of benchmark period	Grade Level teams, department chairs, building administration, School Board Office Administration	SPBQ	Action plans noting areas of weakness and strength. Plans note specific teacher and/or department interventions and time-lines.
Use EIMS and Pearson data to identify strengths & weaknesses, plan remediation and/or enrichment and identify at-risk students	Monthly	Building Administrators	None	Faculty meeting minutes, Principal discussions at grade level, team/department meetings

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.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Design and implement information systems interface(s) to provide staff members the ability to use appropriate and effective data to make decisions	Annually	Technology Services Administrator	None	State reports, student data uploads for assessments, yet to be purchased Special Education (SPED) data system for IPE development with SIF agent to PowerSchool
Review web-based IEP system	June 2011	Director of Pupil Personnel Services	State Funding	IEPs completed online, accommodation report for

				assessments
Review Pearson Benchmarking System	June 2013	Director of Curriculum & Instruction, Testing Coordinator	None	Decision to purchase or pass made

Objective 5.2: Provide support to help teachers disaggregate, interpret, and use data to plan, improve, and differentiate instruction.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Use interactive whiteboard/computer technology so that teachers can review assessment results from benchmark software and Virginia Department of Education state mandated assessments. Information will be manipulated to disaggregate data by subgroup to isolate weaknesses for remediation. Information will be used to analyze instruction to determine strengths and weaknesses to appropriately plan for staff development needs. Data Coaches will assist teachers in breaking down assessment results into meaningful data to adjust instruction within the classroom.	Annually	Technology Services Administrator, Testing Coordinator, Director of Curriculum and Instruction Note- Data Coaches are desired; funding sources, job descriptions, work plans, etc. have yet to be determined.	Funding for staff development time, data coach(es), etc.	State reports, student data uploads for assessments, future SPED data system for IEP development

Objective 5.3: Promote the use of technology to inform the design and implementation of next generation standardized assessments.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Use computers to create online benchmark assessments tailored to teacher pacing guides to provide teachers information with regard to student mastery of Standards of Learning. Review benchmark and other assessments by re-working problems using interactive whiteboard technology to have students demonstrate work, teachers to facilitate instruction. Use online computer technology for delivery of state mandated assessments. Use interactive whiteboard/computer technology for administrators to review results of state mandated assessments by building, teacher, subject, and student sub group with a goal of identifying strengths in instruction and areas of weakness.	On-Going	Technology Services Administrator, Director of Curriculum and Instruction, Building Principals, Testing Coordinator, licensed teachers	None	State reports, student data uploads for assessments, future SPED data system for IEP development

B. Any additional local goals, objectives, strategies, and measures tied to division mission, vision, etc.

Action Step(s)	Time Frame	Person(s) Responsible	Other Resources Needed	Evidence of Implementation
Develop additional detail with a "rolling" 18 month plan of technology actions that may be taken given available resources, to include both funding, division level IT staff, and school based ITRT and TRT staffing.	Ongoing – see implementation of evidence column	Technology Services Administrator; division "tech team" (to be defined)	ITRT staffing TRT staffing Secretarial support	A "What We Accomplished" school board presentation in May or June of each year, to be followed up with the annual presentation of

Blank Space	Blank Space	Blank Space	Blank Space	the Division's Technology plan in December of each year.

VI. References

U.S. Department of Education, Office of Education Technology. 2010. *National Education Technology Plan 2010: Transforming American Education, Learning Powered by Technology.* Washington, DC: U.S. Department of Education.

http://www2.ed.gov/about/offices/list/os/technology/index.html

Minneapolis Public Schools Technology Plan

http://www.mpls.k12.mn.us/mpls/pages/static_district_homepage.asp

International Society for Technology in Education

http://www.iste.org/standards.aspx

Boston Public Schools' Learning & Information Network for the Community Technology Plan

http://boston.k12.ma.us/linc3/Index.html

Appendix 1 - Attached

Timetable and budget for goals, objectives, strategies, and measures (at a minimum, Appendix 1 must be updated after three years, even if the plan covers six years); see attached.

Appendix 2

Division AUP (with most recent date it was amended): As required by law, it must include all elements.

§ 7 – 9 Acceptable Computer System Use

The Clarke County School Board provides a computer system, including the Internet, to promote educational excellence for both students and faculty by facilitating resource sharing, innovation and communication. The term computer system includes, but is not limited to: hardware, software, data, communication lines and devices, so called "wireless" network equipment, terminals, printers, CD-ROM devices, tape drives, servers, mainframe and personal computers, the Internet and other internal or external networks.

All use of the Division's computer system must be (1) in support of education and/or research, or (2) for legitimate school business. Use of the computer system is a privilege, not a right. Any communication or material used on the computer system, including electronic mail or other files deleted from a user's account, may be monitored or read by school officials.

The Division Superintendent shall establish administrative procedures and plans, for the School Board's approval, containing the appropriate uses, ethics and protocol for the computer system. The procedures and plans shall include:

(1) a prohibition against use by division employees and students of the division's computer equipment and communications services for sending, receiving, viewing or downloading illegal material via the Internet;

(2) provisions, including the selection and operation of a technology protection measure for the division's computers having Internet access to filter or block Internet access through such computers, that seek to prevent access to:

(a) child pornography as set out in Va. Code § 18.2-374.1:1 or as defined in 18 U.S.C. § 2256;

(b) obscenity as defined by Va. Code § 18.2-372 or 18 U.S.C. § 1460; and

(c) material that the school division deems to be harmful to juveniles as defined in Va. Code § 18.2-390, material that is harmful to minors as defined in 47 U.S.C. § 254(h)(7)(G), and material that is otherwise inappropriate for minors;

(3) provisions establishing that the technology protection measure is enforced during any use of the Division's computers by minors;

(4) provisions establishing that the online activities of minors will be monitored;

(5) provisions designed to protect the safety and security of minors when using electronic mail, chat rooms, and other forms of direct electronic communications;

(6) provisions designed to prevent unauthorized online access by minors, including "hacking" and other unlawful activities by minors online;

(7) provisions prohibiting the unauthorized disclosure, use, and dissemination of personal information regarding minors; and

(8) a component on Internet safety for students that is integrated in the division's instructional program.

Use of the School Division's computer system shall be consistent with the educational or instructional mission or administrative function of the Division as well as the varied instructional needs, learning styles, abilities and developmental levels of students. The Division's computer system is not a public forum.

Each teacher, administrator, all other employees of the School division including volunteer employees, volunteers, student and parent/guardian of each student shall sign the Acceptable Computer System Use Agreement specified in policy § 7 – 10 Acceptable Use Agreement,

before using the Division's computer system. The failure of any student, volunteer, teacher, administrator or any other employee of the School division including volunteer employees to follow the terms of the Agreement, this policy or accompanying regulation may result in loss of computer system privileges, disciplinary action, and/or appropriate legal action.

The School Board is not responsible for any information that may be lost, damaged or unavailable when using the computer system or for any information retrieved via the Internet. Furthermore, the School Board will not be responsible for any unauthorized charges or fees resulting from access to the computer system. The Division Superintendent shall submit to the Virginia Department of Education this policy and accompanying regulation biennially.

Adopted: July 16, 2007
December 17, 2001
August 16, 1999
August 25, 1997

Legal Refs: 18 U.S.C. §§ 1460, 225647 U.S.C. § 254 Code of Virginia, 1950, as amended, §§ 18.2-372, 18.2-374.1:1, 18.2-390, 22.1-70.2, and 22.1-78

Appendix 3

Summary of Internet Safety Program (including process for adjusting program based on evaluation). Note – Policy needs revision; implementation and compliance will become the responsibility of the division's ITRT.

§ 7 – 9A – 1 Internet Safety Plan (Instruction)

The review and amending of the Internet Safety Plan (Instruction) is the responsibility of the Superintendent's Internet Safety Committee (see Regulation § 7 – 9A Acceptable Computer System Superintendent's Internet Safety Committee).

Integrating Internet Safety into the K – 12 Instructional Program

Step One: Conduct a Needs Assessment – Completed June 2006.

Purpose – To develop Professional Development by:

1. Determining what teachers knew about Internet Safety
2. Determining what teachers "thought" they knew about Internet Safety
3. Determining what teachers should know about Internet Safety

Step Two: Internet Safety Awareness Training.

Initial action – the School Resource Officer provided by the Clarke County Sheriff's Department has delivered preliminary instruction to students on Internet Safety during the 2006 – 2007 school year. Ultimately – Training Courses are in the process of being developed utilizing Blackboard.com. Four (4) Courses will be developed for implementation September 07:

1. Administrators, School Resource Officers, and Counselors:
    a. Focus on laws and overall concerns with Internet Safety
    b. Online Training
    c. Use of NetSmartz® resources available from the National Center for Missing and Exploited Children and the Boys & Girls Clubs of America

2. Teachers, Instructional Technology Resource Teachers (ITRT's), Media Specialists:
    a. Online training Classes
    b. Lesson Plans and suggestions for integrating into regular instruction
    c. Use of NetSmartz® resources available from the National Center for Missing and Exploited Children and the Boys & Girls Clubs of America

3. Students
    a. Internet Safety Course with activities for learning about:
        i. Safe Navigation of the Internet
        ii. Copyright Infringement
        iii. Internet Manners
        iv. Developing an appropriate User Name (implications/projections)
        v. Profiling and how they may be profiled

4. Community:
    a. Online training Classes
    b. Units will be developed to provide information about the Internet that everyone should be aware of (Laws, online predators, profiling, keeping their children safe, etc.)
    c. Use of NetSmartz® resources available from the National Center for Missing and Exploited Children and the Boys & Girls Clubs of America

Step Three: Implementation and Evaluation:

Courses are being developed and evaluated using the guidelines provided by the Virginia Department of Education Rubrics. Evaluation will be by the Internet Safety Committee (Instruction).

Step Four: Review and Edit

The Superintendent's Safety Committee is tasked with the responsibility for review and amendment of the Internet Safety Plan (Instruction).

Adopted: May 30, 2007

Legal Refs: Code of Virginia, 1950, as amended, §§ 22.1-70.2 and 22.1-78

Appendix 1 - CCPS Technology Related Hardware Only - Five Year Projections

Cooley Elementary School (includes Berryville Primary)

Phased Deployment

Mobile Labs	**Qty**	**Unit Price**	**Cost**	**2011**	**2012**	**2013**	**2014**	**2015**
Laptops (24 per cart)	6	24000	144000	48000	48000	24000	24000	24000
Laptop Carts	6	2000	12000	4000	4000	2000	2000	
Laptops - Primary (24 per cart)	3	24000	72000			24000	24000	24000
Laptop Carts	3	2000	6000			2000	2000	2000
	Total		**234000**	**52000**	**52000**	**52000**	**52000**	**50000**

Desktop Computers	**Qty**	**Unit Price**	**Cost**	**2011**	**2012**	**2013**	**2014**	**2015**
Computer Labs (27 per room)	2	27000	54000	27000	27000			
Classroom Computers (2 per class)	40	2000	80000			50000	30000	50000
Teacher Computers	40	1000	40000	25000	15000			
	Total		**174000**	**52000**	**42000**	**50000**	**30000**	**50000**

Interactive Projection Device	**Qty**	**Unit Price**	**Cost**	**2011**	**2012**	**2013**	**2014**	**2015**
Interactive Projector	40	2500	100000	20000	20000	20000	20000	20000
Installation Cost	40	500	20000	5000	5000	5000	5000	5000
	Total		**120000**	**25000**	**25000**	**25000**	**25000**	**25000**

Wireless Network	**Qty**	**Unit Price**	**Cost**	**2011**	**2012**	**2013**	**2014**	**2015**
Wireless Access Points	25	500	12500	7500	5000			
Installation	25	200	5000	3000	2000			
Software License	1	1600	1600	1600	1600			
Total			**19100**	**12100**	**8600**	**0**	**0**	**0**

Boyce Elementary School

Mobile Labs	**Qty**	**Unit Price**		**2011**	**2012**	**2013**	**2014**	**2015**
Laptops (24 per cart)	6	24000	144000	48000	48000	24000	24000	24000
Laptop Carts	6	2000	12000	4000	4000	2000	2000	

		Total		**156000**	**52000**	**52000**	**26000**	**26000**	**24000**
Desktop Computers	**Qty**	**Unit Price**	**Cost**		**2011**	**2012**	**2013**	**2014**	**2015**
Computer Labs (27 per room)	1	27000	27000				27000		
Student Computers (2 per class)	24	2000	48000					24000	24000
Teacher Computers	24	1000	24000			24000			
		Total	**99000**		**0**	**24000**	**27000**	**24000**	**24000**
Interactive Projection Device	**Qty**	**Unit Price**	**Cost**		**2011**	**2012**	**2013**	**2014**	**2015**
Interactive Projector	24	2500	60000		12000	12000	12000	12000	12000
Installation Cost	24	500	12000		2500	2500	2500	2500	2500
		Total	**72000**		**14500**	**14500**	**14500**	**14500**	**14500**
Wireless Network	**Qty**	**Unit Price**	**Cost**		**2011**	**2012**	**2013**	**2014**	**2015**
Wireless Controller	1	8000	8000		8000				
Wireless Access Points	20	500	10000		5000	5000			
Installation	20	200	4000		2000	2000			
Software License	1	1600	1600		1600	1600			
		Total	**23600**		**16600**	**8600**	**0**	**0**	**0**
Johnson-Williams Middle School									
Mobile Labs	**Qty**	**Unit Price**			**2011**	**2012**	**2013**	**2014**	**2015**
Laptops (24 per cart)	5	24000	120000		24000	24000	24000	24000	24000
Laptop Carts	5	2000	10000		2000	2000	2000	2000	2000
		Total	**130000**		**26000**	**26000**	**26000**	**26000**	**26000**
Desktop Computers	**Qty**	**Unit Price**	**Cost**		**2011**	**2012**	**2013**	**2014**	**2015**
Tech Classroom (27 computers)	1	27000	26000	(replaced in 2010)					
Computer Labs (27 per room)	4	27000	108000		33000	27000	27000	27000	27000
Student Computers (1 per class)	33	1000	33000						
Teacher Computers	33	1000	33000		33000				

		Total	**200000**	**66000**	**27000**	**27000**	**27000**	**27000**
Interactive Projection Device	**Qty**	**Unit Price**	**Cost**	**2011**	**2012**	**2013**	**2014**	**2015**
Interactive Projector	33	2500	82500	17500	17500	17500	17500	17500
Installation Cost	33	500	16500	3500	3500	3500	3500	3500
		Total	**99000**	**21000**	**21000**	**21000**	**21000**	**21000**
Wireless Network	**Qty**	**Unit Price**	**Cost**	**2011**	**2012**	**2013**	**2014**	**2015**
Wireless Access Points	25	500	12500			6250	6250	
Installation	25	200	5000			2500	2500	
Software License	1	1600	1600			1600		
		Total	**19100**			**10350**	**8750**	

Division Totals

2011	2012	2013	2014	2015
337200	300700	278850	254250	261500

Note - Totals do not include non-licensed staff refresh or the development and improvement of infrastructure other than that is noted on these pages.

Support staff and administrative refresh	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Infrastructure development - capital	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Infrastructure development - wiring	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
	$ 402,200	$ 365,700	$ 343,850	$ 319,250	$ 326,500

Assumed Overall	$ 1,757,500
Assumed Annual Average	$ 351,500

Note - Does not include new HS refresh, hardware, infrastructure, or software.

To: Clarke County Joint Administrative Services Board

Copies: Tom Judge

From: John Staelin

Subject: ERP Systems

Date: March 25, 2012

I am writing to explain my position regarding JAS's proposal to have the County purchase an ERP system. As you all know, I have voiced a variety of concerns in previous meetings about this issue. I felt it only fair that I summarize my views on paper.

My Concerns:

1. **We do not know what an ERP system would ultimately cost.** The estimates in The Governors Finance Officers Association Report ranged from $400,000 to $1,100,000 in "cash costs" plus $125,000 to $350,000 in "non-cash" costs. That is a huge range. I think it is important that the County get a better understanding of what the total cost is likely to be before it commits to implementing anything of this size.

2. **The payback is unclear.** The Governors Finance Officers Association Report said Clarke should experience productivity improvements from a reduction in non-productive time if an ERP system is implemented. However, the report also states that Clarke should not expect to see any staff savings (no reductions in positions). Further the report warned that unless staff is properly managed the predicted productivity savings will not be attained as employees tend to be slow to give up the systems they personally designed and use. Finally, the report predicts that the County would likely have to add two to four employees in its IT department unless a "hosted" ERP system is selected. Tom Judges' analysis predicts that the County may avoid hiring two people in the future if business activity increases. He may be right but we really should know more about what an ERP system could do for Clarke before we make any commitment.

3. **We do not know who the winners and losers will be in the ERP industry.** We will save a lot of money and hassles over time if we select a vendor that has lots of clients our size right here in Virginia. We will be able to share the cost of system updates as laws change and we will be able to adopt "best practices" from other jurisdictions of our size.

4. Related to all the above, **technology is changing rapidly.** Cloud computing is becoming much more popular. Handheld devises are being used in new ways. When we do go ahead with this, we need to make sure we adopt a flexible ERP system that will keep our options open as technology changes.

5. **Clarke is too small to be a leader in the ERP area.** We cannot afford to be on the bleeding edge of technology. We should be adopters of proven systems, systems used by more than a handful of counties/cities our size.

Having said the above I want to make it clear that I believe Clarke County will ultimately implement an ERP system and that JAS should continue to investigate this issue. Some possible next steps include:

1. Work with Treasurer's Association, VACo, VML or similar organizations to find out which jurisdictions in Virginia have implemented an ERP system and document the vendors and uses they selected. This would allow us to see which vendors are gaining a critical mass with jurisdictions of our size.

2. Create a list of all the different IT systems used here in the County, documenting in an abbreviated form what each system does.

3. Create a list of activities that are not automated today but which ideally should be automated in an ERP system.

   The lists created in numbers 2 and 3 above will be crucial in evaluating and selecting ERP providers. Ultimately we will need to compare the functionality of any proposed system to the processes we complete today. That is the only way you will be able to know which current systems can be replaced by any proposed ERP system and which will have to stay. Without such data it will be virtually impossible to compute an ROI.

4. Decide if you have any technological demands at this time (e.g. Cloud computing vs. local or hosted computing).

5. Once you have the data above you can ask the vendors who seem to have "critical mass" here in Virginia to come in and give you a presentation. In that meeting each vendor should be able to give you a ballpark description of the cost of implementation as long as you have all the information described above.

I am sure you can think of other important tasks that need to be accomplished but I hope this gives you food for thought.