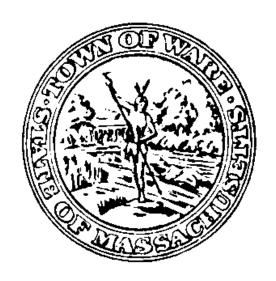# Ware Public Schools
3-Year Technology Plan
2016 – 2019

District Name: Ware Public Schools

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1. INTRODUCTION

1.1 District Technology Vision and Mission

MISSION STATEMENT

The Ware Public Schools is dedicated to the development of skills, knowledge, attitudes and values necessary to live in, function and contribute to a complex, highly technical, changing world. It strives to create a supportive environment that maximizes personal effort, respect, individuality, critical thinking and life-long learning for all students, teachers, administrators and community members. The district is committed to keeping electronic data secure and protecting students online as well as in the classroom. We strive for maximum integration of available technology in the curriculum to help students develop strong problem solving, communication and cooperative learning skills. A system-wide professional development infrastructure will enhance teaching and learning. Our schools will be managed efficiently and demand accountability. The school system is committed to providing equitable access to all student populations without regard to ability, race, gender and socio-economic status. The Ware Public Schools is committed to achieving excellence at all levels.

VISION STATEMENT

In the 21st Century, the Ware Public Schools will be a pillar of strength, leadership and success as **all** students, teachers, administrators and community members are equipped with the tools and skills required for the information age. Our schools will possess state-of-the-art technology and will utilize proven teaching and learning pedagogy. The learning environment will be energized by a cooperative effort of school and community as we share and mold the future together.

An interconnected technology network will connect students, teachers, parents, administrators and the community. It will promote effective decision-making through the use of distributed programs supporting finance, curriculum, administration and maintenance. Standardization and automation of administrative functions will streamline work and conserve resources. The system infrastructure will enhance learning by providing access to libraries, universities, museums and other community connections. Educational technology will support the Massachusetts Education Reform Act, the Common Core of Learning and Curriculum Frameworks.

All students will be encouraged to explore and acquire knowledge. Students will use technology to develop communication, critical thinking and cooperative learning skills. School facilities will be equipped with an array of resources that will link to the community and the world through audio, data and video transmission.

Technology professional development for staff will be ongoing to promote effective teaching and curriculum integration. Many opportunities will be made available to teachers and administrators who will be informed, enthusiastic and comfortable in a dynamic learning environment supported by Education Reform.

In summary, the Ware Public Schools will be a unified, proactive organization composed of students, teachers, administrators and community members working productively and purposefully in a highly technical society. Our students will be life-long learners with the ability to work cooperatively, communicate effectively and utilize critical thinking skills. Teachers will learn alongside our students, developing and strengthening facilitation skills. Administrators will use technology to maximize organizational operations. The Ware Public Schools will be a model of excellence.

1.2 Massachusetts Technology Benchmark Standards 2010 - 2013

The five (5) standards defined by the State are as follows:

Benchmark Standard 1: Commitment to a clear vision and mission statement
A. The district's technology plan contains a clearly stated and reasonable set of goals and implementation strategies that align with the district-wide school improvement plan. The district is committed to achieving its vision by the end of the school year 2015-2016.
B. The district has a technology team with representatives from a variety of stakeholder groups, including school committee members, administrators, and teachers. The technology team has the support of the district leadership team
C. Needs Assessment
   1. The district assesses the technology products and services that will be needed to improve teaching and learning.
   2. The technology plan includes an assessment of the services and products that are currently being used and that the district plans to acquire.
D. The district has a CIPA-compliant Acceptable Use Policy (AUP) regarding Internet and network use. The policy is updated as needed to help ensure safe and ethical use of resources by teachers and students.
E. Budget
   1. The district has a budget for its local technology plan with line items for technology in its operational budget.
   2. The budget includes staffing, infrastructure, hardware, software, professional development, support, and contracted services (including telephone services).
   3. The district leverages the use of federal, state, and private resources.
   4. For districts that plan to apply for E-rate reimbursement, the technology plan specifies how the district will pay for the non-discounted portion of their costs for the services procured through E-rate.
F. Evaluation
   1. The district evaluates the effectiveness of technology resources toward attainment of educational goals on a regular basis.
   2. The district's technology plan includes an evaluation process that enables it to monitor its progress in achieving its goals and to make mid-course corrections in response to new developments and opportunities as they arise.

Benchmark Standard 2: Technology Integration and Literacy
A. Technology Integration
   1. Outside Teaching Time - At least 85% of teachers use technology every day, including some of the following areas: lesson planning, administrative tasks, communications, and collaboration. Teachers share information about technology uses with their colleagues.
   2. For Teaching and Learning - At least 85% of teachers use technology appropriately with students every day to improve student learning of the curriculum. Activities include some of the following: research, multimedia, simulations, data interpretation, communications, and collaboration (See the Massachusetts Recommended K-12 Instructional Technology Standards).
B. Technology Literacy
   1. At least 85% of eighth grade students show proficiency in all the Massachusetts Recommended PreK-12 Instructional Technology Standards for grade 8.
   2. 100% of teachers are working to meet the proficiency level in technology, and by the school year 2010-2011, 60% of teachers will have reached the proficiency level as defined by the Massachusetts Technology Self-Assessment Tool (TSAT).
C. Staffing
   1. The district has a district-level technology director/coordinator.
   2. The district provides one FTE instructional technology teacher per 60-120 instructional staff.
   3. The district has staff dedicated to data management and assessment.

Benchmark Standard 3: Technology Professional Development
A. At the end of three years, at least 85% of district staff will have participated in 45 hours of high-quality professional development that includes technology skills and the integration of technology into instruction.

B. Technology professional development is sustained and ongoing and includes coaching, modeling best practices, district-based mentoring, study groups, and online professional development. The professional development includes concepts of universal design and scientifically based researched models.

C. Professional development planning includes an assessment of district and teachers' needs. The assessment is based on the competencies listed in the Massachusetts Technology Self-Assessment Tool.

D. Administrators and teachers consider their own needs for technology professional development, using the technology self-assessment tools provided by the Massachusetts Department of Education or similar tools.

Benchmark Standard 4: Accessibility of Technology

A. Hardware Access
   1. The district has an average ratio of fewer than five students per high-capacity, Internet-connected computer. The Department will work with stakeholders to review the capacity of the computer on an annual basis. (The goal is to have a one-to-one, high-capacity, Internet-connected computer ratio.)
   2. The district provides students with' access to portable and/or handheld electronic devices appropriate to their grade level.
   3. The district maximizes access to the general education curriculum for all students, including students with disabilities, using technology in classrooms with universal design principles and assistive technology devices.
   4. The district has procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability.
   5. The district provides classroom access to devices such as digital projectors and electronic whiteboards.
   6. The district has established a computer replacement cycle of five years or less.

B. Internet Access
   1. The district provides connectivity to the Internet in all classrooms in all schools including wireless connectivity, if possible.
   2. The district provides bandwidth of at least 10/100/1 Gb to each classroom. At peak, the bandwidth at each computer is at least 100 kbps. The network card for each computer is at least 10/100/1 Gb.

C. Networking (LAN/WAN)
   1. The district provides a minimum 100 Mb Cat 5 switched network and/or 802.11b/g/n wireless network.
   2. The district provides access to servers for secure file sharing, backups, scheduling, email, and web publishing, either internally or through contracted services.

D. Access to the Internet Outside the School Day
   1. The district works with community groups to ensure that students and staff have access to the Internet outside of the school day.
   2. The district web site includes an up-to-date list of places where students and staff can access the Internet after school hours.

E. Staffing
   1. The district provides a network administrator.
   2. The district provides timely in-classroom technical support with clear information about how to access the support, so that technical problems will not cause major disruptions to curriculum delivery.
   3. The district provides at least one FTE person to support 200 computers. Technical support can be provided by dedicated staff or contracted services.

Benchmark Standard 5: E-Learning and Communications

A. The district encourages the development and use of innovative strategies for delivering specialized courses through the use of technology.

B. The district deploys IP-based connections for access to web-based and/or interactive video learning on the local, state, regional, national, and international level.

C. Classroom applications of e-learning include courses, cultural projects, virtual field trips, etc.

D. The district maintains an up-to-date web site that includes information for parents and community members.

E. The district complies with federal and state law, and local policies for archiving electronic communications produced by its staff and students. The district informs staff and students that any information distributed over the district or school network may be a public record.

2. CURRENT STATUS

2.1 Technology Integration and Literacy

GOALS 2016 - 2019

Task	Complete	Incomplete	In-progress	Comment
Continued PD effort for the use of Instructional Technology			X	
Office 365 Training			X	
Continued iPASS Training SIF/Gradebook/Scheduling			X	

At Ware High School technology tools continue to be incorporated into instruction. Our CAD program was reinstated in the 2015-2016 school year which will expose students to 3D modeling and design. Ware High School continues its involvement with the Virtual High School (VHS) Cooperative. The mission of VHS is to expand the range of courses available to students via the Internet. In exchange for teaching time, Ware High School can offer pre-college level Internet-based courses to twenty students.

Network based programs such as Study Island and MobyMax are in use at Ware High School, Ware Middle School, and Ware Elementary school to support instruction. Ware Elementary School and Ware Middle School are utilizing network-based Lexia software to help reinforce the Reading curriculum and network-based Symphony Math software to reinforce the Math curriculum.

As of the 2015-2016 school year, both Ware Elementary and Ware Middle School have full time library / computer teachers. These teachers will be working closely with classroom teachers to help reinforce general subject areas through the use of technology.

2.2   Technology Professional Development

GOALS 2016 - 2019

Task	Complete	Incomplete	In-progress	Comment
Develop office productivity training material; conduct in-house training (admin and staff)			X	Ongoing
Develop/implement professional development training			X	Ongoing
New technology demonstrations onsite			X	Ongoing
New staff technology orientation			X	Ongoing
Training – technology skills and curriculum-integration (teacher)			X	Ongoing

Technology professional development will always be an on-going process due to constant changes in technology. The goal is to keep faculty and staff up to date on current operating systems, software, student administrative systems and portable technology.

2.3   Accessibility of Technology

GOALS 2016 - 2019

Task	Complete	Incomplete	In-progress	Comment
Acquire/purchase technology equipment			X	Ongoing
Network Infrastructure Upgrade			X	Ongoing
Develop 5 yr replacement plan. Replace Type C computers			X	Ongoing
Deploy Wireless at SMK			X	Working on Density
Deploy Wireless at WMS			X	Working on Density
Deploy Wireless at WHS			X	Working on Density
Upgrade elementary school computer lab	X			
Upgrade WMS computer lab	X			
Upgrade WHS computer labs	X			
Upgrade Teacher Computers at All Schools			X	
Increase access to mobile devices such as Windows tablets and laptops			X	
Phone system upgrade WMS	X			
Phone system upgrade SMK	X			
Phone system upgrade WHS	X			

The following chart presents computer category descriptions established by the Massachusetts Department of Education. Category descriptions are updated annually to reflect technological advancements.

DOE COMPUTER SYSTEM CATEGORY DESCRIPTIONS

Description	Category A	Category B	Category C
2008	• Multimedia computers capable of running virtually all current software, including the latest high-end video and graphics programs • PC - 2.0 GHz CPU or better, single processor OR 1.0 GHz Dual Core, Macintosh - G5(or better) • 1 GB RAM or higher	• Multimedia computers capable of running most software except for the latest video and graphics programs • PC - 1.0-2.0 GHz CPU, Macintosh - G4 (or better running OSX) (or equivalent configurations to meet the stated function) • From 256 MB up to 1 GB RAM	• Multimedia computers capable of running most current productivity applications • Working computers that do not meet the specifications for Type B

WARE PUBLIC SCHOOLS COMPUTER INVENTORY

	Type A	Type B	Type C	TOTAL
Ware High School	246	8	83	337
Ware Middle School	124	3	10	137
Ware Elementary School	114	0	37	151
Central Office	7	0	0	7
Laptops	88	5	3	96
DISTRICT TOTAL	579	16	133	728

WARE HIGH SCHOOL

	Type A	Type B	Type C	TOTAL
Administrative	8	8	13	29
Instructional	238	0	70	308
TOTAL	246	8	83	337

WARE MIDDLE SCHOOL

	Type A	Type B	Type C	TOTAL
Administrative	15	3	1	19
Instructional	109	0	4	113
TOTAL	124	3	10	132

WARE ELEMENTARY SCHOOL

	Type A	Type B	Type C	TOTAL
Administrative	10	0	1	11
Instructional	104	0	45	149
TOTAL	114	0	37	160

FY96 Access Ratio: 24:1
FY01 Access Ratio: 4:1
FY06 Access Ratio: 4:1
FY10 Access Ratio: 4:1
FY13 Access Ratio: 4:1
FY16 Access Ratio: 2:1

The access ratio, as defined by the DOE, measures student-to-computer access of modern, full-functioning Internet-enabled computers. Every few years the DOE updates computer category descriptions to reflect industry standards thereby encouraging regular upgrades and ongoing acquisitions. Significant improvement has been made to the Access ratio from 24:1 (1996) to 2:1 (2016). Currently most of the districts computers meet the DOE definition of a Type A computer, however frequent updates are required as technology keeps changing. The district has implemented a replacement program of rotating leases with a $1 buy-out in order to help keep systems up to date.

Every classroom in the district has at least one high-speed computer that can access the Internet. Every school in the district has a 1Gb backbone with 100Mb connections to each classroom. Furthermore, each school is connected to the district's WAN via 1Gb fiber connections.

2.3.1 REPLACEMENT PLAN

WPS Computer Replacement Plan

	FY16	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**	**FY22**	**FY23**
WHS Lease 1 (31)		Teacher and			239			Teacher and
WHS Lease 2 (31)		Offices			240			Offices
WHS Lease 3 (50)	CAD/LIB			238 / Stu			CAD/LIB	
WMS Lease 1 (31)	Teacher/Off			Lab RM2			Teacher/Off	
SMK Lease 1 (31)		WMS STUD			Lab			WMS STUD
SMK Lease 2 (50)		SMK STUD			Teacher			SMK STUD

Leases are setup to replace key systems every **6** years. Systems that are still usable will rotate down to replace classroom student computers or other areas.

2.4   E-Learning and Communications

GOALS 2016 - 2019

Task	Complete	Incomplete	In-progress	Comment
Video Conferencing (Polycom / Skype)			X	
United Streaming		X		
Teacher websites			X	
Online Credit Recovery			X	Ongoing
Parent portal access to SIS			X	Ongoing
Student E-Mail			X	Ongoing

The district maintains an up-to-date website that is a source of information for parents and community members. The district is working toward the ability to provide teachers direct access to their own section of the website. As well as the website, parents of students at Ware Junior/Senior High School can now log directly into the district's SIS in order to directly access student information. Currently parents can see grades, assignments, attendance and biographical information. Plans are to increase this access to include more options such as discipline and student scheduling requests. As of the 2015 – 2016 school year, students have iStudent accounts and may login to the SIS directly to see grades, attendance, and assignments. They can also do scheduling online which will help streamline the process with guidance.

Students now have access to the Microsoft Office 365 portal. This tool allows for access to Word, PowerPoint and Excel online as well as provides students with online storage so they may work on assignments from home without having to worry about access to software. As part of this software package, students in grades 9 – 12 now have access to district e-mail accounts enabling better communication with teachers.

3. PROGRAM GOALS

The goals of this Technology Plan are intended to develop 21st Century skills and knowledge for all learners, faculty, administrative staff and citizens of the Ware community. To achieve this end, the initiatives described are designed to restructure and support the educational environment by utilizing the power of technology. Staff at the Ware Public Schools recognize the importance of accessing timely and authentic professional development opportunities. Likewise, improved management does not simply result from the automation of existing processes but requires workflow analysis and reengineering to improve productivity. An underlying assumption of this plan is that annual reviews and modifications will take place to ensure that the goals continue to meet the needs o f this system.

3.1 Commitment to a clear vision and mission

The Ware Public Schools is dedicated to utilizing technology to create a supportive environment that maximizes personal effort, respect, individuality, critical thinking and life-long learning for all students, staff and community members.

To monitor the District's progress, year-end technology reports will continue to be provided to the State, School Committee, Superintendent and the General Public. As in past years, technology initiatives will be aligned to the three (3)-Year Local Technology Plan. Progress will be measured against the Massachusetts Technology Benchmark Standards (FY2007). Presently within the District's operational budget, line items are included for technology. As technology access grows, the Ware Public Schools will continue to utilize local, state and federal resources to sustain technology achievement. While programs such as E-Rate, TLCF, ETIS and MassEd.Net have served as seed money, the School District recognizes its need to commit long-term support through the district operating budget and grant opportunities.

Action plan items to achieve these goals include:
1. Local Technology Plan update (2016-2019)
2. Administrative support and accountability at all levels
3. Financial and program-sponsored resources

3.2 Technology Integration and Literacy

The District will support staff members in their efforts to achieve technology competency and to integrate technology into the curriculum.

The Ware Public Schools seeks to provide at least 0.5 FTE staff person to support every 30-60 users in their efforts to achieve technology competency and to integrate technology into the curriculum. Support staff may include library/media specialists, technology specialists or consultants who provide mentoring, coaching, model teaching and co-teaching support. At all levels, administrators will provide teachers with support and guidance to ensure growth in curriculum integration.

Critical action items include:
1. Staff support
2. Administrative support
3. Professional development

3.3 Accessibility of Technology

The Ware Public Schools will provide on-going professional development to staff.

At least 85% of district staff have participated in technology training. Both formal and in-formal training opportunities have and will continue to be available. In addition to conferences and user-group meetings, the Ware Public Schools will evaluate opportunities to offer self-paced courses.

Utilizing professional development days, administrators at all levels will support and account for staff development. On-going training opportunities will be provided to equip each educator with basic technology and integration skills. Professional development programs may include:

1. Internet
2. Email
3. MS Office Suite
4. Student administration (eg. grade reporting, attendance)
5. Curriculum Integration
6. Projectors / Electronic Whiteboards
7. United Streaming
8. Springboard
9. Sound Systems
10. Video Editing

3.4   Accessibility of Technology

At each school building, the Ware Public School District will reach a 2:1 student-to-computer ratio of modern, fully functioning, Internet-enabled computers and devices. The district has made significant progress to increase accessibility of Technology at all school levels.

Presently, the student-to-computer ratio is 2:1 at the district-wide level:

1. Acquire more mobile devices such as windows tablets or laptops in order to increase access to technology directly in the classroom
2. Acquire and keep up-to-date wireless access points in each building to support mobile learning
3. Acquire equipment and software to facilitate access for students and staff with disabilities as needed (eg. Variable height furniture, alternative keyboards, alternative mouse, large screen monitor, Braille printer, closed captioned video, voice recognition software and screen readers).

3.5   E-Learning and Communications

The district will encourage the use of the new Office 365 system as a way for students to access their work from any location enabled with Internet access.

The district will also continue to make parents and students aware of iParent and iStudent. These portal systems into the SIS will allow instant access to student data such as attendance, assignments, grades and progress reports

Action items include:

1. Video conferencing training
2. Office 365 training for students and staff
3. Asses Internet bandwidth required digital learning

4.   IMPLEMENTATION PLAN

To sustain District Technology progress, several priorities have been identified that address the five critical success factors outlined in the state benchmarks. In the area of commitment, the Local Technology Plan update must be completed and adopted. Annual review of all technology projects will occur on the administrative-level to coordinate efforts and resources. Administrative agreement is necessary to ensure commitment and accountability.

Technology Professional Development and Curriculum Integration naturally compliment each other. Professional development will encompass many forms including: in-service, team teaching, user group meetings and self-paced courses. Ongoing district-wide training will be provided for student administration, financial software, E-Mail, Office, electronic white boards, and document cameras. Applications not globally accessible will be provided on an individual basis or in a workgroup setting. A variety of long-distance offerings accessible through the web will help to ensure that at least 85% of the staff will have access to technology training.

The District will support teachers in their efforts to integrate technology by providing direction, professional development and support staff. Initial efforts will focus on the development of a District Technology Curriculum that establishes competency goals for staff and students. Student achievements will be modeled after state standards; teacher goals will encompass technology and curriculum skills.

As noted in the previous section, technology access efforts must focus on equitable distribution of equipment.   By definition, upgrades for all machines throughout the District are required since the DOE computer category description changes yearly. Without new computer acquisitions and regular upgrades, the access ratio is destined to fall. Keeping up with the replacement plan outlined in 2.3.1 will help ensure that technology will be accessible to any student.

As a district, it is important to recognize and utilize emerging technologies such as tablets and e-readers. E-readers, specifically, will provide a great tool for students to access digital curriculum materials. In the long term, these devices may replace the costs associated with maintaining a usable textbook inventory. In order for this to succeed, the district needs to begin to implement a network infrastructure capable of sustaining these devices. This includes deploying faster switches and wireless APs across the district. Finally, a high speed fiber connection will be required in order to be able to access all of these new digital resources.