



# Westford Public Schools

*Shaping the future one child at a time.*

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# Long-Range Technology Plan: School Year 2009-2010

August 10, 2009

This document describes long-range plans extending through  
the 2012-2013 school year.

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# Introduction

This document sets forth the intended direction for the use of information technology in the Westford Public Schools and to meet the requirements of the Massachusetts Department of Education for annual technology planning. Beyond the fulfillment of state requirements, the preparation of this plan serves number of other purposes: providing a focus for input from the school stakeholders, coordinating the many aspects of technology use and support in the schools, informing the community, and offering a context to the School Committee in budget deliberations.

The five broad goals of this plan were established by a committee of 49 Westford staff and community members in 2001. The specifics of the plan are revised annually to take account of changing conditions and to maintain a three-year planning horizon.

Input for this revision was solicited from all members of the WPS staff, parents and other members of the Westford community. To all who have contributed comments, we are sincerely grateful.

# Vision

The mission of the Westford Public Schools is to engage its students in a learning environment that prepares them for a rapidly changing world and to develop the skills and attitudes that will enable them to become responsible, contributing members of society. The advent of the information age and the spread of technology into all realms of life make the integration of technology throughout the curriculum a necessary condition for fulfilling this mission.

Our vision for the integration of technology in the schools of Westford is centered on the accomplishment of this mission. It is a vision in which every student and staff member possesses the access and skills that allow them to use technology to access, analyze, create meaning, and communicate with information. In our vision, all of our schools have the following characteristics.

- The use of technology is in all cases focused on student achievement within a curriculum that embodies the Massachusetts curriculum standards.
- Beyond acquiring basic technical competencies, students use technology to develop the critical thinking, information literacy, and communication skills necessary for attaining the curriculum standards in each academic area.
- All students, teachers, and administrators have uninterrupted access to the full range of current technologies and digital content needed for teaching, learning, and educational management.
- Students benefit from learning with a teaching faculty and school staff whose educational technology expertise is kept current through an effective professional development program and the ready availability of technical and pedagogical support specialists.
- Every student has access to technology that is appropriate for his or her individual learning needs.
- Technology enables data-driven educational decision making that maximizes student benefits and cost effectiveness.
- The technology infrastructure of the schools allows seamless access at home or at school for students and staff as well as rich home-school communication opportunities for parents and care-givers.
- The schools leverage the rich technological resources of the community in creating a relevant learning community for students and staff.
- Technology use by students and staff is at all times in accordance with ethical and legal standards.

# Present Status

## Learning Technology

- In accordance with the core mission of the Westford schools, the use of information technology is as an essential tool to enable student attainment of the Westford curriculum benchmarks. These benchmarks embody the Massachusetts Curriculum Framework content standards and Student Technology Standards. Technology skills are taught and learned in the context of core curriculum activities.
- During School Year 2007-2008 a system of individual Technology Integration Plans for teachers in grades 1-12 was implemented with the objective of insuring that all students benefit from a technology-infused curriculum.
- The Westford School Committee has developed an Acceptable Use Policy (AUP) intended to guide students, teachers, and all other staff in the appropriate use of school technology. The AUP is published in Student Handbooks and on the WPS web site. Each year new teachers are provided with an orientation to the AUP and all staff are reminded of the importance of the policy.

## Data Management Technology

- The major data management technologies used in the school system are summarized in the following table.

### Current Data Management Systems

Information	Technology
Student Information	IPass
Human Resources & Finance	MUNIS 6.0 (Town-School system), iStaff
Assessment	Massachusetts Education Data Warehouse, Datametrics TestWiz.Net
Library	Follett Destiny
High School Guidance	Naviance Workspace K12
Special Education	eSped
Health Reporting	iPass
Desktop Productivity Applications	Microsoft Office, FileMaker Pro, FirstClass

- Among the tasks of the school system's ongoing Assessment Committee is the selection of a system for the longitudinal tracking of local assessment data to be used in concert with the Massachusetts Data Warehouse (Cognos) system.
- During School-Year 2008-2009 all schools transitioned to the Destiny library circulation system. This change was necessitated by the discontinuance of support for the Spectrum system. The upgrade provided additional benefits by providing web access to the catalog from home and centralizing the nine separate school-based systems allowing for a virtual union catalog (allowing searches of the collections of all schools).

## Software and Hardware

- In order to allow students to build their technology skills in a developmentally appropriate way, to make professional development efficient, and to contain costs, a standard set of core software supporting the curriculum has been identified and is scheduled for review in School Year 2009-2010.
- The Massachusetts Department of Education has set a ratio of less than 5 students to 1 high capacity computer as a benchmark standard. The district-wide ratio for Westford is 4:1.

- During School Year 2007-2008, the Town Information Technology Director and the school system launched a program to replace 20% of school computers, printers, and servers in order to insure that no equipment is more than 5 years old. The third phase of the program is being implemented in School Year 2009-2010 with the result that over 65% of school hardware has been replaced in the last three years.
- By standardizing on hardware systems and core instructional and administrative software, the school system is able to obtain cost savings through bulk purchasing and software licensing. For example, the SY 2009-2010 replacement purchase was made at a price 20% below educational discounts normally afforded to school systems.
- Protection against viruses, spyware, and other forms of ‘malware’ (malicious software) is provided through the Sophos Antivirus software.

### **Connectivity**

- The schools are connected via the joint town-school network which is coordinated by the Town of Westford Director of Information Technology and the school system Network Manager. Every classroom and office in the Westford Public Schools is connected to the Internet.
- During School Year 2009-2010, access by teachers and students at the Blanchard Middle School to a centralized authentication and storage (including off site backup) server for backing up and providing timely access to student assignments, learning materials, and related school files. Plans call for this pilot to be extended to both middle schools and Westford Academy in the near future and ultimately to all schools.
- During School Year 2009-2010 access to a Web 2.0 server is being provided to all schools in order to make educational projects that use podcasting and similar technologies more efficient and secure.
- Content filtering is provided for all schools in accordance with the Child Internet Protection Act (CIPA).
- Telecommunications services used by the school system include email for all staff, Internet connectivity, and telephone services. The e-rate is used to defray the costs for these services with the portion not covered being funded by a line item in the school budget.
- A fiber-optic backbone has been provided at the Abbot, Crisafulli, Blanchard, Day, Nabnasset, Robinson, and Westford Academy in order to maintain capacity as usage increases.
- Internet services and connections have been upgraded to high speed lines from Comcast with individual content filters and firewalls using Websense security software. Fiber optic connectivity has been provided to Westford Academy, the Abbot, and Central Office by Verizon.
- The state-funded MassONE system provides teachers and students with a cost-free virtual private network which is used for a number of purposes from dist, distributing materials to staff to online professional development.
- The Town IT Director also oversees the town phone system which serves the schools as well as town offices.
- The NTI Connect-Ed notification system is used to record, and automatically send absence, emergency, and other messages to large numbers of parents and staff in a short period of time.
- Telephones at the Administrative Center have been converted to the Cisco Voice Over Internet Protocol (VOIP) system which serves Town offices.

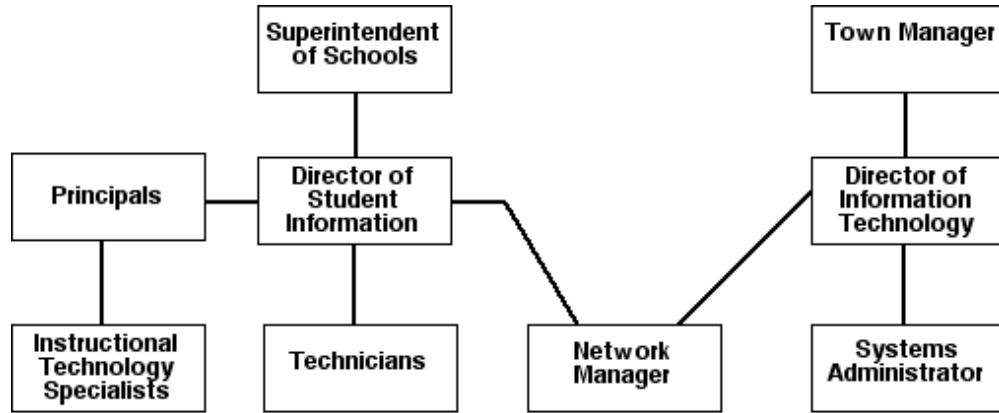
### **Technology Professional Development and Instructional Support**

- Technology professional development must be ongoing and aimed at helping staff develop appropriate technical skills and instructional methods. Staff members require training in technical skills such as the use of software and Internet-based systems or using a special peripheral like a science probe.
- In addition to technical skills, the system's educators require integration professional development which allows them to use technology in the context of teaching and learning—a task which often requires taking on different roles and utilizing nontraditional methods.
- The position of Director of Educational Technology and Information Services was eliminated from the budget for School Year 2009-2010. The direction of technology professional development and instructional support is now to be performed by principals and other administrators.
- With the elimination of the Director's position, a Technology Task Committee was created to provide planning and coordination of technology professional development and support activities.
- In Westford, technology professional development is provided for teachers in three general ways: through local workshops, outside conferences and courses and through the collaborative work of the Instructional Technology Specialist in each school.
- Each school serving grade 3 and above has a full time Instructional Technology Specialist (ITS) while each of the K-2 schools have a .5 FTE technology specialist. The job description of these support specialists calls upon them to work with teachers in a consultative model, identifying those places where the application of a technology will add depth to the curriculum and then co-planning, modeling and co-teaching technology-infused units.
- During School Year 2009-2010 Technology Integration Specialists at the K-8 level will begin teaching scheduled classes in order to cover teacher planning time. Those portions of the school day in which the ITS is not teaching or planning for these courses will still be available for support of classroom teachers and other duties.
- During School Year 2007-2008 a system of individual Teacher Integration Plans (TIP) was initiated to assist each teacher in focusing on the ongoing integration of technology into their practice. These plans are also used to help Instructional Technology Specialists coordinate appropriate support for each teacher. This initiative enters its third year in 2009-2010.
- Online instruction has been incorporated into a number of 'hybrid' (part face-to-face, part online) workshops including those in educational technology, teaching mathematics, and the Skillful Teacher.

**Technical Support**

- The maintenance and repair of equipment is provided by three full time Technicians (3.5 FTE positions).
- Network support is overseen by the school system’s full time Network Manager with assistance from the Technicians. Valuable support for joint Town-School systems is also provided by the Town of Westford’s Database Manager, Server Manager and the Director of Information Technology.
- The chart below outlines the organization of school system personnel who have technology roles.

**Organization of Staff with Technology-Related Duties**



# Goals and Objectives

## Goal 1: Curriculum

**All students use appropriate educational technologies to attain the concepts and skills of the Massachusetts Curriculum Frameworks and Student Technology Standards as embedded in the Westford curriculum.**

*Objectives:*

### Next year

- 1.1 By September 1, 2009 Instructional Technology Specialists will transition to providing students with technology activities in a fixed-period format.
- 1.2 By the end of third year of the TIPs initiative (School Year 2009-2010), student participation in technology-enabled curriculum projects will have increased by 10% from the baseline year (School Year 2006-2007).

### Next 3 years

- 1.3 By the end of School Year 2012-2013 all students in grades K through 2 will engage in curriculum-based activities conducted by their classroom teacher that appropriately integrates technology on at least a monthly basis.
- 1.4 By the end of School Year 2012-2013 all students in grade 3 through 8 classrooms will engage in curriculum-based activities conducted by their classroom teacher that appropriately integrates technology on at least a monthly basis.
- 1.5 By the end of School Year 2012-2013 85% of eighth grade students will meet the technology literacy benchmarks that implement the Massachusetts Technology Literacy Standards and Expectations.

**Goal 2: Educational Management**

**All administrators, teachers, and support staff use technology to gather, assess, and share information for data driven decision-making and educational management.**

Next year

2.1 By June 1, 2010 a technology system for the longitudinal analysis of student assessment data will have been identified.

Next 3 years

2.2 By School Year 2011-2012, parents will have Internet access to student attendance and report card information via the iPass parent portal.

### **Goal 3: Hardware, Digital Content, and Connectivity**

**All students and staff have sufficient and timely access to the computer hardware, digital content, and connectivity necessary for teaching, learning, and educational management.**

#### Next year

- 3.1 During School Year 2010-2011 the fourth phase of the replacement cycle will replace 20% of the school system's oldest computers that are more than five years old.
- 3.2 By the beginning of School Year 2010-2011, all teachers and students at Westford Academy and the two middle schools will have access to a centralized authentication and storage (Active Directory) server providing off-site backup timely access to student assignments, learning materials, and related school files.
- 3.3 By the beginning of School Year 2010-2011 a pilot of the use of interactive whiteboard technology will be completed at Westford Academy with a plan developed for cost-effective deployment across the school.
- 3.4 By the beginning of School Year 2010-2011 a pilot of the use of interactive whiteboard technology will be completed at Blanchard Middle School with a plan developed for cost-effective deployment across both middle schools.

#### Next 3 years

- 3.3 By School Year 2011-2012 all schools will have access to a centralized authentication and storage (Active Directory) server providing off-site backup timely access to student assignments, learning materials, and related school files.
- 3.4 By School Year 2011-2012 all Westford Academy and middle school classroom teachers will have the opportunity to obtain a ceiling-mounted projector after receiving the required professional development.
- 3.5 By the beginning of School Year 2011-2012, the schedule for replacement of computer equipment on a five-year cycle will be fully implemented with no computer older than 5 years.

### **Goal 4: Professional Development and Support**

**All staff are provided with opportunities to acquire appropriate skills in concert with the technical and instructional support they need to use technology effectively.**

*Objectives:*

Next year

- 4.1 By School Year 2010-2009 the new Technology Task Committee will have developed a proposal for providing effective technology professional development consistent with the new roles of Instructional Technology Specialists.
- 4.2 By School Year 2010-2009 all Instructional Technology Specialists will be trained in the use of the Web 2.0 (Podcasting) server system for developing student projects.

Next 3 years

- 4.3 By School Year 2011-2010 all Instructional Technology Specialists will have received training in the capabilities of FirstClass 10.0.
- 4.4 By the end of School Year 2012-2013, 85% of teachers will use technology on a daily basis to improve student learning in the curriculum.

**Goal 5: Communication and Learning Beyond the School**

**The school system uses technology to embrace wide-scale parent and community participation in the education of our children.**

*Objectives:*

Next 3 years

- 5.1 By the end of School Year 2011-2012, the Westford community will be receiving an average of 5 hours per month of WPS informational and student produced television programming via the educational cable channel.

# Implementation

The time line below indicates responsibility for carrying out objective and completion dates for the next year. These timelines assume full funding of each objective.

**Time Line for Year 1**

#	Objective	Responsible	Complete by
1.1	By September 1, 2009 Instructional Technology Specialists will transition to providing students with technology activities in a fixed-period format.	Principals	August 2009
1.2	By the end of third year of the TIPs initiative (School Year 2009-2010), student participation in technology-enabled curriculum projects will have increased by 10% from the baseline year (School Year 2006-2007).	Principals	June 2010
2.1	By June 1, 2010 a technology system for the longitudinal analysis of student assessment data will have been identified.	District Assessment Team	June 2010
3.1	During School Year 2010-2011 the fourth phase of the replacement cycle will replace 20% of the school system's oldest computers that are more than five years old.	Dir of Student Data w/ Town IT Director	August 2010
3.2	By the beginning of School Year 2010-2011, all teachers and students at Westford Academy and the two middle schools will have access to a centralized authentication and storage (including off site backup) server for backing up and providing timely access to student assignments, learning materials, and related school files.	Dir of Student Data w/ Town IT Director	September 2010
3.3	By the beginning of School Year 2010-2011 a pilot of the use of interactive whiteboard technology will be completed at Westford Academy with a plan developed for cost-effective deployment across the school.	WA Principal	September 2010
3.4	By the beginning of School Year 2010-2011 a pilot of the use of interactive whiteboard technology will be completed at Blanchard Middle School with a plan developed for cost-effective deployment across both middle schools.	Middle School Principals	September 2010
4.1	By School Year 2010-2009 the new Technology Task Committee will have developed a proposal for providing effective technology professional development consistent with the new roles of Instructional Technology Specialists.	Assistant Superintendent	September 2010
4.2	By School Year 2010-2011 all Instructional Technology Specialists will be trained in the use of the Web 2.0 (Podcasting) server system for developing student projects.	Principals w/Town IT Director	September 2010

# Evaluation

This technology plan shall be evaluated and revised each year so that a three year timeline of objectives can be maintained. This evaluation shall involve the school system's stakeholders in the following ways:

- Westford educators: input on accomplishments, needs, and proposed changes will be solicited via email and at least one school-based meeting which is open to all teachers.
- Westford community: input on accomplishments, needs, and proposed changes will be solicited via one or more technology focus groups and the WPS Web site.

The annual technology plan review and revision process shall proceed as indicated in the Chart below. This timeline allows revision of goals and objectives before the budget cycle begins.

**Annual Evaluation Timeline**

<b>Date</b>	<b>Action</b>
May 1	Input from stakeholders solicited as outlined above.
Sep 15	Technology staff incorporates input into revised plan with a 3-year time frame.
Oct 1	Revised plan is presented to the School Committee.

# Budget

The table below details the estimated school budget impact of the first year objectives. A cost of \$0 indicates that no expenditure above budget levels that maintain current effort is required.

*Note:* The budgeted amounts below do not include expenditures from federal stimulus funding which may be used to fund elements of this plan in advance of their planned dates. Specifics of the stimulus funding were not available at the time of the preparation of this plan and will be announced at a later date by the Superintendent.

#	Objective	First Year	Recurring
1.1	By September 1, 2009 Instructional Technology Specialists will transition to providing students with technology activities in a fixed-period format.	\$0	\$0
1.2	By the end of third year of the TIPs initiative (School Year 2009-2010), student participation in technology-enabled curriculum projects will have increased by 10% from the baseline year (School Year 2006-2007).	\$0	\$0
2.1	By June 1, 2010 a technology system for the longitudinal analysis of student assessment data will have been identified.	\$25,000	\$1,500
3.1	During School Year 2010-2011 the fourth phase of the replacement cycle will replace 20% of the school system's oldest computers that are more than five years old.	\$0*	\$0*
3.2	By the beginning of School Year 2010-2011, all teachers and students at Westford Academy and the two middle schools will have access to a centralized authentication and storage (including off site backup) server for backing up and providing timely access to student assignments, learning materials, and related school files.		
3.3	By the beginning of School Year 2010-2011 a pilot of the use of interactive whiteboard technology will be completed at Westford Academy with a plan developed for cost-effective deployment across the school.	\$18,000	\$18,000 (for 5 years)
3.4	By the beginning of School Year 2010-2011 a pilot of the use of interactive whiteboard technology will be completed at Blanchard Middle School with a plan developed for cost-effective deployment across both middle schools.	\$18,000	\$18,000 (for 5 years)
4.1	By School Year 2010-2009 the new Technology Task Committee will have developed a proposal for providing effective technology professional development consistent with the new roles of Instructional Technology Specialists.	\$0	\$0
4.2	By School Year 2010-2011 all Instructional Technology Specialists will be trained in the use of the Web 2.0 (Podcasting) server system for developing student projects.	\$1,120 (substitutes)	\$0

\* Replacement hardware costs from Town IT capital budget. These costs are anticipated to be about \$250,000-\$300,000 per year.

**E-Rate Eligible Services to Be Funded From the WPS Operating Budget in School Year 2009-2010.**

- Web hosting service
- Email service
- VOIP Service
- Local and long distance telephone service
- Cell phone service

## Appendix

# Web Documents Cited in the Text

Donation Guidelines .....<http://westfordk12.us/pages/Tech/donation>

Educational Technology .....<http://westfordk12.us/pages/Tech/>