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To: Newton School Committee
From: Leo Brehm, Director of Information Technology
Date: May 7, 2013
Re: Update NPS Technology Plan

The Information Technology Department consists of instructional, library media, and administrative technology. These three components work together to provide the instruction, materials, and services that support teaching, learning and ensure all learners are prepared to leverage information critically and creatively. Administrative technology provides the foundation for all information and communication services, using data and network resources district-wide.

- Continue to build the network infrastructure throughout the district and the hardware capacity in each building.
- Continue to improve and develop functionality and capacity of our technology infrastructure to support learning.
- Increase access to technology equipment and resources both during and outside the school day.
- Provide support and professional development to ensure our educators can leverage the technology available for teaching and learning.

Information Technology provides the foundation for all information and communication services, using data and network resources district-wide. The focus in administrative technology has been on infrastructure upgrades, improvements to classroom technology, and the future of the classroom regarding the use of technology to advance learning.

Over the course of FY13 and into FY14, the department is working to improve and equalize access to more current and robust digital learning tools in all schools and classrooms. The department has been implementing a network improvement plan, which will increase ten-fold the connection speeds of all 22-school buildings, as well as double the wireless network capacity to support the capacity of 1:1 computing.

Below are a number of tasks that were achieved over the course of the year:
- Supplied the remaining classrooms with document cameras and purchased projectors to update and add projection to all remaining classrooms in the district.
- Updated the K-3 teacher laptops district wide.
- Increased access to technology at elementary and middle schools.
- Upgraded the core-switching platform in all four middle schools and the Ed Center to gigabit connections with ten-gigabit connections back to the Ed Center.
- Upgraded the wireless network to Cisco Clean Air to facilitate 1:1 capability in all four middle schools. (In progress)
- Minor infrastructure upgrade to our storage and virtual server systems.
- Commenced in the embedding of curricular alignment to meet the Common Core State Standards for technology and information literacy skills.
- Completed research and development on digital resource delivery tools for multimedia.

The Information Technology and Library Team have engaged in a comprehensive examination of the technological resources needed to support learning and operations within our district. This benchmark will guide us in prioritizing funding and initiatives as we move forward. While our teachers continue to enhance their use of technology, we expect that a consistent level of resources will ensure that students across the district receive equal opportunities to enhance their learning through the use of technology.

The benchmarks we have established at each level are:

Elementary classrooms
- Kindergarten - 2 Desktops and 5 devices (Laptops or Tablets)
- Grades 1 - 5 - 5 devices (Laptops or Tablets)
- Three class sets of laptops on carts per elementary building
- Art and Music - Access to laptop/desktops pods

Libraries (citywide)
- Elementary -15-mix of desktops/laptops/tablets
- Middle - 30-mix of desktops/laptops/tablets
- High Schools - Class set with devices for sign out (various devices)

Middle Schools
- 2 Class sets of laptops per team

High Schools
- Maintain current labs and grow access through carts.

The following resources reflect the portion of the operating budget directed to replace hardware and classroom technology and the outside support provided by other avenues.
- Operating Budget for hardware replacement ($485k)
- Boston College Partnership ($100k)
- E-rate Funds (Approx. $125k)
- PTOs (FY12-$385k, FY13-$332k)

Below please find the current inventory and the investment needed to meet the standard that we have established and the ongoing budget needed to maintain the standard over time.

	Standard	Current	Gap	Cost
Elementary	3126	2071	1055	$900K
Middle	2383	972	1411	$1.2M
High	1477	1142	335	$300K
Total	**6986**	**4185**	**2801**	**$2.4M**
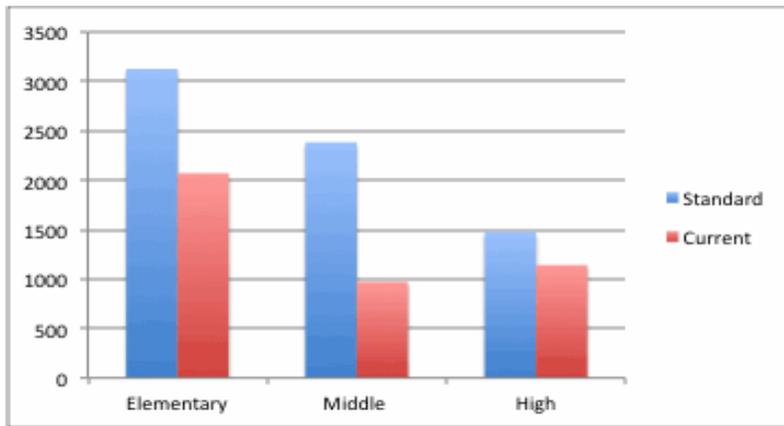
Cost to reach standard: $2.4 M (based on $850 replacement rate)
Cost to maintain (five year replacement cycle district wide): $1.6M /Year (based on $850 replacement rate)

Options for meeting the standard

Bring Your Own Device
There has been ongoing discussion about the role BYOD will play in our learning environments and the Newton Public Schools is engaged in the discussion in order to leverage the power of personally owned devices in an educationally appropriate manner. The BYOD initiative is being explored through committees at our middle and high schools in order to measure the readiness of our communities to leverage this model. During my presentation I will outline the current BYOD models being leveraged by other districts and possibly considered by Newton Public Schools if deemed a viable option.

The 2.4M gap does not reflect the possibility of a BYOD initiative which would substantially reduce the impact to the operating budget to sustain this standard. If we were to leverage BYOD in grades six through twelve the initial gap could reduce by as much as approximately 45% and ongoing maintenance costs would be reduced by approximately 40%. Much of this depends on the model used in implementing this kind of program some of the options are:
1. Family-funded 100% - Any kind of device
2. Family-funded - District specified device
3. District/Family Shared Cost - District specified device

Additional funding options include leasing and combining with BYOD initiatives supported by the operating budget. When thinking about the "other" costs of BYOD it is important to remember that research supports the claim that the three important ingredients to successful technology integration with learning in schools are: 1:1 access, professional development focused on pedagogy that is supported by the devices.

I look forward to discussing these ideas in this memo further with you Monday evening.