Burrillville School Department

Technology Plan Addendum for the 2014-15 school year

Introduction

While the technology mission, vision and beliefs of the Burrillville School Department remain consistent, developments across the country around the Common Core State Standards and the accompanying Partnership for Assessment of Readiness for College and Careers (PARCC) online student assessments have generated discussions about how the district will, at a minimum, support these new requirements, and continue to best bolster teaching and learning.

New district curriculum, instruction and assessment initiatives necessitate more access to technology by students within their classrooms. Students need to be able to access technology "centers" within their classroom in order to use these tools to close gaps in their performance. The upcoming PARCC assessments will also require greater access to technology in order to allow students to participate in the online assessment, in labs and, possibly, within the classroom (provided that all students in the classroom participate at the same time).

One of the district's goals as stated on page 7 of the Technology Plan, "Establish mobile stations at each school that include various technology tools such as; a computer, a secure cart, speakers, a projector, a interactive slate, a visual presenter, a digital video/image camera, a webcam." Based upon feedback from teachers and principals, particularly in light of the RAISE writing program, the district needs to provide greater access to projectors and document cameras/visual presenters to support teachers in their instruction.

In response to both of these overall needs, the district has assembled a 3-year capacity plan that will increase access to technology by students within their classrooms, as well as providing teachers instruction and presentation tools to support new curriculum initiatives. This 3-year plan DOES NOT include upgrading the network infrastructure of the schools, which will be necessary to increase network bandwidth within each school network and to ensure that school networks do not suffer from performance issues when large numbers of

students are using technology for the PARCC assessment. This infrastructure will need to be addressed by a combination of the RIDE Wireless Classroom Initiative, capital improvement funding, and operational funding.

The 3-year plan to upgrade technology access began in the summer of 2012, however clearer, more specific recommendations from RIDE and the PARCC consortium necessitated adjustments to the plan, beginning in the summer of 2013. Changes are indicated by the strikeouts..

3-Year Technology Capacity Plan

	Year 1 (12-13)	Year 2 (13-14)	Year 3 (14-15)
High School Goal: a demonstration/ presentation station for every teacher (shared stations for PE) and additional capacity to accommodate PARCC testing	17 demonstration/presentation stations (C)	~~17 demonstration/presentation stations (C)~~ 2 Carts of 30 Lenovo Thinkpad X131e Chromebooks	~~9 demonstration/presentation stations (C)~~ 1 Cart of 30 Lenovo Thinkpad X131e Chromebooks
Middle School Goal: For math, science and English classrooms, a technology centers (which can be used for instruction and as additional capacity to accommodate PARCC testing) and one mobile presentation unit per team	6 shared, mobile demonstration/presentation stations (B)	~~9 Six-station classroom setups (A)~~ 1 Cart of 30 Lenovo Thinkpad X131e Chromebooks	~~9 Six-station classroom setups (A)~~ 2 Carts of 30 Lenovo Thinkpad X131e Chromebooks
Elementary Schools	35 Six-station classroom setups	~~8 shared, mobile~~	2 Carts of 30 Lenovo Thinkpad

(Grades 2-5) Goal: A technology center per classroom teacher (which can be used for instruction and as additional capacity to accommodate PARCC testing) and one mobile demonstration station per grade per building	(A)	~~demonstration/presentation stations (B) @ $3,235 apiece~~ **~~$25,880~~** 2 Carts of 30 Lenovo Thinkpad X131e Chromebooks	X131e Chromebooks

(A) Configuration for additional student access to technology within the classroom and to accommodate PARCC assessments

- ~~6 stations~~
- ~~nComputing "virtual" desktops~~
  - ~~1 traditional desktop tower (teacher/host)~~
  - ~~6 virtual desktop appliances~~
    - ~~6 stations~~
    - ~~6 PS2 mice~~
    - ~~6 PS2 keyboards~~
  - ~~6 LCD monitors~~
  - ~~Operating System licensing~~
    - ~~Microsoft Server 2008 R2 for each NComputing host~~
    - ~~Microsoft Remote Desktop CALs for each NComputing host~~
  - ~~2 Power strips~~
  - ~~8-port Gigabit network switch~~
  - ~~Category 6 patch cables~~

- Chromebook Cart
    - 30 Lenovo Thinkpad X131e Chromebooks
    - 30 Google Apps Management console & support
    - 1 Storage, security and charging cart
    - District is discussing possibility sets of headphones (PARCC assessments) and security cables for when Chromebook carts are split up and distributed amongst classrooms (when not being used for PARCC)

(B) Configuration for a shared, mobile demonstration/presentation station to be used amongst a grade level or team

Mobile station per grade level/team that includes a laptop, projector, visual presenter/document camera, speakers, power strip, extension cord, and security cable.

- 14" laptops w/extended warranty (accidental coverage)
- Visual presenter/document camera
- DLP/LCD projector w/speakers, minimum 3000 lumens, XGA (1024 x 768)
- Cart with power strip
- 25ft extension cord
- Twin security cable/lock

(C) Configuration for a demonstration/presentation station for a classroom

Utilizing the existing teacher station computer in each classroom, a mobile cart per classroom that includes a projector, visual presenter/document camera, speakers, power strip, extension cord, and security cable.

- Visual presenter/document camera
- DLP/LCD projector w/speakers, minimum 3000 lumens, XGA (1024 x 768)
- Cart with power strip

- 25ft extension cord
- Twin security cable/lock

Technology Infrastructure Capacity Goals

As previously stated, upgrading the network infrastructure of the schools will be necessary to increase network bandwidth within each school network and to ensure that school networks do not suffer from performance issues when large numbers of students are using technology for the PARCC assessment. This infrastructure will need to be addressed by a combination of the RIDE Wireless Classroom Initiative, capital improvement funding, and operational funding.

The Burrillville School Department made the local investment several years ago to install wireless networks in all of our schools. However, these networks were not designed to support the sheer number and density of devices that would accompany a student 1 to 1 computing initiative or online PARCC assessments. More importantly, the backend network infrastructure (switching and cabling) in our schools cannot handle the amount of bandwidth and "Power over Ethernet" (PoE) capacity that will be required. Therefore, it is our district's priority to upgrade our backend switching and cabling infrastructure so that we have the capacity to support greater wireless access to staff and students.

Burrillville High School

The existing cabling in the school is a mixture of Category 5 and 5e copper structured UTP cabling. While a fiber optic backbone connects all wiring closets and distribution frames in the school, the existing cabling is older 62.5 micron multi-mode fiber and may not be able to support 10Gbps speeds. Existing switching is a mixture of Cisco 3500XL and HP ProCurve PoE edge switches and an HP ProCurve 5412zl chassis switch at the core. No switches currently provide 1Gbps connections to clients.

The existing wireless network is managed by an HP ProCurve MSM765 zmodule controller installed in the HP ProCurve 5412 core switch. The access points are HP ProCurve MSM320 802.11g models that were installed to support a laptop cart model. There are not access points

installed in each classroom or teaching space and they do not currently provide the bandwidth nor density to support a student 1:1 environment. Secure guest wireless access is currently provided to staff and students, but not at the adequate density or capacity necessary to support all staff and students concurrently.

The goal and recommendation is to upgrade the wired and wireless infrastructure to support at least 10Gbps connections between wiring closets and distribution frames, 1Gbps connections to wired clients via Category 6 UTP cabling, and 802.11n 5GHz wireless access in the density necessary to support three devices per student, per instructional space concurrently. It also the recommendation to ensure that secure guest wireless access is provided and supported to staff, students, and visitors.

Burrillville Middle School

The school wired network and switching was upgraded in January 2013. The existing cabling in the school is a mixture of Category 5e and Category 6 copper structured UTP cabling. A 62.5 micron multi-mode fiber optic backbone connects all distribution frames at 10Gbps speeds using appropriate SFP optical transceivers. Existing switching consists of HP ProCurve 3800 switches at the edge and an HP ProCurve 5412zl chassis switch at the core. All switches provide 1Gbps connections to clients.

The existing wireless network is NOT managed by a centralized controller. The access points are HP ProCurve 530 802.11g models that were installed to support a laptop cart model. There are not access points installed in each classroom or teaching space and they do not currently provide the bandwidth nor density to support a student 1:1 environment. Secure guest wireless access is currently provided to staff and students, but not at the adequate density or capacity necessary to support all staff and students concurrently.

The goal and recommendation is to upgrade the wireless infrastructure to support at least 802.11n 5GHz wireless access in the density necessary to support three devices per student, per instructional space concurrently. It also the recommendation to ensure that secure guest wireless access is provided and supported to staff, students, and visitors.

Steere Farm Elementary School

The existing cabling in the school is a mixture of Category 5 and 5e copper structured UTP cabling. While a fiber optic backbone connects the two wiring closets and distribution frames in the school, the existing cabling is older 62.5 micron multi-mode fiber and may not be able to support 10Gbps speeds. Existing switching is a mixture of Cisco 2950 and HP ProCurve PoE edge switches. No switches currently provide 1Gbps connections to clients. Also, the existing MDF in the Media Center is an inadequate location for upgraded wiring and switching. The space is too small and much too warm to support additional and upgraded equipment.

The existing wireless network is NOT managed by a centralized controller. The access points are HP ProCurve 530 802.11g models that were installed to support a laptop cart model. There are not access points installed in each classroom or teaching space and they do not currently provide the bandwidth nor density to support a student 1:1 environment. Secure guest wireless access is not currently provided due to the district maxing out its internet bandwidth from OSHEAN.

The goal and recommendation is to upgrade the wired and wireless infrastructure to support at least 10Gbps connections between wiring closets and distribution frames, 1Gbps connections to wired clients via Category 6 UTP cabling, and 802.11n 5GHz wireless access in the density necessary to support three devices per student, per instructional space concurrently. The existing MDF should be relocated to the existing server room about 50 feet from the current location. It also the recommendation to ensure that secure guest wireless access is provided and supported to staff, students, and visitors.

William L. Callahan School

The existing cabling in the school is a mixture of Category 5 and 5e copper structured UTP cabling. While a fiber optic backbone connects the two wiring closets and distribution frames in the school, the existing cabling is older 62.5 micron multi-mode fiber and may not be able to support 10Gbps speeds. Existing switching is a mixture of Cisco 2950 and HP ProCurve PoE edge switches. No switches currently provide 1Gbps connections to clients.

The existing wireless network is NOT managed by a centralized controller. The access points are HP ProCurve 530 802.11g models that were installed to support a laptop cart model. There are not access points installed in each classroom or teaching space and they do not

currently provide the bandwidth nor density to support a student 1:1 environment. Secure guest wireless access is not currently provided due to the district maxing out its internet bandwidth from OSHEAN.

The goal and recommendation is to upgrade the wired and wireless infrastructure to support at least 10Gbps connections between wiring closets and distribution frames, 1Gbps connections to wired clients via Category 6 UTP cabling, and 802.11n 5GHz wireless access in the density necessary to support three devices per student, per instructional space concurrently.

Austin T. Levy School

The school wired network and switching was upgraded during the summer of 2011. The existing cabling in the school is all Category 6 copper structured UTP cabling. A 62.5 micron multi-mode fiber optic backbone connects the two distribution frames at 1Gbps speeds using appropriate SFP transceivers. Existing switching consists of HP ProCurve switches. All switches provide 1Gbps connections to clients.

The existing wireless network is managed by an HP ProCurve MSM765 zmodule controller installed in the HP ProCurve 5412 core switch at Burrillville High School. The access points are HP ProCurve MSM 802.11n models that are installed in each classroom or teaching space. Secure guest wireless access is not currently provided due to the district maxing out its internet bandwidth from OSHEAN.

The fiber optic backbone should eventually be upgraded to at least 10Gbps, but that may require replacing the existing fiber with 50 micron fiber and possibly adding switches to support the appropriate optical transceivers. It also the recommendation to ensure that secure guest wireless access is provided and supported to staff, students, and visitors.

Technology Staffing Assessment Update

The primary source of technology support for the Burrillville School Department is the District Technology Department. The Technology Department provides support and oversees the purchasing for both information and instructional technology. This includes all computers, peripherals, software applications, local and wide area networks, wireless networks and servers.

As of June 2013, the District Technology Department staff consists of the following:

- Full-time: Director of Technology
- Full-time: Computer Technician
- Contracted Service: .8 Computer Technician

The district needs to closely consider the addition of at least a part-time Data Manager to assist with the management and support of the district Student Information System, as well as the wide variety new information and assessment systems that have been added, both by RIDE and the district. The district is also evaluating a new Student Information System for the 2014-15 school year and a Data Manager will be crucial to ensure the success of the implementation.