



Lowell Public Schools

Long Range Technology Plan 2015-2018

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Introduction

Over the last several years, Lowell Public Schools (LPS) has invested in an integrated and comprehensive information technology infrastructure with the capacity to support all aspects of teaching, learning, and management within the school district. Having almost completed an extensive enhancement of the local and wide area networks (LANs and WANs) across the district and wireless capacity at each school facility using E-Rate funding sources, the district contracted with the Center for Educational Leadership and Technology in 2011 to develop a comprehensive Information Technology Blueprint to identify LPS's current status and highest priorities. The information collected during the development of the Technology Blueprint assisted the district in developing a technology plan that would support the educational mission of the school district. This study included a performance review, gap analysis, and recommendations for improvement and will provide the basis for updating the school district's technology plan. The *Information Technology Blueprint* has been particularly relevant for creating a foundation for lifelong learning, which is a critical survival skill for 21st Century learners who must be able to access, analyze, and communicate information in a fast-paced and constantly changing world.

The *Lowell Public Schools' Information Technology Blueprint* thoroughly addresses all of the benchmarks in the Massachusetts Department of Elementary and Secondary Education's (DESE) Technology Plan benchmarks and expands upon them. This document demonstrates the alignment of the LPS *Information Technology Blueprint* to the DESE Technology Plan benchmarks, listing which recommendations comprise the technology goals of LPS. The Lowell Technology Plan 2012-2015, which was approved by DESE in 2012, outlined an aggressive plan to implement a subset of these recommendations. Beginning with the addition of a District Technology Director, LPS successfully implemented a number of these recommendations, including: replacing out-of-date equipment, reorganizing the Technology Department, hiring additional IT staff (including a Help Desk Coordinator, ten part-time technical support staff, and two instructional technology staff) and initiating a district-wide update of classroom technology, including interactive whiteboards, interactive projectors, Apple TVs, teacher computers (laptops or desktops), student classroom computers, and laptop carts. The next phase will involve focusing on professional development and integration.

Four supporting appendices accompany this plan, including:

- The School Technology and Readiness (STaR) Assessment in Appendix A, which shows the 2012 status (the time the blueprint was written) and the 2015 status (the time of this technology update).
- A revised Phasing and Priorities Matrix (PPM) in Appendix B reflects the updated status of the recommendations.
- The summary from a 2015 staff survey, which was conducted as part of the data collection effort for the update is included in Appendix C.
- Finally, Appendix D is a budget summary.



1.0 Benchmark 1 - Commitment to a Clear Vision and Implementation Strategies

The Commitment to a Clear Vision and Implementation Strategies benchmark refers to the critical success factors that must be in place to facilitate a successful technology deployment. These components include strong and supportive leadership, adequate technical support, relevant professional development, and a continuous process of monitoring and evaluation.

The Lowell Public Schools Information Technology Blueprint addresses all of these areas in Chapter 1 (Vision and Introduction), Chapter 14 (Monitoring and Evaluation), Section 2 of Chapters 2 through 14 (Current Status), and Chapter 6 (Staff Development and Human Resources Management), which is available on the district website ([http://www.lowell.k12.ma.us/files/_OCJsl_/33040598126d720b3745a49013852ec4/Technology Blueprint.PDF](http://www.lowell.k12.ma.us/files/_OCJsl_/33040598126d720b3745a49013852ec4/Technology%20Blueprint.PDF)).

The following table indicates the chapter in which these issues are discussed and may include references to the Technology Plan Update process.

Benchmark	How Demonstrated
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.	Chapter 1 of the IT Blueprint Appendix B of this document shows the revised Phasing and Priorities Matrix, which guides the district's planning decisions.
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 full support of the school superintendent to implement the plan.	Chapter 1 The district works closely with the School Committee's Technology Sub-Committee.
C. Needs Assessment 1. The district determines 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.	See Section 2 of all chapters Also, See STaR Chart in Appendix A and the feedback provided by staff as summarized in Appendix C.



Benchmark	How Demonstrated
<p>D. Budget</p> <ol style="list-style-type: none">1. The district recognizes that technology plays a critical role in achieving its goals. The district has a budget that will ensure the implementation of its long-range technology plan.2. The budget includes staffing, infrastructure, hardware, software applications, professional development, support, and contracted services.3. The district seeks funding for technology programs from federal, state, and private resources, as well as from academic departments that are supported by technology. The district explores ways that technology can reduce costs and create efficiencies in other areas of the district budget. <p>E. 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.</p>	<p>See all chapters – Budgets are included in individual Action Plans.</p> <p>Chapter 15 as well as the Budget line in each action plan. Also see the Budget Summary provided in Appendix D below.</p>
<p>F. Evaluation</p> <ol style="list-style-type: none">1. The district routinely consults with technology staff before purchasing technology items, to ensure that the items are appropriate, cost-effective, and sustainable.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.	<p>Chapter 14</p>

Current Status

The district has embraced the LPS Technology Blueprint (2012-2015) and has taken significant steps to begin implementing it, which demonstrates a strong commitment to the vision on the part of both the LPS School Committee and LPS district leadership. The focus for the initial phase has been on getting the right leadership in place and building a strong technical support team. The Information Technology (IT) team includes an IT Director, a Help Desk Coordinator, additional staffing for technical support at the building level, and two district-wide Instructional Technology Specialists to work on curriculum integration. The level of confidence in the Information Technology Department has increased significantly, so that people are exploring options for using technology and participating in technology professional development. Schools and classrooms have also benefited from removing and replacing aging equipment with teacher laptops and classroom computers, as well as interactive whiteboards and/or interactive projectors in all schools.

With the focus on building the IT organization at the district level and developing the infrastructure at the school level, there has not been time to focus on integrating technology into the curriculum. The district has not adopted



technology standards for students or teachers. The focus has been on learning how to use the new technology rather than integrating it into the curriculum.

In summary, since the release of the 2012-2015 version of this technology plan, the following recommendations in Commitment to a Clear Vision and Implementation Strategy have been addressed:

Description	Status	Notes
<p>LESF-1.1 Minimum Technology Learning Environments Guidelines</p> <p>Define, endorse, and advance minimum technology learning environment guidelines to ensure that all teachers and students in all schools have equal access to district technology resources in order to promote advanced and interactive learning in all classrooms by providing technological tools to engage students.</p>	Complete	<p>Most classrooms have a teacher laptop (elementary and middle) or desktop (high school) as well as a projection device and access to a laptop or iPad cart.</p> <p>In addition, there are technology guidelines for what principals can purchase and processes to follow. For example, principals email the technology director to confirm purchase plans prior to procuring the item(s).</p>
<p>LESF-2.1 Application Standardization</p> <p>Standardize administrative productivity software, ensuring that each computer has the latest updates and versions to ensure document compatibility across the district.</p>	Complete	<p>The self-service site provides a list of apps and software that staff are authorized to download.</p>
<p>SPMA-3.2 Fully Deploy Ticketing System</p> <p>The district should enhance the use of the Track-It® system so that an estimated date for corrective action is generated as well as priorities set by the ticket creator and modified and reported to IT. (Note: LPS replaced Track-It with Web Help Desk to provide a more user-friendly interface.)</p>	Complete	<p>With the support of the Help Desk Coordinator, the district is using Web Help Desk effectively. Some additional training is needed. The district will benefit from implementing the Knowledge Store function. During the first three months of implementation, Web Help Desk tickets surpassed a year’s worth of tickets in Track-It.</p>

Next Steps

CA-1.1 Adopt/Endorse Student Technology Standards/Competencies

Formally adopt or endorse NETS for Students, 21st Century skills, and/or the *Massachusetts Technology Literacy Standards and Expectations* for LPS administrators and teaching staff.

SPMA-1.1 Establish a Standards Committee

Establish a standards committee with a process that looks at both the Return on Investment (ROI) and the Total Cost of Ownership (TCO) of said product.

SPMA-1.2 Convene a Quarterly District and City Standards Review

Convene a quarterly standards review meeting between the district and City constituents to discuss what technology to deploy.

PPS-2.1 Project Implementation Methodology

Adopt a formal project management process so that tangential systems can be identified and projects can be monitored.



DSPP-5.1 Project Management Office

Implement a Project Management Office (PMO) and process; including documenting a project charter showing purpose, three-year total cost of ownership, schedule, sponsor, and resources needed.

CAP-3.2 Repository for District Policies (In Process)

Provide a common storage location for all district policies.

MEPI-2.1 Project Evaluations

Define a process for monitoring and evaluating the effectiveness of all major initiatives. Make evaluations part of every project.



2.0 Benchmark 2 – Technology Integration and Literacy

For students to be prepared for both higher education and the workforce in the 21st century, they must master information technology as well as information literacy skills. While this has long been an expectation, it has not always been achieved. The Lowell Public Schools have adopted, but not yet formally embraced the National Educational Technology Standards for Students (NETS•S) and Teachers (NETS•T), including the Information Literacy Skills needed for digital citizenship. As the school district continues to refresh classrooms with interactive and multimedia technologies and updates the teachers’ computing devices, it will embark on a professional development program to prepare teachers to integrate these skills not already in their curriculum. No longer will technology be reserved for a periodic visit to the computer lab; it will be seamlessly integrated into daily teaching and learning.

The Lowell Public Schools Information Technology Blueprint addresses all of these areas in Chapter 2 (Curriculum and Assessment), Chapter 5 (Organizational Development and Staffing), and Chapter 6 (Staff Development and Human Resources Management), which is available on the district website. The following table indicates the chapter in which these issues are discussed and may include references to the Technology Plan Update process.

Benchmark	How Demonstrated
<p>A. Technology Integration</p> <ol style="list-style-type: none"> 1. Outside Teaching Time - At least 90% of teachers use technology every day, including some of the following areas: research, lesson planning, organization, administrative tasks, communications, and collaboration. Teachers explore evolving technologies and share information about technology uses with their colleagues. 2. For Teaching and Learning - At least 90% 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 analysis, communications, and collaboration. Teachers integrate evolving technologies that enhance student interest, inquiry, analysis, collaboration, and creativity. 	Chapter 2
<p>B. Technology Literacy</p> <ol style="list-style-type: none"> 1. The Information Technology Blueprint includes recommendations to support this benchmark. Action plans are included at the end of the corresponding chapter. 2. 100% of teachers are working to meet the proficiency level in technology, and by the end of the 2014-2015 school year, 90% of teachers will have mastered 90% of the skills in the Massachusetts Technology Self-Assessment Tool (TSAT). 	Chapters 2, 6



Benchmark	How Demonstrated
<p>C. Staffing</p> <ol style="list-style-type: none"> 1. The district has a district-level technology director/coordinator. 2. The district provides one FTE instructional technology specialist per 60-120 instructional staff to coach and model. 3. The district has staff specifically dedicated to data management and assessment. 	Chapter 5

Current Status

Lowell Public Schools has made significant foundational progress toward Technology Integration and Literacy. This effort began with the hiring of a visionary Director of Technology who has been given the necessary financial resources to build a knowledgeable department that responds to staff needs in a timely manner. The newly created IT Department has received highly favorable reviews from district and school staff for their friendly customer service approach to requests for technical support and professional development.

While the district has adopted NETS for students and teachers, the standards have not been embraced, resulting in few teachers being aware of them. While working on this goal, LPS will also be working to integrate technology and ICT skills systemically K-12. This can be achieved through the significant progress made on refreshing technology. Most teachers are currently using the newly acquired technology in their classrooms and schools, but many have requested additional technology resources as well as deeper professional development that reaches beyond the basics of how to use something. Some teachers are beginning to ask for professional development that transforms the way they teach. LPS hired two district Instructional Technology Specialists who have been providing this higher level PD to teachers.

In summary, since the release of the 2012-2015 version of this technology plan, the following recommendations in Commitment to Technology Integration and Literacy have been addressed:

Description	Status	Notes
<p>TLT-4.2 Online Subscription Services Investigate and subscribe to a few core online reference databases for upper elementary, middle, and high school research projects and multi-grade level, cross-discipline, Web-based content services appropriate for K-8 students and teachers.</p>	Ongoing	The Lowell High School librarian subscribes to online reference databases.
<p>LESF-1.2 Instructional Technology Refresh Program Research, develop, and maintain a short- and long-term instructional technology refresh program that increases inventories of modern computing devices to levels required for integration of technology into daily practice.</p>	Ongoing	Lowell Public Schools has begun the short- and long- term instructional technology refresh program to increase availability of modern computing devices. IT has removed outdated equipment from the schools while tagging other currently functioning equipment as “do not repair” if broken.
<p>ODS-1.1 Technology Department Director</p>	Complete	LPS hired a Director of Technology in the



Description	Status	Notes
<p>Develop the visionary and leadership role of the Director of the Technology Department, reporting to the Deputy Superintendent of Finance and Operations and participating on the executive leadership team to ensure the role of technology in support of school district priorities.</p>		<p>summer of 2012. He reports direct to the Deputy Superintendent of Finance and Operations.</p>
<p>ODS-1.2 Reorganized Department of Technology</p> <p>Reorganize Management Information Services (MIS) into the Technology Department, which will be responsible for infrastructure, integration, and instructional technology.</p>	<p>Complete</p>	<p>MIS has been reorganized into the Technology Department, led by the new Director and responsible for infrastructure, integration, and instructional technology.</p>
<p>ODS-3.3 Target Ratio for Technical Support Staff</p> <p>Develop a target staffing ratio for technical support and work towards achieving that goal.</p>	<p>Ongoing</p>	<p>IT has established a target staffing ratio for technical support staff and has achieved the goal through additional part-time hires. Additional work is needed to obtain the optimum staffing ratio.</p>
<p>ODS-3.4 Help Desk</p> <p>Define and staff a Help Desk to coordinate the calls and tickets submitted for technical support.</p>	<p>Complete</p>	<p>LPS hired a Help Desk Coordinator in the winter of 2012-13 to manage the calls and tickets related to technical support.</p>
<p>ODS-4.1 Target Ratio for Instructional Technology Facilitators</p> <p>Define the position of Instructional Technology Facilitator (coach position) as a non-affiliated position to support the appropriate use of technology in the curriculum. The recommended staffing level is .5 FTE per 30-60 teachers.</p>	<p>Ongoing</p>	<p>Lowell has defined the position of an Instructional Technology Specialists (ITS) at the district level. In the fall of 2012, LPS hired two new staff to serve in this role. The recommended staffing level has not yet been reached.</p>

Next Steps

CA-2.1 Integration of Technology and ICT Skills

Develop a process and timeline for systemically integrating both student technology skills and information literacy skills in grades K-12, including iReady and PBS Learning Media or Discovery Education.

TLT-4.2 Online Subscription Services (Ongoing)

Investigate and subscribe to a few core online reference databases for upper elementary, middle, and high school research projects and multi-grade level, cross-discipline, Web-based content services appropriate for K-8 students and teachers. Explore a partnership to UMass Lowell to allow LPS students and staff to access digital reference databases. Also explore the free resources available to all Massachusetts residents through the Boston Public Library.

Expand digital resources: Bring in the PBS Learning Media or Discovery Education.



LESF-1.2 Instructional Technology Refresh Program (Ongoing)

Research, develop, and maintain a short- and long-term instructional technology refresh program that increases inventories of modern computing devices to levels required for integration of technology into daily practice.

ODS-3.3 Target Ratio for Technical Support Staff (In Process)

Develop a target staffing ratio for technical support and work towards achieving that goal.

ODS-4.1 Target Ratio for Instructional Technology Facilitators (Ongoing)

Define the position of Instructional Technology Facilitator (coach position) as a non-affiliated position to support the appropriate use of technology in the curriculum. The recommended staffing level is .5 FTE per 30-60 teachers.



3.0 Benchmark 3 – Technology Professional Development

Studies upon studies have demonstrated that a technology initiative can only be successful if it is accompanied by a sustained professional development effort. Technology Professional Development provides not only training on how to use technology tools, but development on how to effectively integrate them into classroom teaching and learning. In addition to this, school and district leadership must adopt and support a vision for educational technology and disseminate this to teachers.

The Lowell Public Schools Information Technology Blueprint addresses all of these areas in Chapter 5 (Organizational Development and Staffing) and Chapter 6 (Staff Development and Human Resources Management), which is available on the district website. The following table indicates the chapter in which these issues are discussed and may include references to the Technology Plan Update process.

Benchmark	How Demonstrated
A. At the end of five years, at least 90% of district staff will have participated in high-quality, ongoing professional development that includes emerging technology issues, technology skills, universal design, and research-based models of technology integration.	Chapter 5
B. Technology professional development is sustained and ongoing and includes coaching, modeling best practices, district-based mentoring, study groups, and online professional development.	Chapter 6
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.	Chapter 6
D. Administrators and teachers consider their own needs for technology professional development.	Chapter 6

Current Status

Lowell Public Schools has made progress in the area of Technology Professional Development, but is poised to make great progress in this area now that it has addressed preliminary components, including infrastructure, hardware, and IT staffing needs. There are now revised job descriptions for IT staff as well as increased training opportunities for IT staff. The addition of several self-service help modules has empowered teachers and other staff to answer their own questions via online tutorials and the self service software site.

The professional development offered by the district-wide Instructional Technology Specialists has been well received by the numerous teachers who have enrolled in the courses. Teachers expressed appreciation for high quality of technology integration support received via the Lowell Teachers Academy. Teachers also requested additional professional development as they continue their journey to integrate technology into the curriculum.

While substantial efforts have been achieved, more is needed in this realm, including endorsement of student technology standards, staff technology proficiencies, and a district-wide technology professional development plan. These efforts would empower teachers to showcase technology via a technology summit.



In summary, since the release of the 2012-2015 version of this technology plan, the following recommendations in Commitment to Technology Professional Development have been addressed:

Description	Status	Notes
<p>ODS-2.1 Job Descriptions for IT Staff</p> <p>Revise job descriptions to reflect all job responsibilities, technical proficiencies, qualifications, certifications, and experience required for these positions.</p>	Completed	Job descriptions for IT staff have been updated.
<p>ODS-3.1 Increased Training Opportunities for Technical Staff</p> <p>Include MIS staff in training activities on new technologies and new systems.</p>	In Process	IT staff have been part of training efforts on new technologies as they have been introduced into the district. This is an ongoing effort.
<p>ODS-3.2 Reduced Dependency on Technical Support Staff</p> <p>Develop and implement a set of strategies for reducing the dependency on MIS staff for technical support.</p>	In Process	While the initiative to reduce staff dependency on IT technical support is an ongoing effort for LPS, great progress has been made, including instructional videos, self-service downloads, and other self-help resources.
<p>SDHR-1.2 Rigorous Technology Professional Development</p> <p>Based on the success of the Lowell Teacher Academy and the Murkland School's improvement model, focus on programs that provide rigorous technology professional development for all teachers.</p>	In Process	The Lowell Teacher Academy continues to thrive in LPS with teachers engaged in professional development. This is an ongoing effort that allows teachers to acquire advanced credits.

Next Steps

CA-1.1 Adopt/Endorse Student Technology Standards/Competencies

Formally adopt or endorse NETS for Students, 21st Century skills, and/or the Massachusetts Technology Literacy Standards and Expectations for LPS administrators and teaching staff.

SDHR-1.1 Technology Proficiencies for All Staff

Define and adopt technology proficiencies for all staff as determined by productivity and/or instructional needs. Revise job descriptions to reflect these and include them in the evaluation process.

SDHR-2.1 Technology and Learning Summit

Plan and host a technology summit to highlight successful practices at the school level and the new direction towards which the district is heading.

SDHR-2.2 Systemic Technology Prof. Development

Integrate the use of technology in all training when appropriate, including NETS for administrators and teachers.



SDHR-3.1 District-Wide Technology Professional Development Plan

Develop a technology professional development plan to ensure that staff members at all levels of proficiency have the opportunity to become proficient in using and integrating technology.

SDHR-6.1 Online PD Catalog and Calendar

Define the needs and functional requirements for an online professional development catalog, calendar, and registration system.

DSPP-2.2 Teachers' Technology Goals

Include technology goals in the performance goals for all teaching and administrative staff.

ODS-3.1 Increased Training Opportunities for Technical Staff (In Process)

Include MIS staff in training activities on new technologies and new systems.

ODS-3.2 Reduced Dependency on Technical Support Staff (In Process)

Develop and implement a set of strategies for reducing the dependency on MIS staff for technical support.

SDHR-1.2 Rigorous Technology Professional Development (In Process)

Based on the success of the Lowell Teacher Academy and the Murkland School's improvement model, focus on programs that provide rigorous technology professional development for all teachers.



4.0 Benchmark 4 -- Accessibility of Technology

Accessibility of Technology is critical to ensure that all students have the opportunity to use the tools that they will be expected to use in higher education and today’s work force. This not only includes sufficient student and teacher devices during the school day, but also access to technology outside the school day, adequate bandwidth to access instructional materials and resources, and sufficient staff and professional development services to support these resources.

The Lowell Public Schools Information Technology Blueprint addresses all of these areas in Chapter 4 (Learning Environments and School Facilities); Chapter 5 (Organizational Development and Staffing), Chapter 12 (Communication and Network Infrastructure); and Chapter 13 (Parent and Community Access and Participation), which is available on the district website. The following table indicates the chapter in which these issues are discussed and may include references to the Technology Plan Update process.

Benchmark	How Demonstrated
<p>A. Hardware Access</p> <ol style="list-style-type: none">1. By the end of 2014-2015, the district has an average ratio of one high-capacity, Internet-connected computer for each classroom.2. The district provides students with emerging technologies appropriate to their grade level.3. The district maximizes access to the general education curriculum for all students, including students with disabilities, using universal design principles and assistive technology devices.4. The district has procurement policies for information and instructional technologies that ensure usability, equivalent access, interoperability, and SIF compliance.5. The district provides technology-rich classrooms, with access to devices such as digital projectors, electronic whiteboards, and student response systems.6. The district has established a computer replacement cycle of five years or less.	Chapter 4



Benchmark	How Demonstrated
<p>B. Internet Access</p> <ol style="list-style-type: none">1. The district provides connectivity to the Internet for all computers in all classrooms in all schools, including wireless connectivity.2. The district provides an external Internet connection to the Internet Service Provider (ISP) of 100 Mbps per 1,000 students/staff.3. 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.	Chapters 3, 12
<p>C. Networking (LAN/WAN)</p> <ol style="list-style-type: none">1. The district provides internal wide area network (WAN) connections from the district to each school between schools of at least 1 Gbps per 1,000 students/staff.2. The district provides access to servers for secure file sharing, backups, scheduling, email, and web publishing, either internally or through contracted services.	Chapter 13
<p>D. Access to the Internet Outside the School Day</p> <ol style="list-style-type: none">1. The district provides access to its computer labs before and after school to ensure that students and staff have adequate access to the Internet outside of the school day.2. The district disseminates an up-to-date list of places where students and staff can access the Internet after school hours.	Chapter 13
<p>E. Staffing</p> <ol style="list-style-type: none">1. The district provides staff or contracted services to ensure that its network is functioning at all times.2. The district resolves technical problems within 24 hours, so that they do not cause major disruptions to curriculum delivery. The district provides clear information about how to access technical support, which can be provided in person or remotely.3. The district provides at least one FTE person to support 400 computers. Technical support can be provided by dedicated staff or contracted services.	Chapter 5



Current Status

Lowell Public Schools has made significant progress in the area of Accessibility to Technology. In 2012, classrooms and labs contained outdated, malfunctioning equipment that had limited software and often did not connect to the internet. Though teachers expressed interest in using technology, they lacked confidence in the ability to do so.

During the last three years, the unusable, outdated equipment has been removed, teachers have been provided with a dedicated teacher laptop or workstation and additional computers have been made available for students. Where previously there were inconsistent operating systems and update versions, standards have been implemented so that most users are on a common platform. All new equipment must adhere to published standards. Projection stations, interactive whiteboards, Apple TVs, or interactive projectors have been installed in many classrooms. A network audit has been completed and resulted in a plan to improve bandwidth and address occasional weaknesses in the wireless infrastructure.

Most schools have laptop or iPad carts to increase accessibility for students, however more access is still needed. As the district prepares to launch a grant-funded, one-to-one program across the sixth grade, they should define and adopt the policies and protocols to ensure success and lay the foundation for a Bring Your Own Technology (BYOT) program in other grades.

In summary, since the release of the 2012-2015 version of this technology plan, the following recommendations in Commitment to Accessibility of Technology have been addressed:

Description	Status	Notes
CA-4.1 Web-based Solution for Sharing Resources Develop and implement a web-based environment for administrators, teachers, parents, and students to share resources at district and school levels.	Complete	This goal was achieved when the district adopted EdLine as its content management system.
TLT-1.1 Web-Based Digital Resources Clearinghouse Expand the awareness of and access to instructional resources by implementing a searchable Web-based digital resources clearinghouse.	In Process	The district is implementing Google Drive, iReady, and PBS Learning Media as a repository for sharing and collaboration.
TLT-1.2 Computer Compatibility Updates To reduce the frustration of users with various versions of Microsoft Office and applications such as Adobe Flash and Adobe Reader, install compatibility modules on and/or upgrade the utility applications on all computers.	Complete	All computers are running current versions of their respective operating systems with standard versions of utilities and plugins. The Self-Service website assists with this by providing users with the links to the approved version of each.
TLT-1.3 Research Cloud-Based Software Services Research the pros and cons of free, cloud-based productivity and information management systems such as Google Tools for Schools or Microsoft's Live@EDU.	In Process	LPS is using Google Drive and piloting iReady. The district needs to explore additional resources to support instruction.



Description	Status	Notes
<p>TLT-2.1 21st Century Classroom Configurations Determine the appropriate levels, collections, selections of blended learning technologies, and peripheral devices that are needed to support 21st century classrooms across the school district.</p>	In Process	K-8 teachers have a laptop. Most classrooms have at least 2 student computers. Almost all classrooms have a projection system. The district is heading into the final phase of the refresh.
<p>SPMA-3.1 SLA Adaption and Adoption The district needs to set a standard that all contracts and future purchases will include Service Level Agreements (SLAs.)</p>	Complete	
<p>PPS-2.2 Technology Disposal Plan The Facilities Department and IT need to develop a Service Level Agreement with commitments of time for pick-up and transfer of equipment from specific school locations to a central storage area.</p>	Complete	The district has developed and deployed a plan to remove and dispose of all obsolete equipment.
<p>CNI-1.1 Document Wireless Implementation Supply the district with as-built drawings of WAP placement layered with penetration forecasts that can assess the number of users capable of connecting from any one location within the school. This should then be reviewed by the district to determine if the level of deployment may be sufficient to accommodate future growth and use of the wireless network.</p>	In Process	The district has identified gaps in wireless coverage and has a plan in place to address these during the summer of 2015.
<p>CNI-1.2 Develop District-wide Voice Over Internet Protocol (VoIP) Initiative Create an overall plan for telephone services culminating in an RFP and an application for E-Rate subsidies.</p>	In Process	A plan is in place to begin VoIP during the next school year in the Admin building.
<p>CNI-2.1 BYOT Pilot Program Configure the wireless network to enable student/teachers and the community to access district resources through the use of their own technology.</p>	In Process	BYOT has been started on a small scale in a few schools, but is an isolated program. A formal pilot with evaluation criteria is needed.
<p>CNI-2.2 VBrick Implementation The media distribution capabilities of the VBrick solution far exceed the services that will be delivered as a part of ensuring contract compliance with the cable provider.</p>	Complete	VBrick was implemented to support a specific application and has achieved that goal. At some time, the district may explore expanding the use of the tool, but this is not a priority at this time.



Description	Status	Notes
<p>CNI-6.1 Vulnerability Assessment and Training Conduct a vulnerability assessment to identify areas in which data and information security could be breached.</p>	<p>Complete</p>	<p>The district has addressed this data vulnerability by moving to cloud applications.</p>

Next Steps

TLT-1.1 Web-Based Digital Resources Clearinghouse (In Process)

Expand the awareness of and access to instructional resources by implementing a searchable Web-based digital resources clearinghouse.

TLT-1.3 Research Cloud-Based Software Services

Research the pros and cons of free, cloud-based productivity and information management systems such as Google Tools for Schools or Microsoft’s Live@EDU.

TLT-2.1 21st Century Classroom Configurations (In Process)

Determine the appropriate levels, collections, selections of blended learning technologies, and peripheral devices that are needed to support 21st Century classrooms across the school district.

TLT-3.1 Technology Resources for Special Populations

Continue to identify resources and strategies at all grade levels to ensure that students included in special populations are provided with the resources and preparation required to achieve AYP.

PPS-3.1 Develop BYOT Security Policy

Implement role-based access for the wireless network that has recently been deployed.

CNI-1.1 Document Wireless Implementation (In Process)

Supply the district with as-built drawings of WAP placement layered with penetration forecasts that can assess the number of users capable of connecting from any one location within the school. This should then be reviewed by the district to determine if the level of deployment may be sufficient to accommodate future growth and use of the wireless network.

CNI-1.2 Develop District-wide VoIP Initiative (In Process)

Create an overall plan for telephone services culminating in an RFP and an application for E-Rate subsidies.

CNI-2.1 BYOT Pilot Program (In Process)

Configure the wireless network to enable students, teachers, and the community to access district resources through the use of their own technology. A pilot program should immediately be developed and deployed within at least one school over the next 6- 12 months.

CAP-1.2 Kiosks for Public Internet Access

Expand Internet access to other areas around the city, such as community centers, ensuring access through public libraries.

MEPI–1.2 Technology Equity

Develop a common way to assess ‘technology equity’ at each school.



5.0 Benchmark 5 – Virtual Learning and Communications

Virtual Learning and Communications provides an alternative to traditional classroom learning and ranges from blogging and conferencing resources to a variety of online learning options. With the availability of Web 2.0 tools, school districts have greater options for servicing students who are homebound or otherwise unable to attend mainstream classes. While some alternative schools have adopted virtual programs as a complete solution, many districts prefer a hybrid model that combines an online component with the traditional classroom format.

The Lowell Public Schools Information Technology Blueprint addresses all of these areas in Chapter 3 (Teaching and Learning Technologies), Chapter 12 (Communication and Network Infrastructure), and Chapter 13 (Parent and Community Access and Participation), which is available on the district website. The following table indicates the chapter in which these issues are discussed and may include references to the Technology Plan Update process.

Benchmark	How Demonstrated
A. The district encourages the development and use of innovative strategies for delivering high-quality courses through the use of technology.	Chapter 2
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.	Chapter 3
C. Classroom applications of virtual learning include courses, collaborative projects, field trips, and discussions.	Chapter 13
D. The district maintains an up-to-date website that includes information for parents and community members.	Chapter 13

Current Status

Lowell Public Schools has made considerable progress in the communications component of the Virtual Learning and Communications section. The school district procured EdLine as its content management system, which enables LPS branding and continuity across all school and district pages. With role-based permissions, users are able to edit content on specific pages. Teachers also have access to create classroom webpages via EdLine or X2, their student information system. Parent have access to translate the website into a multitude of languages.

The district established their vision for the district website, but it is worth revisiting based on analytics and usage trends. Beginning in the 2015-2016 school year, web-hosting will no longer be a service that qualifies for eRate reimbursement. Due to this funding change, Lowell Public Schools is reassessing its priorities and current tool set to determine the best use of funds and which new tools to procure.



In summary, since the release of the 2012-2015 version of this technology plan, the following recommendations in Commitment to Virtual Learning and Communication have been addressed:

Description	Status	Notes
TLT-2.2 School and Teacher Websites Determine a long-term strategy and solution(s) for developing and sustaining dynamic school and teacher websites.	Complete	The district purchased EdLine as its content management system. This system has distributed permissions for updating the district and school websites.
CAP-1.1 Dynamic School and District Websites Develop a more dynamic school-based website that can be easily modified and updated at the school level.	Complete	Through distributed permissions, specific EdLine users can easily update school webpages remotely.
CAP-1.3 Increasing Parent Participation Explore options so that all parents can participate in school events if they choose.	In Process	This ongoing effort to increase parent participation is a top priority for LPS. LPS implemented parent curriculum nights.
CAP-3.1 Electronic School Committee Agenda Tool Select, purchase, and deploy e-agenda and document management software to reduce the time and expense of printing, copying, and distributing lengthy print materials.	Complete	The Lowell School Committee uses Agenda.net for its agenda tool. This system is owned by the city of Lowell.
CAP-4.1 Updated School District Website Develop a vision for the district websites. Initiate a program to review and revise the district website and assign one staff member within each department and within each school to maintain current information on a regular basis.	In Process	LPS established the vision for the district website a couple of years ago. It is worth revisiting to review the vision as well as regular website maintenance.

Next Steps

CAP-1.3 Increasing Parent Participation (In Process)

Explore options so that all parents can participate in school events if they choose.

CAP-4.1 Updated School District Website (in process)

Develop a vision for the district websites. Initiate a program to review and revise the district website and assign one staff member within each department and within each school to maintain current information on a regular basis.

CAP-4.2 Teacher WebPages

Based on the revisions to the eRate procurement of web hosting services, determine the director for teacher webpages based on available resources. Consider the need for one system which provides continuity for parents with children across multiple schools.



6.0 Benchmark 6 - Safety, Security, and Data Retention

Safety, Security, and Data Retention is critical to the success of a systemic technology initiative. Safety and security apply to both the physical safety of people and infrastructure as well as the protection of data related to all aspects. Data, applications, and the network itself must all be safeguarded.

The Lowell Public Schools Information Technology Blueprint addresses all of these areas in Chapter 8 (Policies, Procedures, Security and Safety), Chapter 10 (Administrative and Productivity Systems), and Chapter 11 (Decision Support and Accountability), which is available on the district website. The following table indicates the chapter in which these issues are discussed and may include references to the Technology Plan Update process.

Benchmark	How Demonstrated
A. 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.	Chapter 8
B. The district educates teachers and students about appropriate online behavior. Topics include cyber-bullying, potential risks related to social networking sites and chat rooms, and strategies for dealing with these issues.	Chapters 8, 12
C. The district has a plan to protect the security and confidentiality of the personal information of its students and staff.	Chapter 8
D. 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.	Chapters 8, 12

Current Status

LPS is using a number of data systems for student information, assessment, and reporting; however, they operate in silos. The lack of data interoperability is frustrating for all users. State assessment scores are stored in a FileMaker Pro database, however few users have full access to this to create reports as needed. An integration strategy across the 25 major application systems in the district doesn't exist. As an example, principals use FileMaker Pro and X2 for reports. The view from staff is that it is too hard to get at the state data warehouse so they don't use this resource.

LPS is currently working with a consultant to explore Tableau as a visualization tool. In addition, they are exploring options for a data repository to house student, assessment, and other data.



In summary, since the 2012-2015 release of this technology plan, the following recommendations in Commitment to Safety, Security, and Data Retention have been addressed:

Description	Status	Notes
<p>APS-2.1 Munis' Capabilities Investigate the adoption of Munis modules that are not being used in the district.</p>	Completed	Munis is managed by the City of Lowell, who completed the recommended update.
<p>CA-4.2 Expand X2 Pilot Continue to pilot and implement additional X2 modules, such as the Parent Portal. Develop a monitoring and evaluation strategy to ensure that LPS can refine the deployment of these over time throughout the district.</p>	In Process	The X2 portal is open at Lowell High School, but has not yet been expanded.

Next Steps

PPS-1.2 Online Collaboration Policy

Develop a policy immediately that may enable some teachers to collaborate more effectively with their students and parents.

APS-3.2 District-Wide Assessment System

Set a district-wide standard for an assessment system. Investigate whether to stay with Galileo or not.

DSAS-1.1 Data Governance

Establish a formal data governance process to ensure accurate data.

DSAS-2.1 Data Integration

Investigate the approaches to integration of data and information across these application islands.

DSAS-2.3 Data Repository

As part of the implementation of Tableau as a visualization tool, determine the direction for data retention and investigate solutions for a longitudinal data store.



Appendices



Appendix A—STaR Assessment

This Technology Benchmark is an adaptation of the Massachusetts Education Technology Advisory Council's (ETAC's) School Technology and Readiness Chart (STaR Chart), which can be found on the Massachusetts Department of Elementary and Secondary Education's Educational Technology page (<http://www.doe.mass.edu/boe/sac/edtech/?section=star>).

Please note that Yellow boxes indicate the 2012 status, and Green indicates the advancements noted in 2015, where appropriate. Where Green highlighting does not appear, enough progress has not been made to advance beyond the Yellow status of 2012.

TEACHING AND LEARNING

Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(A)	Impact of Technology on Teacher Role	Mostly teacher-centered lectures. Minimal student use of technology in instruction.	Mostly teacher directed learning. Students use technology to work on individual projects.	Mostly teacher-facilitated learning. Students use technology for cooperative projects in their own classroom.	Mostly student-centered learning, teacher as mentor/facilitator. Students use technology to communicate and collaborate outside the classroom.
(B)	Patterns of Teacher Use	85% of teachers use technology as a productivity tool (e.g., email, grades) and/or as a classroom supplement (e.g. drill and practice).	85% of teachers explore using technology to support curriculum goals (e.g. research, lesson planning).	85% of teachers use technology for research, lesson planning, multimedia, and graphical presentations, and simulations. Teachers share technology uses with colleagues.	85% of teachers integrate evolving technologies that transform the teaching process by allowing for greater levels of access, interest, inquiry, analysis, collaboration, creativity, and content production.
(C)	Design of Instructional Setting	Mostly computer labs or libraries; scheduled use only. (greatest use is in labs and libraries.)	Labs, libraries, many classrooms; flexible scheduling. (Evidence suggests this, but equipment is outdated.)	Lab, libraries, all classrooms, and portable technology (e.g. wireless laptops or handheld electronic devices); flexible scheduling.	Seamlessly integrated throughout classes and all content areas. Technology is available anytime both in school and within the community.



Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(D)	Curriculum Areas	Limited to teaching technology skills at different grade levels.	Use of technology is minimal in a few curricular areas across grade levels.	Integrated into most Curriculum Framework areas and activities at all grade levels	Integral to all curricular areas at all grade levels.
(E)	Patterns of Student Use	Less than half of students show proficiency in Technology Literacy Standards and Expectations for their grade.	More than half of students show proficiency in Technology Literacy Standards and Expectations for their grade.	Almost all of students show proficiency in Technology Literacy Standards and Expectations for their grade.	All students show proficiency in Technology Literacy Standards and Expectations for their grade.
(F)	Content of Training	Technology skills (email, word processing, Internet browser use, etc.) for teachers' professional use. (Greatest evidence.)	Training encompasses more complex professional uses (district applications such as attendance and report cards, scanners, cameras) and curriculum integration strategies (provided with X2).	Training directly ties technology to its use in content areas and how to effectively manage it in the classroom.	Training focuses on modeling, mentoring, and adopting new technologies as well as the integration of Universal Design and access considerations for all students.

EDUCATOR PREPARATION AND DEVELOPMENT

Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(G)	Capabilities of Educators	50% meet TSAT and/or local district teacher technology competencies and implement them into the school environment.	65% meet TSAT and/or local district teacher technology competencies and implement them into the school environment.	80% meet TSAT and/or local district teacher technology competencies and implement them into the school environment.	90% meet TSAT and/or local district teacher technology competencies and implement them into the school environment.



Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(H)	Leadership of Principals, Teacher Leaders and District Administrators	Recognizes benefits of technology in instruction to improve learning outcomes for all students. Minimal personal use (email, word processing, Internet browser use, etc.). Awareness of national standards for administrators.	Supports use of technology in instruction. Uses technology in daily work. Approaching proficiency of national standards for administrators.	Recognizes and identifies exemplary use of technology in instruction. Uses technology skills in daily work such as research and communication and models appropriately with staff. Provides constructive feedback to teachers on their technology use.	Promotes exemplary use of technology in instruction. Models and uses in daily work in communication, presentations, online collaborative projects, and management tasks. Develops a school culture that expects all teachers to use technology. Expects all teachers to use technology well.
(I)	Models of Professional Development	Whole group, skill-based training with minimal follow-up.	Whole group curriculum-based training with follow-up to facilitate classroom implementation.	Coaching, modeling best practices, district-based mentoring. Involvement in a development / improvement process. Study groups.	Creates a culture of inquiry, sharing, and knowledge building. Anytime learning available through a variety of delivery systems (e.g., just-in-time support, mentoring, and peer observation).
(J)	Levels of Understanding	Most at entry or adoption stage (Students learning to use technology; teachers use technology to support traditional instruction).	Most at adaptation stage (technology used to enrich curriculum). Most beginning to use with students.	Most at appropriation stage (technology is integrated, used for its unique capabilities).	Most at invention stage (teachers discover and accept new uses for technology).



Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(K)	Universal Access: Integration of Universal Design and Assistive Technology	Emerging awareness of universal design and assistive technologies (hardware/software) limited to special educators; few examples across the district of universal design strategies or assistive technology used to promote access to the general curriculum.	Awareness of universal design and assistive technologies (hardware/software) by special educators & some general educators; universal design strategies or assistive technology used to promote access to the general curriculum demonstrated across all grade levels.	Awareness of universal design and assistive technologies by special educators & most general educators; universal design strategies or assistive technology used to promote access to the general curriculum demonstrated across all grade levels; staff are designated to provide AT assessment, procurement, support (training) and maintenance.	Systemic adoption of universal design strategies throughout the curriculum and the seamless integration of assistive technology to promote access to the general curriculum for all students; staff are designated to provide AT assessment, procurement, support (training), and maintenance.

ADMINISTRATION AND SUPPORT SERVICES

Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(L)	Vision and Planning	Minimal technology plan; technology used mainly for administrative tasks such as word processing, budgeting, attendance, and grade book.	The technology plan is aligned with the state Technology Plan, and is approved by the School Committee & supported by the Superintendent. Plan collaboratively developed by key stakeholders, guiding policy and practice. Addresses local district teaching and learning standards.	In addition, the Technology Plan is integrated into district plan; used for internal planning, budgeting, and applying for external funding and discounts. Teachers and administrators have a vision for technology use in support of student learning, teacher professionalism, and data management.	The technology plan and vision are focused on improving the success of all students based on needs, research, proven teaching, and learning principles and is actively supported by the School Committee and Superintendent. Technology plan is collaboratively developed, guiding policy and practice; updated at least annually.



Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(M)	Technical Support (hardware, operating system, network)	Some technical support and minimal support tools to resolve 95% of problems in greater than five days. Problems cause major disruptions to curriculum delivery using technology.	Sufficient technical staff and support tools to resolve 95% of problems in two to five days. Same-day technical support for infrastructure problems by call-in. Problems sometimes cause major disruptions to curriculum delivery using technology. Designated Network Administrator.	Sufficient technical staff and support tools to resolve 95% of problems within two days. Same-day in-classroom technical support available. Problems infrequently cause major disruptions to curriculum delivery using technology. Network administrator.	Sufficient technical staff and support tools to resolve 95% of problems within one day. Technical support is readily available on-site for both infrastructure and application problems. Problems do not cause major disruptions to curriculum delivery using technology. Network administrator.
(N)	Technology Integration Specialist	No district level Technology Director.	District level Technology Director.	District level Technology Director. Dedicated instructional technology specialist—one half person per 30-60 staff. Dedicated staff at district level for data management and assessment.	District Technology Director. Dedicated instructional technology specialist—one half person per 30-60 staff. Dedicated staff at district level for data management and assessment and to help produce integrated curriculum content.
		Local instructional technology support is inconsistent.	One-half instructional technology specialist per 60-120 staff.		
(O)	Budget Levels	Budget for hardware and software purchases and professional development.	Budget for hardware and software purchases (new and replacement) and professional development, minimal staffing support, and some ongoing costs.	Budget for purchases, professional development, adequate staffing support, and ongoing costs. Other state, federal, and local programs directed to support technology funding. Business partnerships, donations, and other local funding designated for technology.	Budget for purchases, incentives for professional development, sufficient staffing support, and ongoing costs. Appropriate budget to support district technology plan.



Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(P)	Budget Allocated for Technology (Total Cost of Ownership)	Less than \$175 per student.	Between \$175- \$300 per student.	Between \$300 - \$425 per student	\$425 or more per student
(Q)	Universal Design and Accessible Technology Considerations (e.g., Section 508)	Considerations for universal design and accessible technologies are limited to the Individual Education Program (IEP) process for students with disabilities. Procurement policies for information and instructional technologies do not ensure usability, equivalent access, or interoperability.	Considerations for universal design and accessible technologies are established in areas of high student use (e.g., libraries, computer labs); inconsistent implementation of procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability.	Considerations for universal design and accessible technologies are established in areas of high student use (e.g., libraries, computer labs), some classrooms and administrative offices; routine implementation of procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability.	Universal design and accessible technologies considerations are established throughout the district; procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability in accordance to the guidelines established by Section 508.
(R)	Students Per Instructional Computer	10 or more students per state-of-the-art computer; no firm computer replacement policy established by district.	Fewer than 10 students per state-of-the-art computer; replacement policy established; one computer per teacher.	Fewer than 5 students per state-of-the-art computer; replacement cycle established for 6 years or less; one computer per teacher—possibly a laptop for working at home. Most students have access to handheld electronics. Maintains a list of places students can use technology outside of school.	One student per Type A and B computer or other electronic device. Replacement cycle established for 5-6 years or less; one computer per teacher—possibly a laptop for working at home. 75% of computers meet the state’s standards for state-of-the-art technology. School works with community to provide equitable access to technology for students and community members after school hours.



INFRASTRUCTURE FOR TECHNOLOGY

Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(S)	Internet & WAN Access, Connectivity, and Speed	Dial-up connectivity to the Internet available only on a few computers.	Direct connectivity to the Internet available at each school and in most rooms. Adequate bandwidth to the school to avoid most delays.	District Internet connection of 10 Mbps per 1,000 students and staff district-wide. School connection to district WAN of 100 Mbps per 1,000 students/staff to avoid most delays. Easy access for students and teachers, including some wireless.	District Internet connection of 100 Mbps per 1,000 students and staff district-wide. School connection to district WAN of 1,000 Mbps per 1,000 students/staff. Easy access for students and teachers including most wireless connectivity to enable interactive presentations and video.
(T)	E-Learning Environments	Web- and/or satellite-based interactive learning opportunities delivered synchronously or asynchronously, on a scheduled or unscheduled basis, primarily for professional development on a limited basis.	Expanded web- and/or satellite-based interactive learning opportunities with the possible addition of asynchronous video streaming or synchronous videoconferencing. The addition of courses for professional development for teachers and student courses at the high school and college level (K-16).	Building upon Developing Tech, development of connections for improved access to web-based and/or interactive IP-based video learning on the local, state, regional, national, and international level (school to school, district to district, school/district to state, state to state, country to country). Applications to include courses, cultural projects, virtual field trips, etc.	Seamless IP-based infrastructure expanded to K-16 to allow development of high-quality web- and video-based content. Content distribution available for all students and teachers. Archives allow for content review asynchronously and sharing/distribution of these resources.



Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(U)	LAN	Limited print/file sharing network at each school for lab, administration, and some classrooms. Some shared resources and some secure storage space. Minimum 10/100 Mbps Cat 5 hubbed network.	Most rooms connected to Internet via WAN and wireless connectivity where possible at each school with student access. Minimum 10/100 Mbps Cat 5 switched network. Basic servers for sharing some resources at each school.	All rooms connected to Internet with significant wireless connectivity at each school with sufficient bandwidth for effective student access. Minimum 100 Mbps Cat 5e switched network. District-owned servers or cloud computing provides secure storage, backups, applications, schedule, email, and website. Students, teachers, and parents have easy access to educational resources from home and school (e.g., web portal).	All rooms connected to Internet with significant wireless connectivity at each school with sufficient bandwidth for effective student access. Minimum 100 Mbps/1 Gbps Cat 5e/6 switched network to classroom. Different services on different virtual LANs. All schools have sufficient bandwidth for content delivery through resources such as video streaming and conferencing. Students, teachers, and parents have easy access to educational resources from home and school.
(V)	Other Technologies	Shared teacher use of resources such as telephone, TVs, VCRs, DVD players, and classroom sets of programmable calculators.	Shared use of resources such as telephone, computer video projectors, or interactive white boards, classroom sets of programmable calculators, digital cameras, and scanners.	Dedicated and assigned use of common technologies such as telephone, computer video projectors, or interactive white boards. Programmable calculators assigned to each student as needed. In each school, there is shared use of specialized technologies, digital cameras, scanners, handheld electronic devices.	Readily available fully equipped classrooms with computer/video projectors, interactive whiteboard, and other technology to enhance student instruction. Use of new and emerging technologies.



Row	Focus Areas	Levels of Progress			
		Early Tech	Developing Tech	Proficient Tech	Advanced Tech
(W)	Safety and Security	Backup and restoration procedures and virus protection to guard individual computers. District-wide acceptable use policy in place.	Basic firewall protection and diligent upgrading of network vulnerabilities added to protect against external threats. Protection against a wide range of malware, adware, and spyware. District-wide responsible use policy in place, as well as policy on connecting student/staff-owned devices to school network.	To Developing Tech, add adequate network and server availability protection for expanded capabilities and to ensure dependable access. Protection of workstations from internal network attacks. Encryption of sensitive personal data on local networks. Network supports board policy on connecting student/staff-owned devices (guest devices) on the network.	Usage authentication added for mobile computer and home/external access requirements. Use of virtual LANs (VLANs) to protect network infrastructure and sensitive data. If guest devices are allowed on the network, guest traffic is on an isolated VLAN and/or guest devices are checked for currency of anti-virus software and operating system security patches.

Appendix B - Updated Priorities Matrix

Phasing & Prioritizing Matrix LPS Recommendations ~ 2011-2015 -- Update

This matrix was completed in January, 2011 to prioritize the recommendations in CELT’s technology assessment and the resulting *Information Technology Blueprint*. As part of this Technology Plan Update, we have reviewed the recommendations to determine their current status, anticipating that some are complete, some are in process, and some may no longer be priorities.

Notes:

- The following table defines the acronyms used in the tables that follow. The LDR column indicates which department(s) has leadership responsibility for this project. For example:

CURR	Curriculum and Instruction	INST	Instructional Tech
PS	Pupil Services	IT	Information Technology



LDR	Leadership Team	SA	School Administration
HR	Human Resources	SC	School Committee
LMS	Library Media Services	SUP	Superintendent

- The LDR column indicates which department(s) has leadership responsibility for this project.
- The Priority column identifies the level of priority (**High, Medium, and Low**). This should reflect the **level of importance** of this specific recommendation relative to the other recommendations within this area.
- The Status options are Complete, In Process, Still Needed, and Not Pursuing.

2.0 Curriculum & Instruction

The *Curriculum and Instruction* section focuses on the role technology resources play in to enhancing the delivery of curriculum content and supporting the assessment of student achievement.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
CA-1.1 Adopt/Endorse Student Technology Standards/Competencies Formally adopt or endorse NETS for Students, 21 st Century skills, and/or the <i>Massachusetts Technology Literacy Standards and Expectations</i> .	CURR INST	M	Still Needed	This has not been addressed. Keep on the list for 2015-18.
CA-2.1 Integration of Technology and ICT Skills Develop a process and timeline for systemically integrating both student technology skills and information literacy skills in K-12.	CURR INST	M	Still Needed	This has not been addressed. Keep on the list for 2015-18.
CA-4.1 Web-based Solution for Sharing Resources Develop and implement a web-based environment for administrators, teachers, parents, and students to share resources at district and school levels.			Complete	
CA-4.2 Expand X2 Pilot Continue to pilot and implement additional X2 modules, such as the Parent Portal. Develop a monitoring and evaluation strategy to ensure that LPS can refine the deployment of these over time throughout the district.	INST IT	M	In Process	This has not been done.

3.0 Teaching and Learning



The **Teaching and Learning Technologies** section focuses on the types of digital teaching and learning resources available to LPS teachers, students, and community members.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
TLT-1.1 Web-Based Digital Resources Clearinghouse Expand the awareness of and access to instructional resources by implementing a searchable Web-based digital resources clearinghouse.	INST CURR	H	In Process	Implementing Google Drive.
TLT-1.2 Computer Compatibility Updates To reduce the frustration of users with various versions of Microsoft Office and applications such as Adobe Flash and Adobe Reader, install compatibility modules on and/or upgrade the utility applications on all computers.	INST CURR	H	Complete	Old equipment removed.
TLT-1.3 Research Cloud-Based Software Services Research the pros and cons of free, cloud-based productivity and information management systems such as Google Tools for Schools or Microsoft's Live@EDU.	INST CURR	H	In Process	Using Google Drive and piloting iReady. Need to explore additional resources to support instruction.
TLT-3.1 Differentiating Instruction for Students with Special Needs Continue to address the unique needs of special education students, teachers, and schools with adaptive/assistive technology solutions as appropriate.	INST CURR SPED	H	Still Needed	This is a priority for Curriculum and for the school staff. Need to find Mac-Based testing for SPED.
TLT-2.1 21st Century Classroom Configurations Determine the appropriate levels, collections, selections of blended learning technologies, and peripheral devices that are needed to support 21st Century classrooms across the school district.	INST CURR	H	In Process	K-8 Teachers have a laptop. Most classrooms have at least 2 student computers.
TLT-2.2 School and Teacher Websites Determine the best long-term strategy and solution(s) for developing and sustaining dynamic school and teacher websites.	INST SA	H	Complete	A district webmaster has been hired and has updated the district website and developed school websites. Schools have a local webmaster with a checklist of activities to do each month.



<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
				Teacher websites are still limited and are available via the school website or the student information system.
TLT-3.1 Technology Resources for Special Populations Continue to identify resources and strategies at all grade levels to ensure that students included in special populations are provided with the resources and preparation required to achieve AYP.	SPED INST	H	Still Needed	Special Ed's needs have not yet been addressed, either hardware or software.
TLT-3.2 Credit Recovery Program Implementation Continue to explore credit recovery programs for the Lowell High School.	CURR SA	M	Still Needed	This has not been a priority.
TLT-4.1 Library Management System Upgrade Although not an immediate priority, consider a review of Follett's newer, Web-based LMS.	CURR LMS IT	L	Still Needed	Need to define a strategy for keeping Sagebrush or replacing with Destiny.
TLT-4.2 Online Subscription Services Investigate and subscribe to a few core online reference databases for upper elementary, middle, and high school research projects and multi-grade level, cross-discipline, Web-based content services appropriate for K-8 students and teachers.	CURR LMS	M	In Process	The library has acquired a few new subscription services. Need more information on whether this is sufficient.

4.0 Learning Environment and School Facilities

The Learning Environments and School Facilities section focuses specifically on the many types of learning environments that can be configured, reconfigured, and moved to achieve ubiquitous access to learning resources for all students.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
LESF-1.1 Minimum Technology Learning Environments Guidelines Define, endorse, and advance minimum technology learning environment guidelines to ensure that all teachers and students in all schools have equal access to district technology resources	INST CURR	H	Complete	The Technology Director has defined a standard for classrooms. Principals email him before ordering.



<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
in order to promote advanced and interactive learning in all classrooms by providing technological tools to engage students.				
LESF-1.2 Instructional Technology Refresh Program Research, develop, and maintain a short- and long-term instructional technology refresh program that increases inventories of modern computing devices to levels required for integration of technology into daily practice.	INST IT	H	In Process	In process at all levels. Next steps funded through grant.
LESF-2.1 Application Standardization Standardize administrative productivity software, ensuring that each computer has the latest updates and versions to ensure document compatibility across the district.	INST IT	H	Complete	Come through self-service site.
LESF-3.1 District-Wide Electrical Upgrade Explore a district-wide capital project that would upgrade the electrical service and outlets to each building. Outlet location should be dictated by a classroom layout standard.	City IT	M	In Process	All older buildings are being renovated.
LESF-3.2 Expansion of HS Video Surveillance Expand upon the implementation of the high school video surveillance to be a centralized DVR solution for access anywhere within the City for all schools.	IT	M	Still Needed	This is still a problem.

5.0 Organizational Structure and Technology Staffing

The **Organizational Development and Staffing** section focuses on providing LPS with a staffing and organizational roadmap to meet the demands of implementing this Information Technology Blueprint.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
ODS-1.1 Technology Director Develop the visionary and leadership role of Educational Technology Services Director, reporting to the Deputy Superintendent of Finance and Operations and participating on the executive leadership team to ensure the role of technology in support of school district priorities.	SUP BUS	H	Complete	Very positive feedback about new technology director.
ODS-1.2 Reorganized Department of Technology Reorganize Management Information Services (MIS) into the	SUP BUS	H	Complete	Very positive feedback.



Recommendations:	LDR	Priority	Status	Comments
Department of Technology, which will be responsible for infrastructure, integration, and instructional technology.				
ODS-2.1 Job Descriptions for IT Staff Revise job descriptions to reflect all job responsibilities, technical proficiencies, qualifications, certifications, and experience required for these positions.	HR IT	H	Complete	Revised job descriptions for IT staff.
ODS-2.2 Career Roadmap for IT Staff Develop a formal career track with qualifications, training, and resources to move to the next level.	PD HR IT	M	Still Needed	
ODS-3.1 Increased Training Opportunities for Technical Staff Include MIS staff in training activities on new technologies and new systems.	PD IT	H	In Process	There has been initial training for the part time staff, but not ongoing.
ODS-3.2 Reduced Dependency on Technical Support Staff Develop and implement a set of strategies for reducing the dependency on MIS staff for technical support.	INST	H	In Process	
ODS-3.3 Target Ratio for Technical Support Staff Develop a target staffing ratio for technical support and work towards achieving that goal.	SUP IT	H	In Process	10 Part-time staff hired for tech support. 2 instructional tech.
ODS-3.4 Help Desk Define and staff a Help Desk to coordinate the calls and tickets submitted for technical support.	IT INST	H	Complete	Help Desk coordinator in place.
ODS-4.1 Target Ratio for Instructional Technology Facilitators Define the position of Instructional Technology Facilitator (coach position) as a non-affiliated position to support the appropriate use of technology in curriculum. The recommended staffing level is .5 FTE per 30-60 teachers.	IT INST	H	In Process	LPS hired 2 new staff to serve this role. The recommended staffing level has not yet been reached.

6.0 Professional Learning for All Employees



The Professional Learning for All Employees section focuses on the staff development and training needed to support the use of technology by all staff within LPS.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
SDHR-1.1 Technology Proficiencies for All Staff Define and adopt technology proficiencies for all staff as determined by productivity and/or instructional needs. Revise job descriptions to reflect these and include in evaluation process.	INST	H	Still Needed	This has not been addressed.
SDHR-1.2 Rigorous Technology Professional Development Based on the success of the Lowell Teacher Academy and the Murkland School's improvement model, focus on programs that provide rigorous technology professional development for all teachers.	INST	H	In Process	The two district Technology Integration Specialists are teaching a class at the Lowell Teachers Academy.
SDHR-2.1 Technology and Learning Summit Plan and host a technology summit to highlight successful practices at the school level and the new direction towards which the district is heading.	INST SA	M	Still Needed	This has not been addressed.
SDHR-2.2 Systemic Technology Prof. Development Integrate the use of technology in all training when appropriate.	INST	H	Still Needed	Needs to begin with New Teachers Intro
SDHR-3.1 District-Wide Technology Professional Development Plan Develop a technology professional development plan to ensure that staff members at all levels of proficiency have the opportunity to become proficient in using and integrating technology.	INST PD	H	Still Needed	This has not been addressed.
SDHR-4.1 Proficiency-Based Model for HR Management Develop and implement a proficiency-based model for human resource management that is linked to student achievement.	HR INST	M	Still Needed	This has not been addressed.
SDHR-6.1 Online PD Catalog and Calendar Define the needs and functional requirements for an online professional development catalog, calendar, and registration system.	PD	M	Still Needed	This has not been addressed.



7.0 Standards, Procurement, Maintenance, and Asset Management

The **Standards, Procurement, Maintenance, and Asset Management** section focuses on the need to establish standards. Additionally, it follows up to ensure the business processes of implementing these standards are efficient.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
<p>SPMA-1.1 Establish a Standards Committee A standards committee needs to be established with a process that looks at both the ROI of a product and the TCO of said product.</p>	IT	H	Still Needed	This has not been addressed.
<p>SPMA-1.2 Convene a Quarterly District and City Standards Review The collaboration between the City and the school district is phenomenal as it relates to the technology infrastructure deployed between both entities.</p>	IT	H	Still Needed	This has not been addressed.
<p>SPMA-2.2 E-Rate Documentation and Strategy Development In order to ensure that the E-Rate program is better aligned to the overall district strategy, a complete documentation of past procurements needs to be developed and reviewed.</p>	BUS IT	H	Complete	LPS worked with vendor to mine data and document what LPS owned within the network to help make better choices about eRate purchasing.
<p>SPMA-3.1 SLA Adaption and Adoption The district needs to set a standard that all contracts and future purchases will include Service Level Agreements (SLAs.)</p>	IT	M	Complete	Worked with vendors to have formal SLAs.
<p>SPMA-3.2 Fully Deployed Ticketing System The district should enhance the use of the Track-IT® system so that an estimated date for corrective action is generated as well as priorities set by the ticket creator and modified and reported to IT. Note: LPS replaced Track-It with Web Help Desk to provide a more user-friendly interface.</p>	IT	M	Complete	Worked with vendors to have formal SLAs.
<p>SPMA-4.1 Develop Technology Inventory System An overall inventory of current equipment, services, and software needs to be conducted and a methodology of capturing future assets need to be developed to account for district wide purchases as well as those items purchased via discretionary school budgets.</p>	IT	H	Complete	Paul Weddell developed a tool.



8.0 Policies, Procedures, and Security

The purpose of the Policies, Procedures, and Security section is to describe opportunities, needs, and proposed action plans in these topical areas.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
PPS-1.2 Online Collaboration Policy Immediately develop a policy that may enable some teachers to collaborate more effectively with their students and parents.	INST IT	H	Still needed	
PPS-2.1 Project Implementation Methodology Adopt a formal project management process so that tangential systems can be identified and projects can be monitored.	BUS PM	H	Still needed	
PPS-2.2 Technology Disposal Plan The Facilities Department and IT need to develop a Service Level Agreement with commitments of time for pick-up and transfer of equipment from specific school locations to a central storage area.	IT	H	Complete	All old equipment disposed of.
PPS-3.1 Develop BYOT Security Policy Implement role-based access for the wireless network that has recently been deployed.	IT	H	Still needed	Needs to be a district priority.

9.0 District-, School-, and Program-level Planning

The District-, School-, and Program-level Planning section of the *Information Technology Blueprint* focuses on a coordinated approach to district, school, and program-level planning.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
DSPP-1.2 District-Wide Strategic Plan Develop a 3-5 year strategic plan. Hold a district visioning workshop as the first step in developing the strategic plan.	SUP	H	Still Needed	Needs to be a district priority.
DSPP-2.1 School Improvement Plans Implement a program district-wide to require a rigorous school	SA	M	Complete	



<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
improvement plan with specific measures and indicators of performance for accountability.			Complete	
DSPP-2.2 Teachers' Technology Goals Include technology goals in all teachers' performance goals.	HR SA	H	Still Needed	Needs to be a district priority.
DSPP-3.1 Technology Plan Use the results of this Technology Blueprint is to generate an updated technology plan for 2012-2015.	IT	H	Complete	
DSPP-4.1 Balanced Scorecard Process To ensure all projects are linked to the district's strategic plan, implement a Balanced Scorecard process where a sponsor is assigned for each initiative, then he/she proposes projects to achieve the plan goal.	PM	L	Still Needed	Needs to be a district priority.
DSPP-5.1 Project Management Office Implement a Project Management Office (PMO) and process. This would include documenting a project charter showing purpose, three-year total cost of ownership, schedule, sponsor, and resources needed.	BUS	H	Still Needed	Needs to be a district priority

10.0 Administrative and Productivity Systems

The purpose of the **Administrative and Productivity Systems** section is to describe the present administrative uses of technology and identify opportunities for improving processes and practices.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
APS-2.1 Munis' Capabilities Investigate the adoption of Munis modules that are not being used in the district.	BUS	M	Complete	Updated by the City.
APS-3.2 District-Wide Assessment System Set a district-wide standard for an assessment system. Investigate whether to stay with Galileo or not.	CURR DATA	M	Still Needed	Need a strategy.
APS - 3.3 District-Wide Lesson Planning System Provide a facility to load lesson plans into one system for the district to promote sharing between teachers and to safeguard	CURR	M	Still Needed	Need a strategy.



<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
the plans.				
APS-4.1 Standard for Productivity Systems Establish and implement a district-wide standard of using Microsoft or Google products.	IT INST	H	Complete	

11.0 Decision Support Systems

The **Decision Support and Accountability Systems** section provides the framework to make informed decisions across an organization, and specifically, to analyze programs, expand accountability, and to use data to identify specific target areas that will help improve student learning.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
DSAS-1.1 Data Governance Establish a formal data governance process to ensure accurate data.	DATA	H	Still Needed	Need a strategy.
DSAS-2.1 Data Integration Investigate the approaches to integration of data and information across these application islands.	DATA IT	H	Still Needed	Need a strategy.
DSAS-2.3 Data Repository As part of the implementation of Tableau as a visualization tool, determine the direction for data retention and investigate solutions for a longitudinal data store.	DATA IT	H	Still Needed	Need a strategy.
DSAS-3.1 Data Warehouse Explore options for integrating with DESE’s Cognos data warehouse.	DATA IT	H	In Process	In the planning stage of a data management system.
DSAS-4.1 Document Management System Implement a complete document management system as a significant cost reduction project.	BUS IT	H	In Process	Using Google Drive and DocuStar.
DSAS-4.2 District Web Services Program Determine whether to stay with the City’s Web services or use other products.	INST SUP	H	Complete	Moved to Edline.
DSAS-5.1 Teacher Performance/Accountability	HR	M	Complete	Using TeachPoint for



<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
Develop an implementation plan for teacher performance/accountability. It will require integration between Munis and X2.	IT			teacher evaluation.

12.0 Communications and Network Infrastructure

The **Communications and Network Infrastructure** section of the Information Technology Blueprint focuses on continued enhancement and expansion of advanced infrastructure systems for communication, computing, and networking throughout the district.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
CNI-1.1 Document Wireless Implementation Supply the district with as-built drawings of WAP placement layered with penetration forecasts that can assess the number of users capable of connecting from any one location within the school. This should then be reviewed by the district to determine if the level of deployment may be sufficient to accommodate future growth and use of the wireless network.	IT SA	H	In Process	
CNI-1.2 Develop District-wide VoIP Initiative Create an overall plan for telephone services culminating in an RFP and an application for E-Rate subsidies.	IT	H	In Process	A plan is in place to begin this next year in the Admin building
CNI-2.1 BYOT Pilot Program Configure the wireless network to enable student/teachers and the community to access district resources through the use of their own technology. A pilot program should immediately be developed and deployed within at least one school over the next 6 -12 months.	INST CURR SA IT	H	In Process	This is being done on a small scale in a few schools.
CNI-2.2 VBrick Implementation The media distribution capabilities of the VBrick solution far exceed the services that will be delivered as a part of ensuring contract compliance with the cable provider.	IT	H	Complete	Done
CNI-3.1 WAN and MDF Resiliency The district is moving towards a network that demands reliability and access 24 hours by 7 days a week. With the future addition of a VoIP solution, telephone access will be dependent upon the	IT	M	In Process	IT has a plan in place.



<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
WAN.				
CNI-4.1 Supplemental Internet Access To address the need for additional bandwidth as more users begin to utilize the network as a resource, look at growing the Internet service and adding redundancy by bidding and securing a secondary Internet provider.	IT	M	Complete	Done
CNI-4.2 Outsourcing of Web and Student Email Explore the option of web-hosted email services that would be E-Rate eligible and should be reviewed and bid upon.	IT INST	H	Complete	Using Microsoft Exchange server for staff and Google Drive for students.
CNI-5.1 Infrastructure Documentation Improve the level of documentation for network and IT services.	IT	H	Complete	Done
CNI-5.2 ITIL Training Explore the implementation of ITIL. The first focus areas are Change Management and Service Level Agreements (SLAs).	IT	M	Not started	This has not been a priority.
CNI-6.1 Vulnerability Assessment and Training Conduct a vulnerability assessment to identify areas in which data and information security could be breached.	IT	H	Complete	Most info is in cloud

13.0 Parent and Community Uses of Technology

The Parent and Community Uses of Technology section focuses on the connection between LPS and the community

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
CAP-1.1 Dynamic School Websites Develop a more dynamic school-based website that can be easily modified and updated at the school level.	SA INST	H	Complete	New Webmaster hired.
CAP-1.2 Kiosks for Public Internet Access Expand Internet access to other areas around the city, such as community centers, ensuring access through public libraries	IT SUP	M	Still Needed	Need a strategy.
CAP-1.3 Increasing Parent Participation Explore options so that all parents can participate in school events	SA	H	In Process	Need a strategy.



<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
if they choose.				
CAP-2.1 Expanded Partnerships for Dual Enrollment Continue to expand on partnerships like the UMass Lowell and Middlesex Community College partnership and expand opportunities for dual enrollment through online learning and social networking.	SA CUR R	M	Complete	
CAP-3.2 Repository for District Policies Provide a common storage location for all district policies.	SC	H	In Process	Website has link to full policy binder voted on and approved by School Committee.
CAP-4.1 Updated School District Website Develop a vision for the district websites. Initiate a program to review and revise the district website and assign one staff member within each department and within each school to maintain current information on a regular basis.	IT INST SUP	H	In Process	District webmaster is working on this.

14.0 Monitoring and Evaluation Plan

The **Monitoring and Evaluation** section of the *Information Technology Blueprint* focuses on the processes, structures, and tools for monitoring the implementation of the plan and evaluating its impact in terms of quality and effectiveness.

<i>Recommendations:</i>	<i>LDR</i>	<i>Priority</i>	<i>Status</i>	<i>Comments</i>
MEPI-1.2 Technology Equity Develop a common way to assess ‘technology equity’ at each school.	IT SUP	M	Still Needed	Need a strategy.
MEPI-2.1 Project Evaluations Define a process for monitoring and evaluating the effectiveness of all major initiatives. Make evaluations part of every project.	DATA	H	Still Needed	This has not been a priority.
MEPI-3.1 Reporting Status Develop and implement a dashboard reporting system to display the ongoing progress of major school district initiatives.	DATA	L	Still Needed	This has not been a priority.





Appendix C - Staff Survey Report



Appendix D - Budget Detail