

**Holliston Public Schools**  
**Status Report on Technology**  
**September 9, 2010**

This is an update to the report presented last year.

The Holliston Public School District is comprised of four schools. Two elementary schools in one building that share a gymnasium and cafeteria, a middle school and a high school. Each of these schools was either built new, expanded and or rehabilitated and opened/reopened in the years 1998-2001. I am going to describe the technology infrastructure in the classrooms at the opening of each of the schools, what changes have been made since then to get you to where we are now, and what we need in the near term. I will conclude with the changes over time to the networking infrastructure.

The technology replenishment we did last year made a difference to our technology in the classroom. Please let me review what we did. We purchased 146 desktop units for the Placentino classrooms and 201 desktops for the Miller classrooms. This maintained their current classroom footprints. Offices, unified art rooms, the library and therapeutic rooms were not upgraded. At Adams, we purchased 50 desktops for the teachers, 25 notebooks and 25 netbooks to replenish existing carts. The High School received 46 desktops for science classrooms, art classrooms and special education classrooms. At both secondary schools, we redeployed the desktops that were replaced in the elementary schools to replace even older technology in those two schools. In addition, we purchased 20 Macbooks to explore the advantages of providing mobile technology to the teachers.

Last year I recommended the re-establishment of the Tech Plan Committee as part of this report. Subsequently, the Strategic Plan Committee recommended creating a technology committee. I plan to be a part of that process this year.

**Sam Placentino Elementary School**

The Sam Placentino Elementary School opened in October 1998 as a new school. The technological footprint in the basic classroom was one teacher workstation and four student workstations. There were ten workstations in the Library and one alpha smart cart. In 2001 a computer lab was added. A teacher survey was taken regarding classroom technology in late 2003. The survey results showed an overwhelming opinion that we should reduce the number of student stations in the classrooms. So, in February 2004 we replaced the Placentino computers with new ones with a new footprint of one teacher workstation and two student workstations. The library eliminated four machines and one laptop cart was added with Federal Grant funds. In March 2010, we replenished the classroom (student/teacher/computer lab) workstations with HP Pro6000 Dual Core desktops. A PTSA grant provided an Epson BrightLink projector. This projector turns any White surface into a “smart” surface. In Room 13, we permanently mounded an existing portable SmartBoard and projector to create a second smart lab. Placentino also acquired 25 Dell laptops through a corporate donation from Harvard Pilgrim Health and will be used in the new lab.

The current Placentino School footprint has one teacher and two student workstations per classroom, six machines in the library, one laptop cart, and one alpha smart cart.

The current need at Placentino is to replace the desktops that were not replaced during last year's replenishment. They are the 7 year old Gateway desktops that are continuing to fail at an ever increasing rate. Originally we were able to replace some failed components at a reasonable cost. The machines are so far out of date that the costs of repairing them do not make it a worthwhile investment. In addition, the staff at Placentino is regretting their decision to move to two workstations in a room. For the types of activities the students perform in a classroom, only having two machines greatly impacts their ability to get ample time on the lesson. We are exploring a more affordable option at the Miller School (see below). In addition, we need to begin to focus on updating our curriculum related software programs and replace the 12 year old phone system that services Placentino and Miller.

### **Fred Miller Elementary School**

The Fred Miller Elementary School reopened in September 1999. It was a combination renovation-addition. The technological footprint in the basic classroom was one teacher workstation and four student workstations. The building contained one computer lab and one alpha smart cart. There were ten workstations in the Library. A state grant in 2003 provided the school with a laptop cart. In June 2004, we replaced the original computers with new ones on a one for one basis, maintaining the original classroom footprint. Two additional half filled laptop carts were acquired in 2006. The 2003 cart was moved to the High School in 2007. An additional alpha smart cart was also acquired. In March 2010, we replenished the classroom (student/teacher/computer lab) workstations with HP Pro6000 Dual Core desktops. A PTSA grant provided an Epson BrightLink projector. This projector turns any White surface into a "smart" surface.

This gives the Miller School their original one teacher workstation and four student workstation footprint. There is one computer lab, three SmartBoards, one BrightLinks projector, four regular projectors, two alpha smart carts and two half filled laptop carts.

The current need at Miller is to replace the desktops that were not replaced during last year's replenishment. They are the 7 year old Gateway desktops that are continuing to fail at an ever increasing rate. Originally we were able to replace some failed components at a reasonable cost. The machines are so far out of date that the costs of repairing them do not make it a worthwhile investment. One of our vendors gave us a free demo product from NComputing called the X350. This device allows one CPU to be shared between four users. We have been piloting this device in a classroom in Miller and it is working quite well. For the cost of the product (currently \$ 250), plus the cost of 3 monitors/keyboards/mice, we can have three more machines. It has succeeded in a single classroom, or next test would be to add another four or five rooms to see if this is a product that will extend our technology dollars. In addition, we need to begin to focus on

updating our curriculum related software programs and replace the 12 year old phone system that services Placentino and Miller.

### **Robert Adams Middle School**

The Robert Adams Middle School reopened in September 2000. It was a combination renovation-addition. The technological footprint in the basic classroom was one teacher workstation and four student workstations. The building contained three computer labs and two alpha smart carts. Starting in 2003, through a number of state and local grants, the Middle School acquired four laptop carts with 24 units in each. An additional two alpha smart carts were acquired. In 2005, we replaced 135 desktops for teachers, administration and two labs. We refurbished 55 desktops for the English Department and one remaining lab. As part of this, the foot print changed to one teacher station and no student stations, except in English where four student stations remained. An additional laptop cart was purchased in 2006. Over the years, a number of SmartBoards were acquired through grants and we purchased a number of projectors to close out the changes. In March of 2010 the Middle School received 50 HP Pro6000 DuoCore desktops for the classrooms, 25 HP 4565 Notebooks for the SmartLab and 25 Acer netbooks for a classroom cart. In June of 2010 we received a grant thru the parents groups for the installation of 3 Epson BrightLink projectors bringing the total of Smart Classrooms to 9 with 1 SmartLab. The Middle School currently has 3 staff members participating in a 2 year Accept Collaborative ProjectAble 21st Century grant.

This leaves the Middle School with a current classroom footprint of one teacher workstation per classroom with the English classrooms having an additional 2 student notebooks (recycled from old carts) and Special Education classrooms having an additional 2 student desktops (recycled from old teacher stations). There is 1 SmartLab with 25 new HP notebooks and 3 computer labs with 24 Gateway E-4300s (6-7 years old) in each. In addition, there are 2 notebooks carts and 1 netbook cart. The notebook cart computers continue to fail at a fast pace and are in demand daily. We also have 4 AlphaSmart Carts one of which is in dire need of replacement. We have seven SmartBoards, three BrightLinks projectors and ten standard projectors.

The immediate needs are to replace the 6-7 year old classroom/lab/admin desktops and notebooks.

### **Holliston High School**

Holliston High School reopened after renovations in September of 2001. The technological footprint in the basic classroom was one teacher workstation and four student workstations. The building contained seven computer labs, three alpha smart carts and two projectors. In 2004, the High School acquired its first laptop cart of 12 laptops. In 2006, we added three more laptop carts, purchased new teacher and administration workstations and refurbished all of the computers in the labs. This replaced the motherboard and power supply. We also added a lab with refurbished machines. The student classroom computers were left unchanged. A laptop cart

purchased in 2004 was moved from the Miller School to the High School in 2007. Over the years, a number of SmartBoards were acquired through grants and we purchased a number of projectors to close out the changes. In March 2010 we purchased 46 desktops to replace the student workstations in the Science, Art and Special Education classrooms. Sixty-one of Miller's replaced computers (orig. 2004) Gateway computers were transferred to replace the original 2001 computes in English and Wellness classrooms. Twenty Macbooks were purchased as part of the laptop pilot program. A wireless network was installed in most of the educational classrooms to allow for easier access for the five laptop carts and the Macbooks. The network does not extend to the Field House, Auditorium, offices, or music classrooms. In addition, a few of the classrooms have less than reliable connectivity, all of which will be addressed in the future. One BrightLinks projector was acquired.

This leaves the High School with eight computer labs, one alpha smart cart, 36 projectors, twelve SmartBoards, one BrightLinks projector, five laptop carts and a classroom configuration of one teacher workstation and four student workstations in Wellness classrooms, two student workstations in English classrooms and two to six student workstations in Science classrooms (depending on the type of science) with no student workstations in the other rooms.

The immediate needs are to add one SmartBoard for the Foreign Language Department, add projectors, and upgrade the labs starting with the CAD lab.

### **Networking Infrastructure**

When all the schools were completed with their construction/renovation projects in 2001, we had many enhancements to our technology including our networking infrastructure. We were a LAN-based self contained network with four dedicated servers at the time. Our email was managed by an external company, our student database was actually four databases, one per school. As a student progressed from school to school, we would have to manually move them from one database to the other. Our closet infrastructure ran a 10-100 mHz.

In 2004, using funds from a variety of sources, we upgraded our network to a town-wide fiber network. This allowed us to become a true WAN. We had a single domain, replaced all the servers and reduced the number from sixteen to ten, and moved to a single database for student information that is shared between the schools. We hosted our own email and provided that service to the other town departments as well. Our closets were upgraded to 10-100-1000 mHz.

Currently, only our email server is up-to-date. The needs are to replace the elementary switches, replace the nine remaining servers, and replace the back-up units. We have made most of the High School wireless and will determine the effectiveness as the school year goes on.

## Other

We have a great number of printers both in the classroom and in shared spaces. We have replaced the classroom ones on an as needed basis. They are relatively cheap and have treated them more as a supply & material item. Our workgroup printers are all from the original project and are much more costly. We have 52 of them in the district.

Our phone system in Placentino/Miller and the Middle Schools are all from the original project. The High School system was starting to fail and we were able to replace that using the remaining building committee funds. Even though they are currently working systems, the handsets are failing and parts and support for these two phone systems are almost non-existent.

One new area of technology is copiers. You might question why I would call these technology, but each school has a copier that is connected to our network that is used as a printer. We print our report cards, progress reports and schedules on them. Having one of these out of commission would create a huge problem at the school level during certain times of the year. Currently, we have a budget for copier acquisition (\$ 30 K) and we have done a good job utilizing those resources. Even with the line item budgeted, we still need to keep these on our radar screen.

In conclusion, our technology needs are many. We have done a good job utilizing the resources the town has provided over more than ten years. We were fortunate that the Finance Committee supported the school's needs during last year's Fall Town Meeting. We hope to continue to receive support to keep the district moving forward and giving our 21<sup>st</sup> Century Learners access to the tools they need.

Keith Buday  
Business Manager  
Holliston Public Schools

## Appendix A – Current School Computers

	Type	Units	Year Acq.	Processor	CPU	HD (GB)	RAM
<b>Placentino</b>	HP Workstations	146	2010	Intel Dual Core	3.0 GHz	160	4 GB
	GW Workstations	34	2004	Pentium 4	2.8 GHz	40	256 MB
	Dell Laptop Cart	23	2006	Intel M	2.0 GHz	80	1 GB
	GW Laptop Cart	20	2004	Centrino			
	Admin Laptops	3	2007				
<b>Miller</b>	GW Workstations	44	2004	Pentium 4	2.8 GHz	40	256 MB
	HP Workstations	201	2009	Intel Dual Core	3.0 GHz	160	4 G
	Laptop Cart	25	2005		1.7 GHz	20	128 MB
	Admin Laptops	3	2007				
<b>Adams</b>	Desktops (new)	50	2010	Intel Dual Core	3.0 GHz	160	4 GB
	Desktops (Gateway)	108	2005	Pentium 4	2.8 GHz	40	512 MB
	Desktops (refurb)	15	2005	AMD Athlon	2.12 GHz	10	512 MB
	Notebooks (SmartLab)	25					
	Notebooks (Classrooms)	24	2005	Pentium M	1.3 GHz	30 GB	512 MB
	Notebooks (Carts)	48	2003-2004	Pentium M	1.73 GHz	40 GB	512 MB
	Netbook Cart #4	25	2010	Celeron	1.3 GHz	250 GB	2 GB
	Admin Laptops	5	2003-07				
<b>High</b>	Desktops	105	2006	Intel Dual Core	2.4 GHz	80	1 GB
	Desktops (refurbished)	102	2006	AMD Athlon	1.6 GHz	80	1 GB
	Desktops (refurbished)	106	2006	AMD Athlon	1.6 GHz	20	1 GB
	Desktops (Gateway)	61	2004	Pentium 4	2.8 Ghz	40	512 MB
	Desktops (HP)	46	2010	Dual Core	3.0 GHz	160	4 GB
	Laptop Cart (3)	72	2006	Intel Dual Core	2.4 MHz	80	1 GB
	Laptop Cart (1)	8	2004	Centrino	1.6 MHz	40	750 MB
	Laptop Cart (1)	18	2003	Pentium 4	1 MHz	40	512 MB
	MacBooks	20	2010				
	Admin Laptops	3					

**Appendix B – Cost of Replacing Everything In-kind**

<b><u>Technology Replenishment</u></b>					
<b><u>Location</u></b>	<b><u>Description</u></b>	<b><u>Unit Cost</u></b>	<b><u># Units</u></b>	<b><u>Extended Cost</u></b>	
<b>Placentino</b>	Desktops	575	180	103,500	
	Laptop Cart	800	43	34,400	
	Admin Laptops	1,000	3	3,000	
	Classroom Printers	125	45	5,625	
	Workgroup Printers	1,000	11	11,000	
	<b>Miller</b>	Desktops	575	245	140,875
Laptop Cart		800	25	20,000	
Admin Laptops		1,000	3	3,000	
Classroom Printers		125	45	5,625	
<b>Elementary Closet</b>	Domain Controller Server	3,000	2	6,000	
	Data Server	5,000	1	5,000	
	Backup Unit	9,000	1	9,000	
	Core Switch	15,000	1	15,000	
	Switches	4,000	17	68,000	
	Phone System Wireless Access	25,000	1	25,000 40,000	
<b>Non Computers</b>	Projectors	500	4	2,000	
	Smartboards	1,800	3	5,400	
	BrightLinks	1,990	2	3,980	
	Alphasmares/Danas	200	60	12,000	
<b>Total Elementary</b>				<b>518,405</b>	
<b>Adams</b>	Desktops	575	173	99,475	
	Laptop Cart	800	122	97,600	
	Admin Laptops	1,000	5	5,000	
	Classroom Printers	125	75	9,375	
	Workgroup Printers	1,000	7	7,000	
	<b>Closet</b>	Language Lab Server	5,000	1	5,000
		DHCP Server	5,000	1	5,000
		Phone System	20,000	1	20,000
		Wireless Access			30,000
	<b>Non Computers</b>	Projectors	700	10	7,000
Smartboards		1,800	7	12,600	
BrightLinks		1,990	3	5,970	
Language Lab				30,000	
Alphasmares/Danas		200	106	21,200	

<b>Total Adams</b>				<b>355,220</b>
<b>High School</b>	Desktops	575	420	241,500
	Laptop Cart	800	108	86,400
	Macbooks	1,100	20	22,000
	Admin Laptops	1,000	3	3,000
	Classroom Printers	125	66	8,250
	Workgroup Printers	1,000	28	28,000
<b>Closet</b>	Application Server	5,000	2	10,000
	Data Storage	5,000	1	5,000
	Exchange Server	8,000	1	8,000
	Ipass Server	10,000	2	20,000
	Moodle Server	3,000	1	3,000
	Backup Unit	9,000	1	9,000
	Phone System			26,000
	Wireless Access			46,000
<b>Non Computers</b>	Projectors	700	36	25,200
	Smartboards	1,800	12	21,600
	BrightLinks	1,990	1	1,990
	Language Lab			30,000
	Alphasarts/Danas	200	30	6,000
<b>Total High School</b>				<b>600,940</b>
<b>Central Office</b>	Desktops	575	9	5,175
	Admin Laptops	1,000	3	3,000
	Workgroup Printers	1,000	6	6,000
<b>Non Computers</b>	Projectors	700	1	700
<b>Total Central Office</b>				<b>14,875</b>
<b>Copiers (District-wide)</b>	Copy Machines Gen'l	9,700	23	223,100
	Copy Machines Networked	11,250	4	45,000
	Copy Machines High Speed	20,250	3	60,750
	Risographs	5,000	4	20,000
<b>Total Copiers</b>				<b>348,950</b>
<b>Total Elementary</b>		<b>518,405</b>		
<b>Total Adams</b>		<b>355,220</b>		
<b>Total High School</b>		<b>600,940</b>		
<b>Total Central Office</b>		<b>14,875</b>		
<b>Grand Total (no copiers)</b>		<b>1,463,440</b>		
<b>Total Copiers</b>		<b>348,850</b>		
<b>Grand Total (w/copiers)</b>		<b>1,838,290</b>		