MELROSE TECHNOLOGY PLANNING COMMITTEE EXECUTIVE SUMMARY

*Melrose has struggled to provide the time and attention necessary to make technology a vital part of the teaching and learning environment. The basic premise of the **Melrose Public Schools Five-Year Strategic Instructional Technology Plan**—as informed by research—is that pedagogy and curriculum must drive instructional technology use. Beyond this, the plan is also built upon the knowledge that Melrose students need teachers who understand how to teach in ways that foster the development of thinking skills as well as the acquisition of content knowledge. The following plan provides strategic direction and establishes specific action steps related to how instructional technology will be implemented so as to benefit teaching and learning in Melrose Public Schools over the next five calendar years.*

VISION FOR INSTRUCTIONAL TECHNOLOGY

It is the vision of Melrose Public Schools that students develop their capacity for critical and creative thinking necessary for lifelong success. Students advance their learning through the use of technology tools and resources within a personalized academic environment.

STRATEGIC GOALS

Sun Associates, a professional educational program evaluation firm that specializes in Instructional Technology program review and strategic planning, worked with Melrose's Technology Planning Committee to gather a wide range of surveys, interviews, focus groups and classroom observation data from the district and community. The findings and associated recommendations from that evaluative analysis have subsequently formed the basis for the following strategic goals and related action plans that form the strategic core of this new technology plan:

Student Skills/Outcomes

- In support of curriculum objectives, Melrose students develop the skills, literacies and habits of mind expressed in the Massachusetts Technology Literacy Standards, ISTE Standards-S, and the framework for 21st century skills.
- Melrose students use technology tools and resources within a personalized learning environment that provides different paths to knowledge and skill development.

Teacher Skills/Pedagogy

- Teachers work within a framework of common and consistent expectations -- aligned with national standards such as the ISTE Standards-T – to use instructional technology as a tool to enhance teaching, learning, and assessment.
- Teachers use technology to collaborate and communicate with students, parents and fellow teachers on a consistent and on-going basis.

District Supports

- MPS provides leadership at the district and building level for ensuring the effective use of technology as a tool for teaching and learning.
- MPS provides and ensures technical and instructional-support staffing to support teachers and students in the integration of technology.
- MPS provides all teachers and staff with ongoing training and professional development resources, and develops/promotes policies that drive utilization of those resources.
- Through its ongoing budget process, MPS ensures sufficient and adequate annual funding to support the software, professional development and staffing necessary to implement the five-year strategic technology plan.

Infrastructure

- Through its work with the City of Melrose, MPS ensures that all teachers and students have access to up-to-date, reliable and ubiquitous technology infrastructure that supports the goals of the district's five-year strategic technology plan.

- Through the City of Melrose, the MPS technology infrastructure is maintained, funded and updated on a regular schedule.

<p style="text-align:center">**TECHNOLOGY MANAGEMENT AND STAFFING**</p>

The structure for roles and responsibilities related to technology management and staffing are described in the following abbreviated position descriptions:

Director of Instructional Technology and Library Media provides leadership, management and supervision of all network and computer systems and all technical, instructional technology and library media personnel. The creation of this position will establish an Instructional Technology and Library Media Department, which will include all the district positions listed in this section. This position is proposed to start in the 2015-2016 school year.

Academic Facilitators work directly with school principals, Assistant Superintendent for Teaching and Learning and teaching staff to integrate district instructional technology initiatives so that all students may have individualized learning opportunities, acquire the technological capacity key to 21st century skills, and prepare for college and career. The district has one Academic Facilitator who works at the secondary level. Another Facilitator for the elementary level is being proposed for the 2015-16 school year.

Library Media Specialists collaborate with teachers, students and instructional technology staff to design, teach and assess learning experiences that incorporate inquiry learning, the full range of literacy skills (information, media, visual, digital and technological), critical thinking and the creation of new knowledge. The district currently has two Library Media Specialists at the secondary level and is proposing 1.5 positions at the elementary level.

Aspen Mentors provide as-needed support to staff in the daily use of the district's student information management system. Currently, the district has Aspen Mentors in schools as stipend positions.

Instructional Technology Mentor is similar to the school-based Aspen Mentor and will address immediate teacher needs related to the instructional implementation of technology as a tool for teaching and learning. This position will be added starting in the 2016- 2017 school year.

City of Melrose Chief Information Officer reports to the Melrose Public Schools Superintendent with regard to all interactions with the hardware and network infrastructure in the school district. The CIO oversees the **Melrose Public Schools Network Manager**, **Systems Administrator**, **Help Desk Technician** and **Coordinator of Systems Software**. In conjunction with the Assistant Superintendent of Teaching and Learning, the CIO will oversee the Director of Instructional Technology and Library Media.

<p style="text-align:center">**ANTICIPATED EXPANSION AND UPGRADES**</p>

During the summer of 2013, the district began a phased infrastructure upgrade completing the first phase of the gradual conversion to a centrally managed wireless access system. The second phase of wireless expansion occurred during the 2014-2015 school year, with additional wireless expansion at the Middle, Lincoln, Hoover and Horace Mann Schools.

Computing devices (PCs, tablets, laptops) have not been replaced at the required levels to have a modern computing platform for students and staff. Some services or systems have been maintained but need increases in capacity or service levels to accommodate growth. These services include web filtering, firewall services, email archival and bandwidth to the Internet. The following are anticipated upgrades:

Student devices. To ensure the reliability of the instructional technology tools available for learning and testing, replacement computing devices are required. We are recommending a minimum 3:1 student to device ratio for each school in the district to provide sufficient devices for instruction and online testing.

Teacher devices. The district will need to supply core devices that will allow teachers to create curricular content, access high-bandwidth network resources (Web 2.0 resources), interface with existing technology devices (interactive whiteboards) and effectively communicate with various online systems and networks (cloud-based collaborative environments, and online learning systems).

Device management. Existing and replacement computing devices will require up-to-date device management tools that allow for management and maintenance and that ensure efficient operations and security. The district is pursuing a blended device management platform.

NETWORK INFRASTRUCTURE

The district's network infrastructure must provide a comprehensive, interconnected foundation for learning and operations. As such, the district's physical and wireless network infrastructure will be upgraded to support the capacity necessary to meet our instructional and information management needs.

Web 2.0 and learning resources aligned with instructional goals should be accessible while ensuring filtering and student safety. The district will aggressively upgrade its network bandwidth over three years. It is recommended that Internet connectivity be increased to between 200 Mbps and 300 Mbps.

Data center. Data center consolidation initiated five years ago requires refreshed capabilities and expansion to meet projected service levels and achieve long-term savings. The district will also replace core data center systems (power backup system, select core hardware, and monitoring solutions) that are currently at the end of their life cycles or require upgrades to accommodate future growth.

Cloud. Certain cloud solutions can provide improved return on investment and total cost of ownership. Cloud-based solutions will be evaluated as part of every new purchase this plan calls for to ensure project goals are met with the most efficient and cost-effective solution.

Printing. The district will invest in network printers across all levels to accommodate for instructional printing needs. These printers will be deployed as shared printers for clusters of classrooms.

Communication, Productivity and Collaboration Systems. The district will use Google Apps for Education (GAFE) as a cloud-based cross-platform solution – available at little or no cost to the district – to enable staff to access full messaging and functions from district devices. Starting in the 2015-2016 school year, all students will have GAFE accounts. The district will also implement technology-based assessment solutions that allow staff to assess data and student progress reports.

CLASSROOM TECHNOLOGY

As existing devices such as interactive whiteboards, document cameras and student response systems begin to age, new products are required when they cannot be repaired or when the cost of the repair is comparable to the value a new product. The district will support and replace these devices where appropriate to ensure learning environments are complete.

PURCHASING

All district technology purchases should be submitted to and reviewed by the CIO, regardless of funding source. All approved hardware and software will be standardized and advertised to all buildings.

Replacement Plan. Currently the district is behind schedule in its computing device replacement plan, which calls for replacements every six years. To achieve a stable and equitable infrastructure, district leadership will undertake an aggressive replacement plan to replace all computing devices across the district preferably in the 2015-2016 school year and again in the 2020-2021 school year. This approach will allow the district to execute on its instructional technology plan immediately, equitably and predictably. The district expects to follow the same plan to replace network, wireless and related infrastructure.

EVALUATION AND ASSESSMENT FOR TECHNOLOGY

Melrose Public Schools is committed to conducting a systemic, rigorous and highly formative evaluation process that aims to measure the impact that the Five-Year Strategic Instructional Technology Plan is having in schools and classrooms across the city. This will allow for responsive and frequent fine-tuning of efforts and will lead to a much greater degree of accountability for the use of resources to support instructional technology. The evaluation will include teacher, student and parent survey instruments, classroom observation protocols and interview/focus group questions for teachers and administrators.

FUNDING

The following funding sources for the Melrose Public Schools Five-Year Strategic Instructional Technology Plan will provide the foundation needed to execute the vision as detailed in this plan:

The MPS operating budget will fund yearly operational costs such as software licensing, Internet and telecommunications services and personnel. Specifically these items include:

1) **Increased bandwidth** to accommodate teaching and learning—roughly $20,000 to $30,000 per year

2) **Software subscription licensing costs** for student information systems, instructional software applications, web filtering and anti-virus renewals

3) **Personnel costs** for the Director of Instructional Technology and Library Media, Academic Facilitators, Library Media Specialist and Instructional Technology mentors

City of Melrose capital fund will provide funding for network infrastructure, computing devices and data center equipment. The capital fund will be fully funded each fiscal year per the following schedule:

- Fiscal Year 2016 - $300,000
- Fiscal Year 2017 - $300,000
- Fiscal Year 2018 - $300,000
- Fiscal Year 2019 - $300,000
- Fiscal Year 2020 - $300,000

The Melrose Information Technology Department will work collaboratively with Melrose Public Schools and the City of Melrose financial leadership to find the most appropriate and cost-effective solutions to execute this plan.